MAGNETOMETRY APPLIED IN THE IDENTIFICATION OF POTENTIALLY MINERALIZED TARGETS IN THE CANGAS DISTRICT, POCONÉ-MT.

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ABSTRACT: Historically, the area of this study has been economically explored in the search for gold deposits since the 18th century. However, the rudimentary way of researching auriferous structures, in which the mineral resource is exploited, does not demand efficient prospective techniques in order to allocate mining fronts containing the deposits of the region. These deposits are structurally conditioned to their enclosing rocks, besides having a mineralogical association of quartz, various sulphides (pyrite and chalcopyrite) and magnetite. Therefore, the objective of this work is the use of a geophysical method, specifically the magnetic one, aiming the delimitation of zones for better lease of mining fronts and mining projects in the region. Located on the SD 21-Z-CII paper, southwest of the state of Mato Grosso, the present work was carried out in the Auriferous Province of Baixada Cuiabana, district of Cangas, municipality of Poconé-MT. The regional geological context is represented by the Tocantins Province, Paraguay Belt, being a geotectonic feature, aligned to folding axes with NE direction, which delimits the Amazonian Craton to the northwest and the Paranapanema Block to the south. Locally, the rocks are represented by subunits 3 and 5 of the Cuiabá Group, a package of polydeformed and metamorphosed metasediments in the Green Schist Facies. In the survey area, rocks belonging to subunit 3 are represented by metaconglomerates, sandstones and pelites, with subordinate intercalations of metarithmites with dropstones, quartzites and massive metadiamictites, and levels of magnetite and/or hematite. The subunit 5 is composed of sericytic phyllites and filitos, with subordinate intercalations and lenses of metarenites, metarcóseos, quartzitos and meta-microconglomerates. On the other hand, the mineralization occurs associated with the quartz veins that are discordant, verticalized to sub-verticalized, with a preferred trend to NE-SW, contained in the metassedimentary rocks of the Cuiabá Group. The execution of this work used the magnetometric method of geophysical prospection due to the ferromagnetic properties of the minerals associated with gold in the quartz veins. Twelve profiles were performed along 21 days of fieldwork, with stations equidistant from fifteen meters to each other, totalizing 28.35 linear kilometers and 1890 points of magnetic readings. Based on bibliographic researches of previous mappings in the Cangas region, the profiles are arranged in the approximate direction of N60W, that is, perpendicular to the Cangas-Poconé mineralization line of direction N40E. Based on bibliographic researches of previous mappings in the Cangas region, the profiles are arranged in the approximate direction of N60W, that is, perpendicular to the Cangas-Poconé mineralized lineament which has direction of N40E. For organization, data processing, correction and graphics generation, the *Microsoft Excel* software was used; while for data integration and plotting of magnetic anomalies the softwares *Oasis Montaj* and *ArcGIS 10.3* were used. Thus the totality of profiles and observed magnetic data produced three targets with a prospecting potential through direct methods of investigation.

KEYWORDS: CUIABÁ GROUP, AURIFEROUS PROVINCE; MAGNETOMETRIC METHOD.