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KITTITOUCH NUMCHAIWONG : THE EFFICIENCY OF SETTLING
TUBES OIL SEPARATOR IN WASTEWATER TREATMENT FROM GAS
STATION. THESIS ADVISORS : SUVIT SHUMNUMSIRIVATH, M.S.(Env. &
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The purpose of this research was to study the efficiency of using settling
tubes to separate oil and grease and suspended solids in wastewater from a gas station.
The separator was made of a steel tank with dimensions of 1.20 m × 2.40 m × 1.60 m.
Four hundred and seventy four settling tubes with dimensions of diameter = 3.81 cm,
length = 90 cm were installed parallel to one another with a 75 degree inclination from
the plane, inside the separator tank. The experiments consisted of 2 options with
different overflow rates of wastewater. Option 1: The overflow rate of wastewater
was between 0.11-0.22 m³/m²-hr. Option 2: The overflow rate of wastewater was
between 0.33-0.44 m³/m²-hr.

The results show that the efficiencies of oil and grease removal for option 1
and option 2 were 50.88% and 35.60%, respectively, and the efficiencies of
suspended solids removal were 18.22% and 12.89% respectively. It was found that
option 1 had higher efficiency for both oil and grease and suspended solids removal;
these differences were statistically significant (P-value = 0.0019 and P-value = 0.0140
respectively).