ASSESSING GROUNDWATER CONTAMINATION POTENTIAL BY PESTICIDES USING APPLICATION OF GEOGRAPHICAL INFORMATION SYSTEM (GIS) IN KUALA SELANGOR

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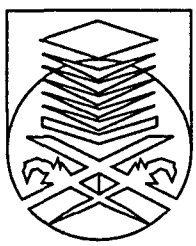

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DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. The project/dissertation is original and it is the result of my own work, unless otherwise indicated or acknowledged as referenced work.

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ABSTRACT

This study used geographic information systems (GIS) technology tools to access the groundwater contamination potential by pesticides. The study area is Kuala Selangor District, located in the State of Selangor. Factors used for this purpose were soil texture, percent slope, types of landuse and land cover, aquifer media, and impact of vadose zone. These factors, which effect the movement of pesticides to reach groundwater, were then reclassified to a common scale showing potential to cause groundwater contamination by pesticides. Reclassified factors then overlaying by put the weight for each factor. Scale values and weight used to reclassified and weighted those factors selected from the rating values in DRASTIC model, which developed by U.S Environment Protection Agency and other previous research.

Geographical Information System (GIS) also used to compile, manage, manipulate, and analyzes geospatial data, besides also used to display the results for every stages of GIS operation for this study. Other than that, Geographical Information System also used to create a map showing the groundwater contamination potential by pesticides, by overlaying the factors.

Final result will be useful for policy makers or administrators of government agencies to prioritize areas susceptible to pesticide pollution. Once the areas are prioritized, groundwater monitoring programs and protective actions can be focused particularly on those areas. This helps agencies to save the budget because it is not necessary to monitor groundwater resources beneath all of the entire study area. This is a very important contribution of Geographical Information System (GIS) towards environmental management.

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