

SARI

Daerah penelitian terletak di Daerah Alue Buloh dan sekitarnya, Kecamatan Seunagan, Kabupaten Nagan Raya, Provinsi Aceh. Lokasi penelitiannya berada di zona UTM 47 N, dengan koordinat X1Y1 = 196485, 468595 dan X2Y2 = 200985, 473095. Tujuan dari penelitian ini untuk mengetahui keadaan geologi daerah penelitian, pengaruh kondisi geologi terhadap perhitungan sumberdaya batubara dan menghitung sumberdaya batubara *seam* B, C, dan D. Pola pengaliran yang berkembang di daerah penelitian adalah pola pengaliran subdendritik. Terdapat empat (4) satuan bentuklahan di daerah penelitian yaitu perbukitan homoklin (S1), dataran denudasional (D1), tubuh sungai (F1), dan dataran limpah banjir (F2). Formasi yang terdapat di daerah penelitian adalah Formasi Tutut dengan dua satuan batuan tidak resmi yaitu Satuan batulempung Tutut dan Satuan batupasir Tutut. Satuan batulempung Tutut dan Satuan batupasir Tutut terendapkan di lingkungan *transitional lower delta plain*. Struktur geologi yang berkembang adalah sesat turun dan *cleat* yang memiliki tegasan utama berarah barat daya - timur laut. Berdasarkan aspek tektonik, sedimentasi, dan variasi kualitas (SNI 5015:2019). Kondisi geologi daerah penelitian termasuk ke dalam kategori kondisi moderat. Terdapat 3 *seam* batubara di daerah penelitian. ketebalan rata - rata ketiga *seam* tersebut adalah *seam* B 1,3 m, *seam* C 2,6 m, dan *seam* D 1,7 m. metode yang digunakan untuk menghitung sumberdaya batubara adalah metode *circular* (USGS, 1983). Hasil perhitungan sumberdaya batubara adalah sebagai berikut: sumberdaya terukur 1.910.767,927 ton, tertunjuk, 6.234.646,954 ton, dan sumberdaya tereka 16.312.552,729 ton. Hasil perhitungan *overburden* adalah sebagai berikut: *overburden* sumberdaya terukur 16.366.503,611 BCM (*Back Cubic Meter*), tertunjuk 108.685.900,791 BCM, tereka 550.779.618,926 BCM.

Kata Kunci: Batubara, Geologi, Formasi Tutut, Metode *Circular* Sumberdaya

ABSTRACT

The study area is located in Alue Buloh and its surroundings, Seunagan District, Nagan Raya Regency, Aceh Province. The research location is situated in UTM zone 47 N, with coordinates X1Y1 = 196485, 468595 and X2Y2 = 200985, 473095. The objective of this study is to understand the geological conditions of the study area, analyze the influence of geological conditions on coal resource calculation, and calculate the coal resources in Seam B, C, and D. The developed drainage pattern in the study area is subdendritic. There are four landform units in the study area: homocline hills (S1), denudational plain (D1), river body (F1), and floodplain (F2). The formation found in the study area is the Tutut Formation, consisting of two unofficial rock units: the Tutut mudstone Unit and the Tutut sandstone Unit. These two rock units were deposited in the transitional lower delta plain environment. The geological structures in the study area include normal faults and cleats, with the principal stress direction oriented southwest to southeast. Based on tectonic aspects, sedimentation, and quality variations (SNI 5015, 2019), the geological conditions of the study area are categorized as moderate. There are three coal seams in the study area, with the average thickness of each seam as follows: seam B 1.3 m, seam C 2.6 m, and seam D 1.7 m. The method used for coal resource calculation is the circular method (USGS, 1983). The results of the coal resource calculation are as follows: measured resources 1,910,767.927 tons, indicated resources 6,234,646.954 tons, and inferred resources 16,312,552.729 tons. The overburden calculation results are as follows: measured overburden 16.366.503,611 BCM (Bank Cubic Meter), indicated overburden 108.685.900,791 BCM, and inferred overburden 550.779.618,926 BCM.

Keyword: Coal, Geology, Resource, Tutut Formation, USGS Circular method