

INTEGRATED ANALYSIS OF AIRBORNE RADIOMETRIC AND MAGNETIC DATA FOR THE LAGOA REAL DISTRICT, BAHIA, BRAZIL

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The Lagoa Real district, Brazil's second largest uranium reserve (100.000t U₃O₈), is associated with albitite lenses enclosed in Mesoproterozoic granitic-gnaisses rocks within the Paramirim block, at the southern portion of the São Francisco Craton. The São Timóteo Project, a detailed airborne magnetic and radiometric survey was carried out in this district. Regional geology and ore control aspects were improved by integrated analysis of geophysical data. Digital image processing techniques were applied to enhance the radiometric and magnetic data. Radiometric data were useful to delineate uranium and thorium anomalies that occur in the studied area. Magnetic data were useful to provide information of the structural framework, indicating discontinuities in the 30, 70, 170, 0 and 140 azimuths. The latter two structural trends were associated with a regional ductile flexure to which the main uranium ores are located. However, thorium anomalies are not associated to these trends. The main structural trends are probably associated to the intense tectono-metamorphic events that affected the region during the Brasiliano cycle. The results of integrated analysis suggest that the main uranium concentration occurred during this period.