

ABSTRAK

GEOLOGI DAN KARAKTERISTIK *SILICIFIED COAL SEAM* W106 PIT WR, DAERAH TANJUNG, KABUPATEN TABALONG, KALIMANTAN SELATAN

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Daerah Tanjung, Kabupaten Tabalong, Kalimantan Selatan merupakan bagian dari Formasi Warukin yang termasuk dalam Cekungan Barito. Salah satu fenomena geologi penting di lokasi ini adalah keberadaan *silicified coal* pada seam W106, yang secara megaskopis menyerupai batubara namun memiliki densitas dan kandungan abu yang tinggi. Kondisi tersebut menyebabkan gangguan dalam proses penambangan karena dapat merusak peralatan berat seperti *bucket excavator* dan *crusher*. Untuk mengkaji karakteristik *silicified coal*, dilakukan pemetaan geologi, analisis laboratorium (petrografi, *X-Ray Diffraction*, dan analisis polen), interpretasi data, dan *wireline log*. Hasil kajian menunjukkan bahwa *silicified coal* terbentuk melalui proses permineralisasi dari sisa-sisa kayu yang kaya akan mineral silika, akibat perubahan pH secara drastis di lingkungan sedimentasi dan juga karena adanya permineralisasi oleh *roof sediment seam* W106 sehingga terbentuk *silicified coal* pada bagian *floor seam* W106. Keberadaan *silicified coal* menurunkan efisiensi proses penambangan karena *silicified coal* sulit dibedakan secara visual di lapangan karena secara visual sama seperti batubara. *Silicified coal* yang ditemukan di lapangan ini menunjukkan bahwa sudah tidak terlihat lagi struktur kayu atau material organiknyanya sehingga *silicified coal* yang ditemukan di lapangan ini dapat diketahui terbentuk ketika proses pembatubaraan terjadi atau disebut dengan *syncoalification* mineralization. Temuan ini menunjukkan pentingnya pengenalan dan pemetaan *silicified coal* secara akurat untuk mendukung efisiensi operasional.

Kata Kunci: Batubara, Cekungan Barito, Geologi, Mineral Silika, *Silicified Coal*.

ABSTRACT

GEOLOGY AND CHARACTERISTICS OF SILICIFIED COAL SEAM W106 PIT WR, TANJUNG REGION, TABALONG REGENCY, SOUTH KALIMANTAN

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Tanjung area, located in Tabalong Regency, South Kalimantan, is part of the Warukin Formation within the Barito Basin. One of the significant geological phenomena in this area is the presence of silicified coal in seam W106. Although it macroscopically resembles coal, it has higher density and ash content, which poses challenges in the mining process by damaging heavy equipment such as bucket excavators and crushers. To investigate the characteristics of the silicified coal, geological mapping, laboratory analyses (petrography, X-ray Diffraction, and pollen analysis), data interpretation, and wireline log analysis were conducted. The results indicate that the silicified coal was formed through permineralization of wood remnants enriched with silica minerals. This process was driven by drastic changes in pH within the sedimentary environment and silica mineralization from the roof sediment of seam W106, which led to silicified coal development in the floor section of the same seam. The presence of silicified coal reduces mining efficiency, as it is visually indistinguishable from regular coal in the field. The silicified coal found in this study no longer shows any visible wood structure or organic material, suggesting that it formed during the coalification process, known as syncoalification mineralization. This finding highlights the importance of accurate identification and mapping of silicified coal to support operational efficiency.

Keywords: Barito Basin, Coal Quality, Geology, Silica Mineral, Silicified Coal