

SARI
GEOLOGI DAN STUDI KARAKTERISTIK BATULEMPUNG
SEBAGAI BAHAN BAKU PEMBUATAN SEMEN PADA KUARI NAMBO,
DAERAH NAMBO, KECAMATAN KLAPANUNGGAL, KABUPATEN
BOGOR, JAWA BARAT

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Melalui kegiatan pemetaan geologi dapat diperoleh persebaran batuan pada suatu daerah yang mungkin dapat berpotensi sebagai bahan galian yang memiliki nilai ekonomis. Penelitian ini dilakukan pada area shale quarry PT. Solusi Bangun Indonesia Daerah Nambo, Kecamatan Klapanunggal, Kabupaten Bogor. Kualitas batulempung tentunya dikontrol oleh tatanan geologi pada daerah penelitian. Dilakukan pemetaan permukaan untuk menentukan sebaran kualitas batulempung, selain itu dilakukan analisis laboratorium antara lain analisis petrografi, analisis mikropaleontologi, analisis *X – Ray Fluorescence* (XRF) dan analisis *Scanning Electron Microscope* (SEM). Berdasarkan hasil penelitian maka geomorfologi daerah penelitian termasuk Pegunungan Lipatan. Tatanan stratigrafi tersusun atas batuan sedimen berupa batulempung, batupasir, serta batugamping yang dikontrol oleh struktur geologi berupa lipatan antiklin dan sesar dekstral. Kualitas batuan berdasarkan analisis XRF dengan parameter nilai silika (SiO_2) terbagi menjadi tiga *grade* yaitu *low grade*, *medium grade*, dan *high grade*. Hasil analisis SEM menunjukkan mineral lempung berupa *smectite-illite* dan *kaolinite*. Kualitas batuan daerah penelitian dikontrol oleh dua faktor yaitu faktor primer berupa material penyusun batuan, arus sebagai media pembawa material sedimen, dan sumber silika daerah penelitian. Kemudian faktor sekunder yang berupa struktur geologi rekahan, tingkat pelapukan yang berbeda (*differential weathering*) serta proses *leaching*.

Kata Kunci : Bahan Galian, Shale Quarry, Kualitas Batulempung, XRF, SEM

ABSTRACT
***GEOLOGY AND THE STUDY OF CLAYSTONE CHARACTERISTICS AS
RAW MATERIALS FOR CEMENT IN THE NAMBO QUARRY, REGION
OF NAMBO, KLAPANUNGGAL, BOGOR, WEST JAVA***

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Through geological mapping activities, the distribution of rocks in an area can be obtained which may have potential as minerals with economic value. This research was conducted in the shale quarry of PT. Solusi Bangun Indonesia, Nambo Region, Klapanunggal District, Bogor Regency. The geological setting in the research area of course controls the quality of the mudstone. Surface mapping was carried out to determine the distribution of mudstone quality, in addition, laboratory analysis was carried out including petrographic analysis, micropaleontological analysis, X-Ray Fluorescence analysis (XRF), and Scanning Electron Microscope analysis (SEM). Based on the research results, the geomorphology of the research area includes the fold mount. The stratigraphic order is composed of sedimentary rocks in mudstone, sandstone, and limestone controlled by geological structures in the form of folded anticlines and dextral faults. Rock quality based on XRF analysis with the silica value parameter (SiO₂) is divided into three grades: low, medium, and high. SEM analysis results show that the clay minerals are smectite-illite and kaolinite. The quality of the rocks in the research area is controlled by two factors: the primary factor in the form of the material that makes up the rock, currents as a medium for carrying sedimentary material, and the silica source in the research area. Then the secondary factor is in the form of the geological structure of fractures, different levels of weathering (differential weathering), and the leaching process.

Keywords: Minerals, Shale Quarry, Mudstone Quality, XRF, SEM