

Application of Ozone Plasma Technology for Treating Peat Water into Drinking Water

Firdaus Ali*, Dwi Lintang Lestari and Marsya Dyasthi Putri

*Corresponding email: firdausali@ymail.com

Abstract

The need of clean water will continue to increase along with the increase of population. However, not all regions in Indonesia have a potential for raw water sources that meet standards to be treated into clean/drinking water, so an alternative water treatment needs to be developed. Peat water is one of water sources that is often found in lowland swamps or in tidal conditions which is much located in Sumatera and Kalimantan. Peat water requires an appropriate technology to be able to treat water into clean water. Peat water treatment using ozone plasma technology is one of technological breakthroughs that can treat peat water into clean water effectively and economically. Peat water used for this study is taken from Sintang, West Kalimantan. Tested Parameters of water quality will be compared with the Regulation of Minister of Health No. 416 Year of 1990. In this study, four parameters in raw water are carried out to be tested after treating with variations in length of contact time of 10, 12, and 15 minutes. Water quality parameters to be tested are turbidity, color, coliform, and permanganate with final quality of treating for each parameter are 5.8 NTU, 1.1 Pt-Co, below 2 MPN/100 mL, and 11.8 mg/L. There is significant decrease in a value of four parameters, which three parameters meeting the maximum limit. Permanganate as parameter that exceed the maximum limit, have high probability of meeting this limit if contact time of treating peat water with ozone plasma is extended.