

## INTISARI

Penelitian ini bertujuan untuk mengetahui kadar pencemaran oleh bahan bakar minyak pada airtanah di Kelurahan Jlagran, Kota Yogyakarta, menentukan penyebaran kontaminan bahan bakar minyak pada airtanah di daerah Jlagran, dan memprediksi kapan kontaminan bahan bakar minyak pada airtanah di daerah Jlagran mencapai kadar 0 mg/L. Penelitian dilakukan dengan mengukur ketinggian sumur sehingga diperoleh peta kontur muka airtanah serta pengamatan daerah penelitian sehingga menghasilkan peta geologi dan geomorfologi daerah penelitian. Kegiatan lapangan juga disertai pengambilan sampel airtanah dan sampel endapan tepi sungai. Pada tahap pasca lapangan sampel airtanah tersebut diuji kadar minyak lemaknya, serta sampel endapan tepi sungai diuji nilai permeabilitas dan porositasnya. Dari hasil yang didapat kemudian data diolah sehingga menghasilkan peta *plume* pencemaran dan prediksi konsentrasi kontaminan. Berdasarkan hasil pengujian maka daerah penelitian dinyatakan masih tercemar oleh kontaminan bahan bakar minyak dengan kadar 1 mg/L hingga 55 mg/L. Dari peta *plume* kontaminan BBM nampak bahwa pergerakan pencemar searah dengan arah aliran airtanah yaitu berarah tenggara-barat laut. Berdasarkan hasil prediksi menunjukkan bahwa kontaminan BBM akan hilang dari sistem akuifer (mencapai kadar 0 mg/L) dalam kurun 11 tahun untuk area berjarak 50 m dari sumber kebocoran hingga 210 tahun untuk area berjarak 400 m dari sumber kebocoran.

Kata kunci : Pencemaran airtanah, bahan bakar minyak, Kelurahan Jlagran, Kota Yogyakarta

## ABSTRACT

*This research aimed to know the degree of hydrocarbon contamination on groundwater system at Jlagran District, Yogyakarta City, to determine the distribution of hydrocarbon contamination on groundwater at Jlagran area, and to predict when hydrocarbon contamination on groundwater system at Jlagran area reach 0 mg/L. This research includes several processes such as measure the height of groundwater surface so that the groundwater surface contour map could be produce and also observation at study area so that geological map and geomorphological map could be drawn. Field activity also followed by withdrawal groundwater sample and sediment sample at the edge of river valley. After that, the groundwater samples were tested at laboratory to prove the degree of oil and grease, while the sediment samples were tested at laboratory to know it's permeability and porosity values. All of the data were processed to produce a map of hydrocarbon contamination plume and to predict the contaminant concentration. Based on laboratory test result stated that the groundwater at study area still contaminated by hydrocarbon with variation values ranging between 1 mg/L to 55 mg/L. Based on hydrocarbon contamination plume map shows that the hydrocarbon contamination have the same movement direction with the groundwater movement direction that is SE-NW. Based on the prediction done on this research, concluded that hydrocarbon contamination will disappear from the aquifer system (reach 0 mg/L) during 11 years for*



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YOGYAKARTA**

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*areas between 50 m from the source until 210 years for areas between 400 m from the source.*

*Keywords : Groundwater contamination, hydrocarbon fuel, Jlagran District, Yogyakarta City*