

# **STUDY ON THE EFFECT OF COMMUNAL WWTP (WASTEWATER TREATMENT PLANT) GROUNDWATER QUALITY IN WARUNGBOTO VILLAGE WARUNGBOTO UMBULHARJO YOGYAKARTA**

## **ABSTRACT**

Groundwater is a source of water that has an important role in maintaining the balance and the availability of water for household (domestic) or for the industry. Along with the increase of population and the increasing demand for water led to declining groundwater quality. Groundwater quality degradation can be caused by several things. Septic tank seepage, seepage flow of surface water that has been contaminated, landfill, or spills of contaminants. In addition other factors that may affect the water quality of groundwater is the slope face, the climate, rock type, soil type, vegetation, time and activities performed by humans.

Warungboto is one of the villages in the Warungboto that have a high population density. More and more people in urban areas, the greater the problems faced by the government. One issue that arises is the issue of sanitation. Sanitation is a very complex problem in densely populated residential areas.

The method used is the method of survey and laboratory analysis methods. The parameters used are content analysis of temperature, TDS, warrants, taste, odor, pH, BOD, COD, ammonia (NH<sub>3</sub>), chromium (Cr) and Escherichia coli (E. coli). Were then analyzed by Yogyakarta Governor Regulation No. 20 Year 2008 on Standards Quality Water in Yogyakarta Special Province. Sampling was conducted on groundwater, water inlet outlet communal WWTP and river water as a communal WWTP effluent outlet.

The conclusion that the groundwater and the river beyond standards quality BOD equal to 9 mg/L of standard quality 2 mg/L and COD of 20 mg/L of standards quality 10 mg/L which can be affected by the influx of organic material into the groundwater and water bodies are difficult to unravel. For communal WWTP outlet exceeds quality standards are parameters BOD of 12 mg/L of standards quality 6 mg/L, and E. coli bacteria of  $9.8 \times 10^4$  MPN/100mL of standards quality  $1 \times 10^4$  MPN/100mL for waste management together with management anaerobic. Where there is waste detergent that makes the bacteria decomposing dead. While other parameters do not require bacterial decomposers. But with the deposition process by adding lime to the goal of accelerating the deposition. Thus, management of unprocessed optimally.

*Keywords: Groundwater Quality, Domestic Waste, Communal WWTP*