

Petroleum degradation in soil by thermophilic bacteria with biopile reactor

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Abstrak

Crude oil degradation has been carried out using biopile reactor in TPH concentration of 5%, 10% and 15%. The thermophilic microorganism used from isolation result and identification are *Aeromonas salmonicida*, *Bacillus pantothenicus*, and *Stenotrophomonas maltophilia*. Biodegrade of biopile reactor done by various concentration Total Petroleum Hydrocarbon (TPH), Total Plate Count (TPC), and Volatile Suspended Solid (VSS) per day during 30 day.

Biodegrade kinetic parameter calculated are μ , μ_{max} , Y , Y_t , Y_{obs} , K_d , K_s from TPH concentration decision, TPC and VSS in every microorganism with t (observation time) that is 0 hour to 168 hour. Crude oil separation efficiency in a biopile reactor shows that the largest separation occurs on a starting TPH concentrate of 15% which was 61.8% later on followed on a starting TPH concentrate of 10% and 5% which was as much as 61% and 48.4%.