

THE TRIASSIC ANTHRACITE SEAMS IN CHILE

ALFARO, G. and HELLE, S. Instituto de Geología Económica Aplicada, Universidad de Concepción, Concepción, Chile

The geological framework of the three sedimentary triassic basins of Chile that contain anthracite horizons is presented. These seams, the only triassic anthracites known in Chile, are located in the region of Copiapó (La Ternera, lat. 27°12'S, long. 60°50'W), Concepción (Quilacoya, lat. 37°05'S, long. 72°50'W) and Temuco (Huimpil, lat. 38° 30'S, long 72°40'W). The clastic sedimentary sequence of La Ternera is characterised by conglomerates with imbricate clasts, massive sandstones, black shales and laminated fangolites is intercalated by a lenticular anthracitic coal seam up to 1.5 m of thickness and 200 m strike. In Quilacoya an horizon of pelites containing in their base anthracite lenses with thickness between some centimetres to 2 m, and with a maximum strike of 100 m, is found. In Huimpil a sequence of shales that includes an anthracite seam with decimetric bands of kaolin ("Tonstein") with thickness between a few centimetres and 2 m, has been described. The age of the three series has been assigned to the Triassic based on the faunistic or paleobotanic content of the sedimentites that contain the anthracite beds.

The content of S, Na, Ti, Cu, Pb, Zn, Co, Ni, Cd, Cr, V, As and Ge was analysed. In general a negative correlation among the ash and S, As, Co and Ge is observed, indicating an organic affinity, while Na, Ti, Cu, Zn, Cr and V show inorganic affinity. Pb, Ni and Cd present both tendencies. No anomalous values were observed, neither elements potentially pollutants in terms of their utilisation, with exception of vanadium in the anthracites of Quilacoya (between 101 and 203 ppm). It is concluded that the described anthracite occurrences do not show important geochemical differences with relation to the deposits of coal of Eocene and Miocene age of the central south zone of Chile.