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CASE STUDY

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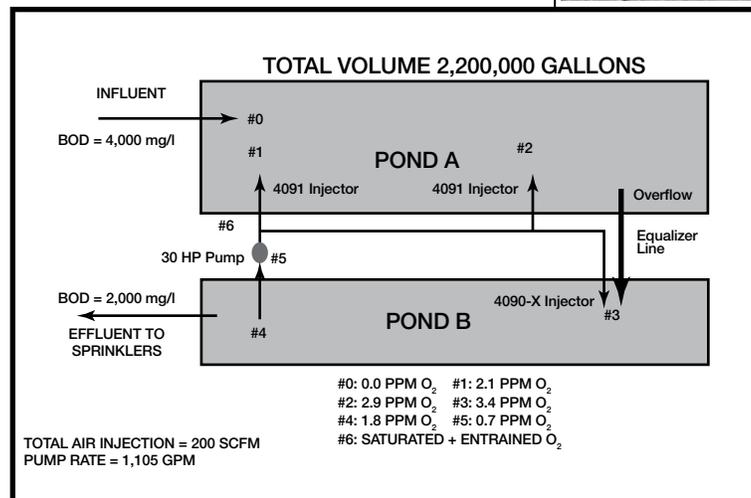
Lagoon Aeration

Mazzei Aeration System Eliminates Odors from Winery Wastewater Lagoons
Madera, CA

The Problem: A California winery was having odor problems from its wastewater evaporation lagoons. The wash and wastewater from this facility contain large amounts of organic matter. The wastewater is collected and pumped to two main lagoons for evaporation, percolation, and sprinkler irrigation. The high organic loading results in high BOD levels, and over time, the lack of oxygen in the wastewater allows anaerobic bacteria to proliferate (turn septic) and cause odor problems.

The Solution: To solve the odor issues, three 4" Mazzei Injectors were installed, powered by a single 30HP centrifugal pump. Water from one lagoon is pumped through the injectors at a rate of 1105 gpm (total) providing an air injection rate of about 135 SCFM. The aerated liquid from each injector is discharged into the bottom of the lagoons (see layout below). The strategic location of the injectors with respect to the lagoon influent/effluent lines, and the equalization line water flow, provide efficient circulation of aerated water through both lagoons.

The Results: This system provides enough recirculation to turn over the total volume of both lagoons every 1.5 days. The air is uniformly dispersed under pressure resulting in maximum oxygen transfer. The dissolved oxygen residual is maintained throughout both lagoons (D.O. readings from various sample locations range from 0.3 ppm to over 10 ppm) and the odor problem has been eliminated. This system was installed in 2001, and continues to provide reliable, low-maintenance, and odor-free operation.



WW Treatment Lagoons
Plan View

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