KUMTORN SORNMANAPONG : A STUDY OF COALESCER PERFORMANCE FOR LONG TERM CONTINUOUS FEED CONDITION. THESIS ADVISOR : ASSO. PROF. SURAPOL SAIPANICH, DR.ING. 142pp.

This experiment was undertaken to study a coalescer's parameters and its performance under a long term continuous feed condition. The synthetic wastewater of kerosene and water was used in the experiment. An application of coalescer the for the industries was also observed.

The results show that the maximum TOC removal efficiency was obtained to the hydrophillic resin used as the media in the coalescer. The media used at the critical depth also gave the maximum TOC removal effciency. The TOC removal efficiency varies inversely with the media's diameter, and the feeding rate. The head loss varied directly with the bed depth and the feeding rate but varied inversely with the media's diameter.

During 100 hours of continuous feed condition, the TOC removal efficiency and the head loss of the coaleseer were not constant due to the behavior of the suspended solids. The suspended solid would deposit in and separate from media, so the characteristics of media would change during the operating.Media made of the oleophilic resin seemed to be the best media to reduce those effects of the suspension solid. The feeding rate at 12 lits/m^2-sec gives the better TOC removal efficiency than that at 3 lits/m^2-sec.

A field test of the coalescer for Thai Castor Industries and Thanakorn Vegetable Oil Product Company showed very low TOC removal efficiency. The presence of a surfactant in the wastewater was observed to be the cause.