

INTEGRATED WELL LOG PETROPHYSICAL AND GEOLOGICAL STUDIES FOR THE CHARACTERIZATION OF THE LITHOFACIES IN THE CHROMIUM DISTRICT OF CAMPO FORMOSO-BAHIA-BRAZIL

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The Campo Formoso Ultramafic Intrusive - CFU, represents an important chromite district in north-central part of the State of Bahia. It is emplaced between the quartzite sequence of the Jacobina Group and the gray TTG gneisses of the basement complex, plunging together with the quartzite sequence. It outcrops only on the west side of the Jacobina range. Diabase dykes crosscut the CFU. In 1998, CBPM surveyed the southern part of the CFU (160 km²), employing high-resolution airborne magnetic survey along N30oW lines a hundred meters spaced, in a total 1,710 km length survey. The survey aimed to evaluate the extension of the ultramafic body under its cover and to verify the presence of the chromium ore. Subsequent modeling and interpretation established a 5,000 m drilling program. The drill hole cores have been logged at each meter for density and magnetic susceptibility, in order to define their relationship to the different rocks and ore types. The geophysical signature obtained with those measurements discriminates the CFU from the quartzite, granite, granite-gneisses, and the diabase dykes. The variation of the susceptibility and density are directly related to the different lithologies of the CFU and also to different type of ore zones. The density and susceptibility data combined with the geological observation improved the analysis of the airborne magnetic survey data, yielding parameters that help the discrimination the rock types of the CFU, and their associated mineralization besides its spatial correlation.