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**1095 - A hybrid gossan-based and knowledge-driven mineral prospectivity model of Zn-Pb-Cu±Au mineral system of the Nova Brasilândia Belt, SW Amazonian Craton**

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The Nova Brasilândia Belt is inserted in the southwestern portion of the Amazonian Craton, within the Sunsás geochronological province. This region is characterized as an intracontinental rift with formation of proto-oceans tectonically inverted between 1200 and 950 Ma. The mineralization is composed of galena and sphalerite and can be associated with pyrrhotite and pyrite. The ore is hosted in siliceous metasediments of the Migrantinópolis Formation, and presents features that resemble a Broken Hill Type (BHT). The recent mapping surveys of the Geological Survey of Brazil, in addition to the opening of a Zn-Pb pilot plant increased the local potential for new discoveries. A prospectivity model was designed based on the lithochemical and geophysical characterization of gossans occurrences and gold-digging spots with relevant content of Pb, thought to be part of the same mineral system. Also, some prospectivity guides of a BHT mineralization were applied: the presence of gahnite, sillimanite and garnet in stream concentrates, several elements in stream sediment samples, magnetic anomalies association and the strong structural control. Additional guides used were: lithological domains, proximity of calc-silicate and amphibolite lens, proximity of mapped quartz veins and the division of the area in two different domains based on gravity maps. This last vector attempted to define the limit between the fertile inverted basin and the basement. All data was managed in a GIS interface, converted to raster datasets and reclassified to a score, based on the estimated importance of that vector for the mineralization. As a last step, the vectors were integrated into a weighted average, based on the reliability and sample density of each one. Therefore, the final map classifies the region in five classes, with the classes of highest prospectivity corresponding a 3,79% of the searched area and covering 64% of the mineral occurrences, besides indicating new exploration targets.