

Wannipa Nongpong 2007: Chemical Oxidation of Toluene in Saturated Zone Using Slowly Released Oxidizing Agent. Master of Engineering (Environmental Engineering), Major Field: Environmental Engineering, Department of Environmental Engineering. Thesis Advisor: Assistant Professor Cheema Chomsurin, Ph.D. 111 pages.

Chemical oxidation of toluene was studied in saturated sand using potassium permanganate (KMnO_4) that was released from organic matrix. Three organic materials used were volcano rock, paraffin wax and coconut ride. The releasing rate from solid KMnO_4 . It was found that the solid KMnO_4 attached to paraffin wax provide low and constant releasing rate which is suitable for toluene oxidation.

Experiment showed that when KMnO_4 was released at Reynold number equaled where flow rate was 2 ml/min and pore volume was 49.87, toluene removed efficiency was 91.85.

Wannipa Nongpong

Student's signature

C. Chomsurin Oct 1 2007

Thesis Advisor's signature