LAPURAN PROJEK TAHUN AKHIR

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INSTITUT TEKNOLOGI MARA

SHAH ALAM

DESIGN OF SEWAGE TREATMENT PLANT:

USING 'BIOTREAT' MODEL

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SYNOPSIS

The main object of researched on waste treatment is to control and reduce the environmental pollution. It is important that the methods evolved are within the economic means of the community served.

It is generally recognised that some form of biological treatment provides the most economical solution for treatment of domestic waste waters and industrial effluents. In this respect, we made use of the biological treatment model 'Biotreat' as a design aid for a full range of biological processes employing suspended growth in a completely-mixed reactor. 'Biotreat' is capable of describing the overall reaction that occurs at a selected solid retention time so that mass balances of substrate, biological sludge, oxygen consumption and nutrient requirements can be made.

In our study we compared actual measured BOD removal efficiencies to that of the 'Biotreat' values. Studies were carried out at Pantai Sewage Treatment Plant, Wardieburn Housing Estate and ITM Package to make comparisons of these values. Only aerated lagoons, oxidation ponds and activated sludge process were being studied. From the results obtained, it was found that the treatment plants have very much lower efficiencies compared to the 'Biotreat' values.

This is mainly due to the fact that not enough input datas were entered and hence gave inaccurate results. It is hoped that further studies on 'Biotreat' model will be carried out in future since it is an effective tool as an aid in the design of sewage plants.

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