

Bio²Bloc System Reduces Organic Load at Dairy Plant

Operating on a continuous basis, the Polly-O Cheese plant (Kraft Foods) in Campbell, NY, experienced severe odor problems for many years. Running a parallel aerated lagoon system, the plant pushes through an average of 500,000 GPD, with organic loads as high as 15,000 mg/L BOD. The system was aerated with an old diffusion system, powered by two 250 HP blowers. In addition, four 50 HP floating aerators were used to keep whey solids moving, and add additional air during the summer months.

In spite of all of this aeration, the plant was only able to maintain poor levels of dissolved oxygen, resulting in a very fragile situation for suspended growth organisms. Frequent brine or sour milk spills often killed suspended growth, forcing the plant to import tankers of seed sludge from another dairy in upstate New York to re-start the plant.



Bio²Bloc system being installed with a back-hoe.



Before Bio²Bloc installation

Plant management had experimented with a variety of alternatives, and had come to the conclusion the entire operation would be converted to an anaerobic treatment plant. With groundbreaking for the new plant over three years away, Kraft contracted with FBC for a temporary installation of Bio²Bloc's to reduce BOD overload, and resultant plant odors.

Plant management ordered the installation of a Bio²Bloc system from FBC Technologies. A total of 24 units were installed in the aeration basins to provide mixing and treatment through the submerged media beds. Due to the heavy solids loading in the basin, FBC selected and tested a high-surface area media to allow the formation of a good fixed film to reduce BOD and improve oxygen transfer.



After Bio²Bloc installation

With widely fluctuating organic loads and brine spills in the system, it was important to them to place the Bio²Blocs in a location where influent could come into full contact with them. The 24-unit system was arranged in two "picket lines" of Blocs, across the basin.

Within two weeks of installation, basin odors were noticeably reduced. Monitoring all indicators of basin performance, total dissolved oxygen in the system had increased and pH had also slightly increased. Microbiology was carefully monitored to compare the type and quantity of suspended growth organisms with the organisms which established themselves in the biofilm. All indicators validated the performance of the Bio²Blocs in the improvement of D.O. levels, and reduction of solids and organics.

A complete microbiology report which compared quantity and species of suspended growth to attached growth organisms is available from FBC by contacting the company.