SARI

Cekungan air tanah merupakan suatu wilayah yang dibatasi oleh batas hidrogeologis, tempat semua kejadian hidrogeologis seperti proses pengimbuhan, pengaliran, dan pelepasan airtanah berlangsung. Daerah penelitan berada di Cekungan Air Tanah Wates yang terletak di bagian selatan dari Kabupaten Kulon Progo, Provinsi Daerah Istimewa Yogyakarta. Di daerah ini dijumpai adanya anomali air tanah payau yang ditunjukan dengan nilai jumlah garam terlarut sebesar 1179,5 mg/L. Tujuan dari penelitian ini yaitu mengetahui kondisi geologi dan hidrogeologi, menentukan tipe kimia air tanah serta mengetahui sumber air tanah payau yang dijumpai di daerah penelitian. Air tanah payau adalah percampuran antara air tawar dengan air payau. Metode penelitian yang digunakan berupa pengamatan kondisi geologi permukaan, kondisi hidrogeologi serta analisis geokimia air tanah. Pengamatan kondisi hidrogeologi meliputi pengukuran kedalaman muka air tanah dan pengukuran sifat fisik dan kimia air tanah. Analisis geokimia air tanah berupa analisis kandungan dan besarnya konsentrasi dari ion-ion mayor dan ion Br^- yang digunakan untuk menentukan tipe kimia air tanah daerah penelitian dan untuk mengevaluasi sumber air payau yang dijumpai di daerah penelitian. Daerah penelitian tersusun oleh endapan-endapan kuarter dengan morfologi yang cenderung datar. Tipe kimia air tanah di daerah penelitian di dominasi oleh air tanah yang memiliki kandungan bikarbonat, namun juga dijumpai kandungan klorida yang dominan pada sumur 66. Sumber air tanah payau di daerah penelitian tidak berasal dari intrusi air laut, namun berasal dari *old saline ground water* berdasarkan pada model konseptual penampang akuifer daerah penelitian dari MacDonald & Partners (1989).

Kata Kunci : Air Tanah, Air Tanah Payau, Old Saline Groundwater, Geokimia.

ABSTRACT

Ground water basin is an area bounded by the limits hydrogeological, where all hydrogeological events such recharge, drainage, and ground water discharge processes takes place. This research is in the area of Wates Ground Water Basin is situated in the southern part of Kulon Progo, Yogyakarta Special Region. In this area encountered brackish ground water anomaly indicated by value of total dissolved solid at 1179,5 mg/L. The purpose of this research is to know the geological and hydrogeological conditions, determine the type of ground water chemistry, and to know the source of brackish ground water is encountered in the study area. Brackish ground water is a mixture of fresh water to brackish water. The research method consists of observing the condition of surface geological, hydrogeological and geochemical analyzes the condition of ground water. Observations hydrogeologic conditions include ground water level depth measurement and the measurement of physical and chemical properties of ground water. Geochemical analysis of ground water consists of content concentrations analysis of major ions and Br- used to determine the type of ground water chemistry and to evaluate the source of brackish water encountered in the study area. The research area is composed by sediments quarter with morphologies that tends flat. Types of ground water chemistry in the study area dominated by ground water has a high bicarbonate content, but also found a high chloride content in well-66. Source brackish ground water in the study area are not derived from the intrusion of sea water, however, comes from the old saline ground water is based on a conceptual model of the aquifer cross-section of the research areas of MacDonald & Partners (1989).

Keywords: Ground Water, Brackish Ground Water, Old Saline Groundwater, Geochemistry.