

Chatnarong Pongcharoen 2012: Remediation of Petroleum Hydrocarbon-contaminated Soil by Fenton-like Oxidation and Persulfate Oxidation. Master of Science (Environmental Technology and Management), Major Field: Environmental Technology and Management, Department of Environmental Technology and Management. Thesis Advisor: Associate Professor Tunlawit Satapanajaru, Ph.D. 68 pages.

This research objective was to study the effectiveness of the optimal treatment condition of Fenton-like oxidation process and Persulfate oxidation process to removal contaminant in petroleum contaminated soil. The result of Fenton-like oxidation process demonstrated that the optimum condition was that molar ratio of hydrogen peroxide to ferric ion ( $H_2O_2:Fe^{3+}$ ) was 200:1, the pH was 4.0. The effective of removal petroleum hydrocarbon was higher than 90% within 24 hours. The result of persulfate oxidation process demonstrated that the optimum concentration of persulfate was 30 % (w/w). Approximately 50 % of petroleum hydrocarbon removal was observed within 24 hours. The result of effect of pH condition on contaminant removal indicated that the difference pH condition which were ranged from 3 to 10 are not significantly difference at the 95% confidence level ( $p<0.05$ )

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Thesis Advisor's signature

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