

INTISARI

Bendungan Bodri berlokasi di Kabupaten Kendal, Provinsi Jawa Tengah dan masuk pada wilayah kerja Balai Besar Wilayah Sungai Pemali Juana, Direktorat Jenderal Sumber Daya Air, Kementerian Pekerjaan Umum dan Perumahan Rakyat. Pembangunan bendungan masih dalam tahap *feasibility study* sehingga perlu dilakukan penyelidikan geologi teknik untuk mengetahui kondisi geologi teknik lokasi bendungan. Metode penelitian meliputi pemetaan geologi teknik dengan skala 1:10.000, evaluasi sampel batuan bawah permukaan, perhitungan kualitas massa batuan berdasarkan *Rock Mass Rating* dan *Geological Strength Index*, analisis petrografi, pengujian sifat indeks dan keteknikan batuan dan tanah, dan penentuan metode ekskavasi massa batuan berdasarkan grafik *EXCASS System*. Geomorfologi daerah penelitian dapat dibagi menjadi empat satuan yakni satuan dataran alluvial berlereng sangat landai, satuan perbukitan denudasional berlereng landai, satuan perbukitan denudasional berlereng sedang, dan satuan perbukitan denudasional berlereng curam. Aspek batuan dan terbagi menjadi enam satuan kualitas massa batuan yakni perselingan batupasir tuffan dan breksi andesit kualitas baik, breksi andesit kualitas baik, perselingan batupasir tuffan & breksi andesit kualitas sedang, breksi andesit kualitas sedang, perselingan batupasir tuffan & breksi andesit kualitas buruk, dan breksi andesit kualitas buruk. Aspek struktur geologi daerah penelitian terdapat kelurusan NW-SE dan NE-SW, terdapat sesar diperkirakan berarah NW - SE dan ditemukan kekar gerus dengan orientasi NW-SE dan NE-SW. Metode ekskavasi massa batuan untuk pembangunan Bendungan Bodri Alternatif 2 berupa *easy ripper* hingga *hammer*. Pada penggalian pondasi bendungan sisi kiri (bukit tumpuan kiri) direkomendasikan menggunakan metode *easy ripper – hammer*. Pada lembah sungai direkomendasikan menggunakan metode *easy ripper – hammer*. Pada pondasi bendungan sisi kanan (bukit tumpuan kanan) direkomendasikan menggunakan metode *easy ripper – hammer*.

Kata Kunci: Bendungan Bodri, karakteristik geologi teknik, kualitas massa batuan, RMR, GSI, metode ekskavasi massa batuan.

ABSTRACT

The Bodri Dam is located in Kendal Regency, Central Java, and under the authority of the River Basin Organization for Pemali Juana, Directorate General of Water Resources, Ministry of Public Works and Housing. The dam construction is currently in the feasibility study step, necessitating a geotechnical investigation to assess the site's geological conditions. The research methods include geotechnical mapping with 1:10,000 scale, evaluation of subsurface rock samples, calculation of rock mass quality based on the Rock Mass Rating (RMR) and Geological Strength Index (GSI), petrographic analysis, testing of rock and soil index and engineering properties, and determination of rock mass excavation methods using the EXCASS System chart. The dam site consists of six geomorphological units: alluvial plain unit with very gentle slopes, denudational hill unit with gentle slopes, denudational hill unit with moderate slopes, and denudational hill unit with steep slopes. The rock aspect is divided into six rock mass quality units: interbedded tuffaceous sandstone and andesite breccia with good quality, andesite breccia with good quality, interbedded tuffaceous sandstone and andesite breccia with medium quality, andesite breccia with medium quality, interbedded tuffaceous sandstone and andesite breccia with poor quality, and andesite breccia with poor quality. The geological structure consists of NW-SE and NE-SW lineaments pattern, estimated fault with NW-SE orientation, and shear joints with NW-SE and NE-SW orientation. The rock mass excavation methods for the construction of the Bodri Dam range from easy ripper to hammer techniques. For excavating the dam foundation on the left abutment (left hill), the easy ripper–hammer method is recommended. In the river valley, the easy ripper–hammer method is recommended. For the dam foundation on the right abutment (right hill), the easy ripper–hammer method is applied.

Keywords: *Bodri Dam, engineering geology characteristics, rock mass quality, RMR, GSI, rock mass excavation method.*