

INTISARI

Dalam pembangunan Bendungan Leuwikeris perlu dilakukan pengalihan air Sungai Citanduy menggunakan terowongan pengelak sebelum tubuh bendungan dibangun. Untuk pembuatan terowongan pengelak tersebut diperlukan penyelidikan geologi teknik permukaan dan bawah permukaan untuk mengetahui karakteristik geologi teknik lokasi konstruksi terowongan sehingga kestabilan terowongan juga metode penggalian dan sistem penyangga yang digunakan pada konstruksi terowongan dilakukan dengan tepat. Aspek yang digunakan sebagai data meliputi aspek batuan dan tanah, aspek geomorfologi, aspek struktur geologi, dan aspek hidrogeologi. Metode penelitian dilakukan dengan pemetaan geologi teknik skala 1:12.500, penentuan kualitas massa batuan pada batuan inti dan muka terowongan.

Karakteristik geologi teknik daerah penelitian terdiri atas 6 satuan yaitu satuan breksi tuff segar, satuan breksi tuff lapuk rendah, satuan breksi tuff lapuk sedang, satuan breksi andesit lapuk sedang, satuan breksi andesit lapuk tinggi, dan tanah residual. Lokasi terowongan terletak pada satuan breksi tuff lapuk rendah dengan sisipan batupasir dan batulempung. Kualitas massa batuan bawah permukaan RMR terdiri dari kelas *poor* (IV) dan *fair* (III). Sistem penyangga yang dibutuhkan adalah berupa *shotcrete*, *rockbolts*, *wire mesh*, *steel sets*.

Kata kunci: Terowongan pengelak, karakteristik geologi teknik, sistem penyangga terowongan, *Rock Mass Rating*.

ABSTRACT

In the construction of the Leuwikeris Dam it is necessary to divert the stream flow of the Citanduy River using a diversion tunnels before the dam body is built. For making this diversion tunnel, surface and subsurface engineering geology investigations are needed to determine the engineering geology characteristics of the tunnel construction site so that the stability of the tunnel is determined, also the excavation methods and the support systems used in tunnel construction is carried out precisely. The engineering geology characterization is based on rock and soil aspects, geomorphological aspects, structural geology aspects, and hydrogeology aspects. The research method was carried out by engineering geological mapping of scale 1: 12,500, determining the quality of rock mass in the core drilling and the facemapping of the tunnel.

The engineering geology characteristics of the study area consisted of 6 units namely fresh breccia tuff unit, slightly weathered tuff breccia, moderately weathered tuff breccia unit, moderatley weathered andesite breccia unit, highly weathered andesite breccia unit, and residual soil. The location of the tunnel is located in a slightly weathered tuff breccia unit intercalated with sandstone and claystone. The rock mass quality based on RMR of the subsurface rock mass consists of the poor (IV) and fair (III) classes. The support system needed is in the form of shotcrete, rockbolts, wire mesh, steel sets.

Keywords: *diversion tunnel, engineering geology characteristics, tunnel support system, Rock Mass Rating.*