

ABSTRAK

UJI PROSPEK BERALASAN DALAM ESTIMASI SUMBER DAYA BATUBARA BERDASARKAN SNI 5015:2019 JONGKANG, KUTAI KARTANEGARA, KALIMANTAN TIMUR

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Uji prospek beralasan merupakan tahapan penting dalam estimasi sumber daya batubara untuk menentukan potensi keterdapat batubara yang dapat diekstraksi secara ekonomis berdasarkan aspek geologi, teknis, dan keekonomian.. Penelitian ini bertujuan untuk mengetahui kondisi geologi daerah penelitian, menentukan kompleksitas geologi terhadap radius estimasi sumber daya, mengidentifikasi parameter kelayakan estimasi berdasarkan uji prospek beralasan, serta mengetahui besaran sumber daya batubara. Metode penelitian meliputi pemetaan geologi dan geomorfologi, analisis palinologi, interpretasi struktur geologi, analisis kompleksitas geologi, kajian teknis dan keekonomian, serta estimasi sumber daya batubara. Hasil penelitian menunjukkan bahwa geomorfologi daerah penelitian terdiri atas bentuk asal struktural, fluvial, dan antropogenik. Stratigrafi daerah penelitian tersusun atas Endapan Aluvium berumur Holosen Resen, Satuan Batupasir dan Satuan Batulempung berumur tidak lebih muda dari Miosen Tengah yang diendapkan pada lingkungan *Transitional Lower Delta Plain*. Struktur geologi berupa kekar berpasangan berarah timur–barat serta lipatan sinklin dan antiklin. Berdasarkan kompleksitas geologi, daerah penelitian termasuk kategori sederhana dengan radius estimasi 750 m untuk sumber daya tereka, 500 m tertunjuk, dan 250 m terukur. Nilai *Break Even Stripping Ratio* (BESR) sebesar 31,60 Bcm/Ton menghasilkan *pit shell* optimum pada PIT_SHELL_OPT_10. Hasil estimasi menunjukkan sumber daya tereka sebesar 6,51 juta ton, tertunjuk 18,34 juta ton, dan terukur 32,60 juta ton.

Kata kunci: Batubara, *BESR*, Geologi, SNI 5015:2019, Sumber daya, Uji Prospek Beralasan

ABSTRACT

REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION IN COAL RESOURCE ESTIMATION BASED ON SNI 5015:2019 JONGKANG, KUTAI KARTANEGARA, EAST KALIMANTAN

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The Reasonable Prospects for Eventual Economic Extraction (RPEEE) is a critical step in coal resource estimation to determine the potential for economically extractable coal based on geological, technical, and economic factors. This study aims to determine the geological conditions of the study area, assess the impact of geological complexity on the resource estimate radius, identify feasibility parameters for the estimate based on the reasoned prospect test, and determine the magnitude of coal resources. Research methods included geological and geomorphological mapping, palynological analysis, geological structure interpretation, geological complexity analysis, technical and economic studies, and coal resource estimation. The results indicate that the geomorphology of the study area consists of structural, fluvial, and anthropogenic landforms. The stratigraphy of the study area consists of Holocene Recent alluvial deposits, sandstone units, and claystone units no younger than the Middle Miocene, deposited in a Transitional Lower Delta Plain environment. Geological structures include east–west-trending paired faults as well as synclinal and anticlinal folds. Based on geological complexity, the study area falls into the simple category with an estimated radius of 750 m for inferred resources, 500 m for indicated resources, and 250 m for measured resources. A Break-Even Stripping Ratio (BESR) of 31.60 Bcm/ton yields the optimal pit shell at PIT_SHELL_OPT_10. The estimates indicate inferred resources of 6.51 million tons, indicated resources of 18.34 million tons, and measured resources of 32.60 million tons.

Keyword: BESR, Coal, Geology, Resource, RPEEE, SNI 5015 :2019.