Koedkao Peeratiyuth 2010: The Effect of Volatile Fatty Acid on Migration of Heavy Metals from Stabilized Hazardous Waste in Secured Landfill. Master of Engineering (Environmental Engineering), Major Field: Environmental Engineering, Department of Environmental Engineering. Thesis Advisor: Mr. Suchart Leungprasert, Ph.D. 109 pages.

Although hazardous waste was stabilized and solidified with cement-lime process, it has still found some heavy metals and organic contents with very high concentrations in leachate from the secured landfill in Thailand. This situation is not usual because normally at pH of 12 any microbial activity should be inhibited resulting no organic concentration or its end products found in the leachate. The goal of this research is to investigate the effect of volatile fatty acid variation on heavy metals leaching in the stabilized hazardous waste.

The results showed that leaching of heavy metals increased when the addition amount of acetic acids increased. The gas production, volatile fatty acid generation and volatile solid reduction from simulated landfill reactor operation indicated that microbial activity had occurred. The results showed that TOC were reduced during the operation, The third phase involve total carbon mass balance calculation and gas chromatography result which draw conclusion of bacteria species which responsible for gas production and total carbon utilization inside stabilized hazardous waste body.

_____ _____ __ / __ / __

Student's signature Thesis Advisor's signature