Thesis Title Comparison of the Tracing Pollution Dyes

Name Charan Thepouyphon

Degree Master of Science (Environmental Technology)

Thesis Supervisory Committee

Komon Sivaboarvon, B.Sc., M.S.(Hygiene), M.S.P.H., Ph.D. (Env.H.Sc.)

Chaovayut Phornpimolthape, B.Eng., M.Eng. M.S.(Ind. Eng. Operation Research)

Shalasai Huangprasert, B.Sc., M.S.(Env.H.)

Date of graduation 26 May B.E. 2536 (1993)

ABSTRACT

In this experiment a small hole of 0.15meter in diameter and 1.2 meters deep was dug in the middle of a 0.7 meter diameter and 0.60 meter deep pit, in order to investigate the underground table water. After that three experimented wells were dug in that direction 3 ,5 and 10 meters from the pit. Night soil about 0.28 m^3 was filled into the pit. Three days after, four test color dyes, they are fluorescein dye, material color, lac ,potassium permanganate and sodium chloride at various concentration were added into the night soil one by one respectively. Tracing of each dye was check in those wells.

The results showed that all test color dyes can move through the sandy clay loam soil farther than the clay loam soil. Fluorescein dye is the best material to follow up the trace pollution, but it is very expensive. Material color , lac and potassium permanganate can be used instead of fluorescein dye. The material color is not safe for drinking water,it can be used for tracing sewage pollution only. Sodium chloride can be used to substitute fluorescein dye too, but in larger amount and have to be analysed in the laboratory.