NATURAL VS. ANTHROPIC INPUT OF ARSENIC IN THE RIBEIRA BASIN, SE BRAZIL

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Elevated heavy metal and arsenic concentrations in sediments along the Ribeira de Iguape river , southeastern Brazil, have been reported since the seventies. The mining and metallurgic activities in the Upper Ribeira Valley have always been suggested as the most probable sources of metal contamination. Downstream the mining areas and until the medium course of the river, the arsenic contents exceeded 28 to 2 times the accepted threshold (8 mg/g) in stream-sediments, in 1995. Arsenic enrichment (15 mg/g) in the upper part of sediment-cores sampled near the Sete Barras town was interpreted as a result of As-bearing ores dressing in modern times. Nevertheless, the Ribeira de Iguape river drains an important natural arsenic anomaly downstream the mining area. The Piririca gold deposits are associated with this As anomaly. During the present study the geochemistry of different media (surface water, stream- sediment and soil) was investigated in the Piririca region. No elevated arsenic contents in surface water were found. However, the stream-sediments contain high As concentrations up to 355 mg/g. Since there has never been any ore production in the Piririca region, the local arsenic input may be regarded as natural. An attempt to model these results in a simple way is now being made to estimate how much arsenic in the Ribeira de Iguape river sediments is due to anthropic action and how much is due to erosion of As-rich soils.