

GEOLOGICAL MODEL OF THE COAL DEPOSIT PECKET, MAGALLANES, CHILE.

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A study of the coal mine Pecket, located in the Peninsula of Brunswick, Magallanes (lat. 52°57'S, long 71°10'W), is presented. The stratigraphic sequence that contains the coal seams belongs to the Loreto Formation, Member Loreto assigned to the lapse Lower Oligocene-Miocene based on its faunistic and paleobotanic contents. The deposit presents a principal seam of 3 m thickness of sub-bituminous coal ($R_o=0.40$ and a calorific value of 4.000 kcal/ kg, as received), with strike N10°-20°W and inclination 8°-12°E. The new Pecket underground mine is exploited by the room and pillars method, since 1998. The seam contains intercalations of kaolinite ("Tonstein") that reach 6% of the total thickness. The mineral matter associated to coal is mainly kaolinite and smectite. The petrographic analysis of the macerals enables to classify it as clarite. The main structural pattern is formed by diaclasses and tension fractures with a preferential spatial disposition N40°-50° W and inclination 75°-85°S. The geological, geochemical, microscopic, and structural data allow to conclude that the Pecket colliery was formed in the Miocene since the accumulation of superior plant tissues (formation of vitrinite) and subordinated contributions of spores and resin (formation of liptinite), in an environment with omnipresent distal volcanism. Subsequent horizontal stress, N60°W direction, related with the opposite movement of the Pacific and South America plates, marked a distinctive character, expressed in the system of diaclasses and in the tension structures.