WASTEWATER TREATMENT PLANT

55% Volatile Solids Reduction, DO increase, Elimination of Odor on an Aerobic Digester

Aerobic digesters are designed to reduce volatile solids. However, due to concentration of this waste and the initial septicity of most wasted solids, they rarely perform as designed. The accompanying data is from applying **BYO-GON PX-109**® directly into an aerobic digester that is performing as a winter biosolids storage tank. Old age of solids, poor reduction to volatile solids (average 31%), chronic low DO levels (average 0.4 mg/L), and H2S odors were problems mentioned by the operator.

Discussion of Treatment and Changes

BYO-GON PX-109® treatment program began by adding the product to a full digester (360,000 gal), and then dosing at a daily maintenance dose thereafter. Dissolved oxygen levels increased to an average 1.0 mg/L within 3 weeks. Oxygen levels remained high even when aerators were turned off. Concurrently, the H2S odors decreased. Within six weeks, reduction to volatile solids began to increase, indicating a more active biomass in the digester. By week seven, volatile solids were reduced more than 38%, satisfying the 503 regs. Within four months, the operator began decreasing the mechanical oxygen to the digester, which increased the rate of solids reduction. Prior to disposal, volatile solids were reduced more than 55% in this digester.

Summary of Changes

Increase in DO levels

Increased reduction to volatile solids above 38% (satisfying 503 regs)

Elimination of H2S odor

Increased capacity to handle winter storage of biosolids