



Organic facies characteristics of the Pliocene coaly units, central Anatolia, Ilgin (Konya / Turkey)

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This study aims to determine organic facies characteristics of the Pliocene coaly units in the Ilgin (Konya, Central Anatolia, Turkey) area. Pliocene units (Dursunlu Formation) are composed of sandstone, siltstone, marl, mudstone and coal in the region. Lignite layers where coals are found and has a varying thickness between 100 – 300 m. Organic matter is composed predominantly of terrestrial material, with a minor contribution of algal and amorphous material. Organic matter in these units have generally low hydrogen index (HI) values and high oxygen index (OI) values, mostly characteristics type III kerogen (partly type II kerogen).

Organic matters in the samples are immature to marginally mature in terms of organic maturation. Total organic carbon (TOC) values are generally between 0.03 and 51.7 %, but reach 53.4 % in the formation. Tmax values vary between 392 and 433 °C. Organic facies type C, CD and D were identified in the investigated units. C, CD and D facies are related to marl, mudstone and coal lithofacies. These facies are characterized by average values of HI around 102 (equivalent to type II/ III kerogene), TOC around 12.2 %, and an average of S₂ of 14.6 mg HC/g of rock. The organic matter is terrestrial, partly oxidized / oxidized / highly oxidized , decomposed and reworked. Organic facies C and CD are the “gas-prone” facies but Organic facies D is nongenerative.

Keywords: Central Anatolia, Pliocene, Organic Facies, Ilgin, Coal