

# **GROUNDWATER POLLUTION CAUSED BY CATTLE BREEDING IN PATALAN VILLAGE DISTRICT JETIS BANTUL SPECIAL REGION OF YOGYAKARTA**

## ***ABSTRACT***

Groundwater is the most exploited clean water source all over the world, because it is the best alternative when surface water were insufficient or affordable for daily water needs. The cattle breeding around Patalan village, causing groundwater pollution vulnerability which is used as daily drinking water. Causing it's need to do research which aims to know the groundwater quality based on Minister of Health Regulation (Peraturan Menteri Kesehatan) No. 492/MENKES/PER/IV/2010, as the quality standard requirements for drinking water and to know the groundwater pollutant spreading scheme in the research area.

The used methods in this research are observation methods, purposive sampling, laboratory and data analysis methods. Observation method in this research used to obtaining the primary data, such as groundwater level in the wells dug, the location coordinates and the elevation of the groundwater level depth measurement as well using GPS, and also another data. After analyzing groundwater level depth, the groundwater directional map can be made (flownets map). Based on this groundwater directional map, the locations of samples can be determined (purposive sampling methods). These samples then tests in the laboratory to obtain the contents of it physical, chemicals, and also biology parameters. With data analyzing method, informations can be obtained about the changes of each tested parameters.

Based on laboratory tests, groundwater condition in the research area, are not exceeding quality standard requirements for drinking water of Minister of Health Regulation (Peraturan Menteri Kesehatan) No. 492/MENKES/PER/IV/2010, if it's parameters evaluated for TDS (210 – 272 mg/L, standard requirements : 500 mg/L) ; pH (6,6 – 7,0, standard requirements : 6,5 – 8,5) ; NH<sub>3</sub>-N (<0,0003 - 0,0027 mg/L, standard requirements : 1,5 mg/L) ; NO<sub>3</sub>-N (0,79 – 12,53 mg/L, standard requirements : 50 mg/L). But not so for E.coli bacterial contents (24/100 - 1600/100 mL, standard requirements : 0/100 mL) which is exceeding quality standard requirements for drinking water of Minister of Health Regulation (Peraturan Menteri Kesehatan) No. 492/MENKES/PER/IV/2010. By analyzing the research data's, informations obtained for groundwater pollutant's spreading scheme by cattle breeding in research location are following the groundwater directional flow from North to South and Southwest from the cattle breeding location.

**Keywords: Groundwater, Groundwater Contamination, Cattle**