

KEY WORD:

ACTIVATED SLUDGE/DOMESTIC SEWAGE/SOLID RETAINMENT TIME

RUNGSAK HOMSRI : BEVIOR OF ACTIVATED SLUDGE IN REMOVAL OF LOW BOD DOMESTIC SEWAGE. THESIS ADVISOR : ASSO. PROF. MUNSIN TANTOOLAVEST, Ph.D. 212 pp. ISBN 974-584-715-1

The objective of this research was to study the behavior of activated sludge for treatment of the domestic sewage having low concentration of BOD and COD but high concentration of nitrogen. The sewage had been taken from Huay Kwang Housing Authority wastewater treatment plant. And it had been diluted with tap water at equal volume. Average concentration of BOD, COD and TKN of diluted sewage were 78.6, 157.1 and 33.9 mg/l respectively. The detention time of aeration tank was kept constant at 4 hours in every experiments.

The MLSS concentration was found to be in the range of 586-3402 mg/l when the activated sludge system were operated at SRT 2-22.7 days. The final effluent COD was found in the range of 30-40 mg/l.

Low pH (as low as 5.23-6.42) in the aeration tank due to the occurrence of nitrification was experienced when the system was operated at SRT 3.8 days or more.

Sludge bulking due to filamentous bacteria was found in most experiments of SRT 3.8-22.7 days. The maximum V30 was 970 mg/l and SVI was 1,225. But V30 and SVI could be reduced after the installation of the aerobic selector tank into the activated sludge system.

Rising sludge due to denitrification was normally found in the experiment of SRT 3.8-22.7 days. The higher sludge recycle ratio could partially lessen the sludge rising problem.

The experiment of 2 days SRT was not found the problem of low pH in aeration tank, sludge bluking and rising sludge.