STUDI VARIABILITAS SPASIAL GAMBUT TROPIS UNTUK ANALOGI KARAKTERISTIK BATUBARA DAERAH MUARA SIRAN, KALIMANTAN TIMUR

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SARI

Gambut merupakan tanah dengan kandungan material organik lebih dari 65% dan merupakan material asal batubara. Penelitian ini bertujuan untuk mengetahui karakteristik gambut tropis dalam suksesi vertikal dan lateral untuk analogi karakteristik batubara.

Sampel gambut diambil dari 19 titik pemboran di daerah Muara Siran, Kalimantan Timur menggunakan bor tangan jenis MacCaulay. Lahan gambut Siran terbentang di antara dua sungai yaitu Sungai Kedang Kepala dan Sungai Belayan dan di dalamnya terletak Danau Siran. Sampel gambut dideskripsi menggunakan klasifikasi tekstural oleh Esterle (1990). Analisis yang dilakukan meliputi analisis petrografi untuk mengetahui ukuran partikel, tipe bagian tumbuhan, dan maseral; analisis kadar abu; serta analisis kadar sulfur dan karbon.

Ketebalan gambut berkisar dari 0,5 m hingga lebih dari 6 m. Bagian tepi endapan gambut tersusun oleh *hemic* dan *sapric*, semakin ke tengah dominan tersusun oleh *hemic*. Bagian dasar endapan tersusun oleh *sapric*, sedangkan bagian tengah-puncak tersusun dominan oleh *fibric*. Gambut umumnya tersusun oleh partikel berukuran 0,1-1 mm, dan matriks dengan kelimpahan mencapai 50%. Tipe bagian tumbuhan dominan berupa batang dan kayu. Maseral dominan berasal dari grup *huminite* dengan kelimpahan mencapai 89%, terutama *humodetrinite*. *Fibric* kaya akan jaringan kayu dan maseral *textinite*. *Hemic* umumnya tersusun atas batang dan kayu dengan maseral dominan *textinite* dan *humodetrinite*. *Sapric* memiliki kelimpahan batang, jaringan kayu, dan jaringan tak teridentifikasi yang seragam dengan maseral dominan berupa *humodetrinite*. Gambut terbentuk oleh proses terestrialisasi.

Deposit batubara yang dapat terbentuk memiliki kenampakan megaskopis cerah, masif, dapat berpita, tebal di bagian tengah di antara sedimen anorganik. Deposit batubara tipis di bagian timur dan barat, terpotong oleh sedimen sungai. Maseral dominan berasal dari grup *huminite* sebanyak 89%. Maseral grup *inertinite* cenderung melimpah di bagian tepi endapan, sedangkan maseral grup *liptinite* di bagian dasar. Batubara dapat dianalogikan dengan batubara Neogen Cekungan Kutai.

Kata kunci: gambut tropis, variabilitas spasial, Muara Siran, batubara

SPATIAL VARIABILITY OF MODERN TROPICAL PEAT DEPOSIT AS ANALOGUE FOR COAL'S CHARACTERISTICS FROM MUARA SIRAN, EAST KALIMANTAN

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ABSTRACT

Peat is soil containing more than 65% organic matter and the precursor of coal. This study aim to reveal tropical peat characteristics in vertical and lateral succession and make an analogue to coal that may be formed.

Peat samples were taken from 19 core sites in Muara Siran, East Kalimantan using MacCaulay peat sampler. Muara Siran peat deposit lies between Kedang Kepala river and Belayan river, with Siran Lake was situated in the center. Peat was described according to textural classification (Esterle, 1990). Analyses conducted including petrographic analysis to determine particle size, plant part, and maceral; ash content analysis; sulfur and carbon content analysis.

Peat thickness range from 0,5 to more than 6 m. Hemic and sapric composed the edge part of the deposit. The central part is dominated by hemic, and the basal part mostly composed of sapric. Fibric composed the central-top of the deposit. The deposit is abundant with particle of 0,1-1 mm size and matrix which proportion reaches 50%. The dominant plant part is stem and wood. Maceral composition is mostly from huminite group with proportion reaches 89%, particularly humodetrinite. Fibric is rich in wood and textinite. Hemic is mostly composed of stem and wood with textinite and humodetrinite as the most abundant macerals. Sapric has similar proportion in stem, wood, and macerated tissue. Humodetrinite is the most abundant maceral in sapric. Peat deposit was formed by terrestrialisation process.

Coal deposit that may be formed will have bright appearance, massive, may display band, and thick in the central part between inorganic sediment cut-off resulted from river sedimentation. The deposit will be thin in the east and west part. The dominant macerals derive from huminite group with proportion reaches 89%. Inertinite macerals tend to be abundant in the edge of the deposit, while liptinite may be abundant in the basal part. Coal formed of Muara Siran peat deposit tend to be similar with Neogene Kutai coal in characteristics.

Keywords: tropical peat, spatial variability, Muara Siran, coal