

Improved Injection Well Performance using BIO ENERGIZER®

FIELD REPORT

Problem

A 49-unit apartment complex was facing closure because of wastewater overflow in its effluent injection wells. The engineer turned to bioremediation to bring the system back to its original capacity. When the apartment complex was built in the mid-1980s, the consulting engineer recommended and installed an activated sludge wastewater treatment plant on site. Wastewater is treated and then pumped to 14 underground injection wells (approximately 1 m [3 ft] in diameter and ranging from 3 to 4 m [10 to 14 ft] deep) for disposal.

The system worked as planned for 10 years; however, after this amount of time the percolation efficiency of the wells had decreased significantly to a point that the injection wells began to overflow. The water level in the well began to rise up to and over the top of the wells and spill out into the surrounding area at ground level. The owners of the complex thought they only had two alternatives. The first was to apply for state and county permits in order to build additional injection wells on site; the second was to simply close the complex. The latter alternative was not a viable option. Something had to be done to improve the percolation rate.

Solution

The plant operator suggested a third alternative: biologically reduce the residual solids and biofilm that were causing the injection wells to clog and overflow. BIO ENERGIZER® from Probiotic Solutions® was used at the site to speed up the natural biological degradation of biofilm and biomass. In addition, the product reduces the volume of solids by dissolving the thin layer of oil, grease, solids, and biofilm clogging the pores of soil in the injection wells. All of these improvements enhance the soil's capacity to absorb more reclaimed water without the need to install more wells.

The engineer initially applied some BIO ENERGIZER® to each overflowing well to jump start the system and improve the percolation rate. In addition, the liquid-based product was applied directly at the wastewater treatment plant at a dosing rate of 10 mg/L of wastewater for the first 30 days to improve the overall system performance. Within one to two weeks, the standing water at the wells had disappeared. This greatly relieved all those involved. After an additional two weeks, the water level within each of the wells had become significantly lower. For the next 60 days, as the water levels in the wells continued to recede, the application rate was reduced to 1 mg/L. After 90 days, when the system was working at its original capacity, the engineer decided to use 0.5 to 1mg/L BIO ENERGIZER® on a continuing basis for maintenance.

Resolution

The bioremediation technology used at this reclaimed water injection well site and wastewater treatment plant was relatively inexpensive (approximately \$600 a month initially, then less than \$300 a month ongoing) for the small plant to maintain the system's improved performance. The cost of constructing more injection wells at the time was estimated to be \$10,000 to \$15,000 per well. The liquid bioremediation product BIO ENERGIZER® supplied by Probiotic Solutions® saved the owner significant capital investment costs while avoiding the need to acquire new permits from the regulatory agencies.

Probiotic Solutions® Product Information

BIO ENERGIZER® is a broad-spectrum bio-activator containing over 30 essential microbial growth-promoting ingredients. By design, BIO ENERGIZER® is a balanced formulation of vitamins, trace nutrients, enzymes, organic acids, and biostimulants that motivate the existing microbial community to greater metabolic capacity and efficiency. BIO ENERGIZER® is not a bacterium nor an inoculum.

For many years, wastewater operators have continued to use BIO ENERGIZER® to cut their sludge hauling costs.

Operators Using BIO ENERGIZER® Report:

- 1) Increases in BOD removal efficiency.** BIO ENERGIZER® improves treatment plant removal efficiency to increase plant treatment capacity and more easily meet effluent requirements.
- 2) The elimination of expensive dredging costs.** BIO ENERGIZER® converts sludge into gases and water, reducing sludge accumulations. No draining, drying, excavating, or inconvenient down time.
- 3) The reduction of odors and aeration costs.** BIO ENERGIZER® enhances aerobic and facultative biological eco-systems to reduce the production of objectionable and offensive odors. BIO ENERGIZER® also increases the dissolved oxygen levels which decreases the need for aeration.

BIO ENERGIZER® enhances endogenous respiration for faster and more complete oxidation of sludge into carbon dioxide and water.

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Our Probiotic Solutions® Products are Highly Efficient and Effective Due to Our Unique Delivery System

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Quote and System Evaluation.*

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