

# A Study on the Effectiveness of Palm Oil Mill Effluent (POME) Treatment Systems

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## ABSTRACT

*Malaysia is one of the leading countries in producing and exporting palm oil. The production process bulk quantities of high strength palm mill effluent. The palm oil industry contributes to the environmental problem due to the effluent. The palm oil effluent must be treated using appropriate systems to reduce the hazardous substances and volume of the effluent. Hence, the study on the effectiveness of these treatment systems are investigated to compare certain parameters such as pH, suspended solids, biochemical oxygen demand (BOD) and chemical oxygen demand (COD) with the guidelines established by the Environmental Quality Act 1974 (EQA). The study consists of two palm oil mill effluent treatment systems which are the ponding system (Kalumpong Oil Mill) and open tank digester system (Chersonese Oil Mill). Samples were taken from both palm oil mills for laboratory testing and on-site testing for the identified parameters for the treatment systems. The effectiveness for both palm oil mill effluent treatment systems depends on the treatment stages that provide different effect according to the treatment processes that have been done and the removal efficiency of BOD, COD and suspended solids for both treatment systems from the lab and on-site results.*

**Keywords:** *Palm oil mill effluent, ponding system, open tank digester system, wastewater treatment system*