

WASTE WATER TREATMENT BY BIOREMEDIATION - A CASE STUDY

VEDANT SHAH¹, C. S. ASHWIN¹, ALPANA MAHAPATRA²

1. Student, Dept. of Chemical Engineering, DJSCOE, Mumbai, India

2. Professor, Dept. of Chemical Engineering, DJSCOE, Mumbai, India

Abstract

Bioremediation is a technique which involves the use of organisms to remove or neutralize pollutants from contaminated water. This paper has discussed in detail how this technique has been implemented by Brihanmumbai Municipal Corporation (BMC) for sewage treatment. Mumbai has mainly two-tier sewage system, namely, underground sewage system and storm water sewage system. Presence of solid contaminants in water prevents free flow of water due to choking of the drainage pipelines which further aggravates the situation. To tackle this problem, BMC earlier used synthetic chemicals, but these chemicals reacted with the waste and led to production of flammable gases like methane. This again posed a big threat. To get rid of this problem/threat, BMC has implemented bioremediation to treat the sewage water. The bioremediant helps in accelerating the growth of bacteria in waste water which are responsible for aerobic oxidation of solid wastes present in the effluent. This paper has also discussed in detail about the manufacturing of the bioremediant. Analysis of experimental data has been done which validates the superiority of this technique as compared to other techniques used by BMC earlier. BMC has been using this technique also for cleansing lakes and other water bodies.

Keywords: Bioremediation, Bioremediant, Brihanmumbai Municipal Corporation (BMC), Sewage