THE GROUNDWATER TREATMENT TECHNIQUES DUE TO INTRUSION OF SEAWATER AS A COMMUNITY WATER RESOURCES AT KEDUNG DISTRICT, JEPARA REGENCY, CENTRAL OF JAVA PROVINCE

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ABSTRACT

Kedung district at Jepara regency is one district that experience groundwater quality degradation that marked by the groundwater has a brackish taste. The brackish groundwater is generally still used by people in their daily needs, but not for consumption. Brackish groundwater caused by seawater intrusion due to the location of the district in the coastal areas. The research aims to find out the causes of brackish groundwater, brackish groundwater quality, and the right treatment will do at research sites. Especially in Kedungmalang Village, Karangaji Village, and Tedunan Village.

This study uses several methods, such as survey methods, interview methods, and laboratory methods. Laboratory methods are used to find out the results of the test design. Sampling of groundwater and river water using purposive sampling method based on the closest distance to the beach. The method is done by physical observation test of color, odor, taste, and TDS. While groundwater testing in the form of DHL, Salinity, pH, and Koli Tinja Bacteria.

The cause of brackish groundwater in the study area is the presence of sea water intrusion through rivers and the occurrence of abrasion.The results of laboratory tests show that groundwater proved to be brackish with high concentrations of TDS, DHL, Salinity, Hardness, and High Foliage Bacteria exceeding the quality standard in accordance with Decree of the Minister of Health of the Republic of Indonesia Number *492 / MENKES / Per / IX / 2010* as drinking water quality standard .Water treatment with this technique has been shown to decrease the level of acidity in water, with the effectiveness of TDS with an average of 72.87% for residence time of 120 minutes, 50 cm zeolite height and for DHL effectiveness of 70.38%. While for the height of zeolite 70 cm can be produced effectiveness of TDS with average 77,41% and DHL average equal to 71,75. The higher the height of zeolite in the processing column the better the quality of the water produced.

Keywords: Brackish Groundwater, Groundwater Quality, Groundwater Filtration, Adsorption Zeolites