GRAPHITE DEPOSITS OF THE NORTHERN MINAS-BAHIA PROVINCE (JACINTO-JORDÂNIA-POUSO ALEGRE REGION), EASTERN BRAZIL

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Graphite mineralizations that occur in the Jacinto-Jordânia-Pouso Alegre region (northeastern Minas Gerais-southern Bahia) are of great economic importance. As well as in other parts of the Minas-Bahia graphite province, these deposits are found in two distinct Proterozoic units of the Araçuaí Belt: a quartzite-schist unit (sillimanite-graphite schist, graphite-quartz schist, graphitic quartzite, garnet-muscovite-biotite schist and quartzite), and a kinzigitic unit (sillimanite-graphite gneiss, graphite gneiss, graphite-sillimanite-cordierite-garnet-biotite gneiss, cordierite-garnet-biotite gneiss, garnet-biotite gneiss, leptinite, calc-silicate granulite and quartzite). The structural control of the deposits is intimately related to the ductile deformation that generated the regional foliation and its stretching lineation. The kinzigitic-type mineralization is generally controlled by high-angle dip, NW-trending shear zones. In the focused region, a granitic intrusion (Filinha granite) disturbed and adjusted around it the gneissic foliation of the kinzigitic unit, imposing a local, but very important, structural control on the flake-type graphite mineralization. Concentrates from samples collected in the Jordânia-Jacinto area show predominance of medium to coarse (1-5 mm) graphite flakes, and carbon contents greater than 80%. In the Pouso Alegre-Pedro Perdido area, the quartzite-schist-type mineralization seems to be controlled by a NE-trending shear zone. Graphite concentrates, prepared from samples collected in two mines located in this quartzite-schist unit, show fine-grained (0,025 mm) graphite crystals, and carbon contents at about 40%. This fine granulation is explained by the relatively low metamorphic temperature (600º-650º C) attained in the northernmost portion of the Minas-Bahia graphite province, during the Brasiliano tectonic event.