

TREATMENT OF HYDROCARBONS CONTAMINATED SEAWATER FOR
AQUACULTURE USE BY USING DIFFERENT TYPE OF LOCAL MATERIALS
AND AN OIL OXIDIZING BACTERIUM

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BY

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**This project report is submitted
in partial fulfilment of the requirement for the degree of
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Dedicated to Dad and Mom -

For your unconditional love and sacrifice.

I love you both.

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May God bless all of you.

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ABSTRACT

Materials used in this study for removing the WSF oil in the seawater were coconut husks, shrimp wastes, synthetic sponges and an oil oxidizing bacterium. Crude oil used to prepare the WSF oil solution in this study was PETRONAS Tapis A crude oil. The efficiency of coconut husks, shrimp wastes, synthetic sponges and bacterial-silt mixture for removing hydrocarbons in seawater were 2.02 mg/g, 1.31 mg/g, 24.28 mg/g and 0.20 mg/g respectively. Synthetic sponges exhibited the highest efficiency to remove hydrocarbon in the seawater. Then followed by coconut husks, shrimp wastes and the bacterial-silt mixture. All materials used in this study had varies capacity for quantitative treatment of the hydrocarbons contaminated seawater. Synthetic sponges showed the highest capacity to treat the seawater. Then follow by coconut husks, shrimp wastes and bacterial-silt mixture. A hydrocarbon treatment cartridge is developed by using coconut husks as the column material. This cartridge has capacity to treat 1000 m³ hydrocarbons contaminated seawater and reduced WSF oil concentration in seawater to less than 0.05 mg/L. This level of WSF oil is safe for aquaculture uses.