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# APPLICATION OF AIRBORNE GAMMA-RAY SPECTROMETRIC AND MAGNETIC DATA IN THE ASSESSMENT OF POTENTIAL CARBONATE RESOURCES IN ITABORAÍ (RJ)

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## ABSTRACT

The municipality of Itaboraí lies in a complex tectonic setting, with landforms controlled by geological structures. The São José de Itaboraí Paleontological Park stands out as a former limestone quarry with important fossils and geological formations representative of South American history. This study evaluates the potential for new limestone occurrences in the municipality through integrated analysis of airborne gamma-ray spectrometry and magnetic data. Maps were correlated with topographic and structural data to identify areas with features similar to the deactivated quarry, using data from the Geological Survey of Brazil. Preliminary results indicate that dikes and faults influenced the formation of carbonate units. Three regions with profiles similar to the exhausted quarry and a characteristic gamma-ray spectrometric signature were identified, useful for prospecting. The approach confirms the importance of integrating geophysical and structural data to identify new deposits.

**Keywords:** Gamma spectrometry, Magnetometry, Limestone, Mining, Structural geology.