

Thesis Title

Use of Environ for Increasing Efficiency of  
Activated Sludge Wastewater Treatment

Name

Tapana Cheunbarn

Degree

Master of Science (Environmental Technology)

Thesis Supervisory Committee

Suvit Shumnumisirivath, B.Eng.(hon.), M.S.  
(Env. & Water resources eng.)

Krisana Teankaprasith, B.Sc.(Sanitary), M.S.  
(Env.H.)

Poranee Wangthamrongwong, B.Sc, M.S. (Bot.)

Nophadol In-na, B.Eng.(hon.), M.Eng.(Water  
resources eng.), M.Sc.(First class honor),  
Ph.D.(Hydrology & Water resources)

Date of graduation 23 April B.E. 2535 (1992)

### Abstract

The purpose of this research work is to study the use of Environ to increase an efficiency of an activated sludge wastewater treatment. The Environ is an extract obtained from the bark of Quillaia Saponaria Mol. The experiments were divided into 2 sets of activated sludge wastewater treatment models. One set was made as a blank. The Environ was added in an aeration tank at the concentration of 10 ppm of the influent flow in the other set. The wastewater sample used was synthetic wastewater with COD value of 500 mg/l. Two volumetric loading were applied,

i.e., 37.70 and 75.42 lb BOD<sub>5</sub>/day/1000 ft<sup>3</sup>. The latter loading is higher than the normal loading.

The experimental results showed that when the Environ is added into the aeration tank, the removals of COD, BOD and SS were improved. For the volumetric loading of 37.70 lb BOD<sub>5</sub>/1000 ft<sup>3</sup>, COD, BOD and SS removals were 95.1%, 94.9% and 92.5 % respectively. And for the volumetric loading of 75.42 lb BOD<sub>5</sub>/day/1000 ft<sup>3</sup> which is two times higher, COD, BOD and SS removals were 93.1%, 93.2% and 89.2 % respectively. In conclusion the Environ can improve the system stability and the effluent quality in the activated sludge treatment model which is overloaded.