

Seafood Processor Cleans up Wastewater Going to Chesapeake Bay Using an ADI-BVF® Low-Rate Anaerobic Upflow Sludge Blanket Reactor

J H Miles & Co, Inc is a clam processor located in Norfolk, VA. It responded to state and federal regulatory agencies' ongoing efforts to reduce industrial organic loads discharged into the environmentally sensitive Chesapeake Bay by installing a patented* ADI-BVF® reactor. The low-rate anaerobic treatment system worked well for this application (determined in a pilot study) and offered low sludge generation and, thus, low sludge disposal costs.

On the recommendation of a large US engineering consulting firm, ADI was engaged to do an 18-week pilot study using its BVF® technology. Based on a very successful pilot study, a full-scale plant was designed, constructed, and put in operation during 1991. A performance guarantee was required.

The full-scale digester is a 1.7 MG insulated steel tank, 77 ft in diameter by 50 ft high. Due to space limitations, the reactor was built above the adjacent river on a concrete pile foundation cap. The reactor's special floating geomembrane cover system provides positive odor control, minimum heat loss, and allows collection of the biogas for flaring. To prolong the life of this system in a severe marine environment, the reactor and its ancillaries have

special tank coatings and materials of construction to meet the specified tank life of 30 years.

The design flow was 330,000 gpd; the operating temperature, 80°F; and the HRT, 5 d.

Reactor performance to date has been very good. During the first 30 weeks, while at full strength, the reactor maintained consistent removals; COD, BOD, and SS removals are 89, 95, and 86 percent, respectively. As predicted during the pilot study, the full-scale reactor now operates without the need for pH-control chemicals and has a typical effluent pH of 6.9-7.0.

The scope of ADI's services included supply and installation of the reactor and biogas handling system, commissioning and start-up, and production of a process operating manual.



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