

INTISARI

Sapta Tirta Pablengan merupakan komplek mata air yang terdiri dari tujuh mata air yaitu mata air Bleng, mata air Urus-urus, mata air Soda, mata air Kesakten, mata air Hangat, mata air Hidup, dan mata air Mati. Mata air di komplek tersebut dipercaya memiliki rasa yang berbeda-beda saat dikonsumsi. Daerah penelitian berada pada komplek mata air Sapta Tirta Pablengan dan daerah sekitar komplek mata air tersebut yaitu Desa Pablengan, Kecamatan Matesih, Kabupaten Karanganyar, Provinsi Jawa Tengah. Tujuan penelitian ini untuk menentukan geologi daerah penelitian, sifat fisika dan kimia air tanah, dan konektivitas akuifer. Dalam penelitian ini, dilakukan pengamatan geologi pada daerah penelitian, pengukuran sifat fisika dan kimia mata air, dan pengambilan sampel mata air. Sampel air kemudian dianalisis menggunakan alat *Ion Chromatography* (IC), titrasi, ICP, dan UV-Vis *spectrophotometer* untuk ion mayor serta portabel spektrofotometri untuk logam (Fe dan Mn). Daerah penelitian memiliki tiga satuan geomorfologi yaitu perbukitan vulkanik berlereng curam, perbukitan vulkanik berlereng sedang, dan dataran vulkanik dengan litologi yang tersusun atas satuan tuf, breksi vulkanik, dan endapan lahar. Kelurusan banyak dijumpai pada daerah penelitian dengan arah dominan barat laut- tenggara dan arah minor yaitu barat daya-timur laut. Komplek mata air Sapta Tirta Pablengan memiliki temperatur air yang hangat serta kandungan klorida yang tinggi akibat dari aktivitas vulkanisme Gunung Lawu. Konsentrasi klorida pada komplek mata air Sapta Tirta Pablengan berbeda-beda di setiap mata airnya. Mata air yang berada di komplek Sapta Tirta Pablengan berasal dari sumber yang sama yaitu *outflow* dari fluida panas bumi yang mengalir ke atas melalui rekahan pada batuan dan kemudian mengalami pencampuran dengan air tanah dangkal.

Kata kunci: mata air, konektivitas akuifer, pencampuran air tanah, Sapta Tirta Pablengan

ABSTRACT

Sapta Tirta Pablengan is a spring site that has seven springs, those are spring of Bleng, spring of Urus-urus, spring of Soda, spring of Kesakten, spring of Hangat, spring of Hidup, and spring of Mati. Springs in that complex allegedly have different taste in every spring. The study area is located in the Sapta Tirta Pablengan spring site and the surrounding area of Pablengan Village, Matesih District, Karanganyar Regency, Central Java Province. This study aims to determine the geology of study area, groundwater physical and chemical characteristics, and aquifer connectivity. In this study, geological mapping was conducted in study area. groundwater physical and chemical characteristics examination and sampling was conducted in Sapta Tirta Pablengan spring site. Water samples eventually were analyzed by Ion Chromatography (IC), titration method, ICP, dan UV-Vis spectrophotometer for major ions and portable spectrophotometer for metal (Fe and Mn). The study area has three geomorphology units: a volcanic mountain with a steep slope, a volcanic mountain with a moderate slope, and a lahar plain. The lithology of study area consists of tuff, volcanic breccia, and lahar deposits. Lineament appears in the study area and has northwest - southeast as a major pattern and also southwest-northeast as a minor pattern. Sapta Tirta Pablengan spring site has warm water temperature and an abundance of chloride because of Lawu Volcanism. Sapta Tirta Pablengan spring site have different chloride concentrations in each spring. Springs in the Sapta Tirta Pablengan site originate from the same source, which is the outflow zone of geothermal fluid. It goes up through fractures in rock and eventually mixes with shallow groundwater.

Keyword: spring, aquifer connectivity, groundwater mixing, Sapta Tirta Pablengan