INTISARI

Kerentanan airtanah merupakan suatu kondisi yang menggambarkan mudahnya zat pencemar dalam mempengaruhi airtanah. beberapa faktor yang mempengaruhi terjadinya kerentanan airtanah bebas diantaranya kedalaman muka airtanah, jenis akuifer dan jenis litologi diatas akuifer. Kelas mutu air merupakan peringkat kualitas air yang di nilai masih layak untuk dimanfaatkan berdasarkan hasil uji parameter kualitas air.

Penelitian ini bertujuan untuk 1). Menganalisis persebaran dan tingkat kerentanan airtanah bebas terhadap pencemaran dengan menggunakan metode GOD di Kota Mataram.2). Menganalisis kualitas airtanah bebas menurut parameter fisika, kimia dan biologi di Kota Mataram.3). Menganalisis kelas mutu airtanah bebas di Kota Mataram. Metode yang digunakan dalam penelitian ini adalah metode GOD untuk menghitung indeks kerentanan airtanah terhadap pencemaran, uji laboratorium untuk mengetahui kualitas airtanah bebas, dan perhitung dengan menggunakan metode indeks pencemaran untuk mengetahui kelas mutu aitanah bebas.

Hasil penelitian menunjukan bahwa airtanah bebas di Kota Mataram memiliki potensi kerentanan sedang terhadap pencemaran, berdasarkan hasil uji laboratorium sampel airtanah, terdapat beberapa sampel yang telah melampaui batas maksimum seperti 1). .Daya Hantar Listrik terdapat pada sampel 1, sampel 3, sampel 4, sampel 14 dan sampel 16 yang terletak di Kelurahan Ampenan Utara, Keluran Dayan Peken, dan kelurahan Ampenan Tengah. 2). *Total dissolved solid* (TDS) yang terdapat pada hamper seluruh sampel, kecuali sampel 13.3). Bakteri *Colliform* yang terdapat pada sampel 3, sampel 4, sampel 9, sampel 15, sampel 24 dan sampel 33. Kelas mutu air di Kota Mataram telah tercemar dengan kategori 1). Cemar ringan yang terdapat pada Sampel 4, Sampel 8, Sampel 17, Sampel 21, Sampel 26, Sampel 28, Sampel 31, Sampel 33, Sampel 40 dan Sampel 44. 2). Cemar berat yang terdapat pada sampel 3, sampel 9, sampel 15 dan sampel 24. 3). Memenuhi baku mutu terdapat pada Sampel 5, Sampel 13, Sampel 50 dan Sampel 57.

Kata Kunci : Kerentanan airtanah bebas, Metode GOD, Kualitas airtanah bebas, Kelas mutu air

ABSTRACT

Groundwater vulnerability is a condition that portrays the ease of pollutants in affecting groundwater. Several factors that influence the vulnerability of unconfined groundwater include groundwater's depth, aquifer type and litho logy type above aquifers. Water quality class is a water quality rating based on the results of the parameter test of water quality to determine whether the water is still worth to consume or not.

This study aims to 1). Analyze the distribution and vulnerability of unconfined groundwater to pollution by employing the GOD method in the city of Mataram. 2). Examine unconfined groundwater quality according to physical, chemical and biological parameters in Mataram City. 3). Investigate unconfined groundwater quality classes in the city of Mataram. The method employed in this study is the GOD method to calculate the groundwater vulnerability indices for pollution, laboratory tests to determine unconfined groundwater quality, and pollution indices methods to verify the grade of unconfined water quality.

The results showed that unconfined groundwater in the city of Mataram have the potential for moderate vulnerability to pollution, based on the results of laboratory tests of groundwater samples. Several samples have exceeded the maximum limit such as 1). Electricity Carrying Power were discovered in sample 1, sample 3, sample 4, sample 14 and sample 16 which are located in North Ampenan Village, Kelen Dayan Peken, and Kelurahan Ampenan Tengah. 2). Total dissolved solid (TDS) which were uncovered in almost every sample, except in sample 13.3). Colliform bacteria were located in sample 3, sample 4, sample 9, sample 15, sample 24 and sample 33. Water quality classes in the city of Mataram were contaminated and categorized into three types, namely 1). Mildly polluted, which found in Sample 4, Sample 8, Sample 17, Sample 21, Sample 26, Sample 28, Sample 31, Sample 33, Sample 40 and Sample 44, 2). Severely polluted, which discovered in sample 3, sample 9, sample 15 and sample 24. 3). Meet the quality standards, which were located in Samples 5, Samples 13, Samples 50 and Samples 57.

Keywords: Unconfined groundwater vulnerability, GOD method, unconfined groundwater quality, water quality class