

SEDIMENTATION RATES BY ^{210}Pb METHOD AND TRACE ELEMENTS BY INAA IN TWO SEDIMENT CORES FROM THE TIETÊ RIVER, SÃO PAULO, BRAZIL

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The Tietê River, with 1,100 km of extension, is one of the most economically relevant rivers of the State of São Paulo. It is also considered one of the most polluted rivers in the world, especially when it passes through the metropolitan region of São Paulo (RMSP). As a result of pollution observed since the 1950s, a project was established with the aim of evaluating the historic concentration of some metal and trace elements in sediment cores dated by ^{210}Pb method. The cores were sampled in several points of the river, from its source in Salesópolis up to its mouth, in the Paraná River. This study presents the results obtained in two sediment cores collected in Santana de Parnaíba and Salto de Itú, both cities located after the RMSP. Instrumental neutron activation analysis was used to determine As, Ba, Br, Ca, Ce, Co, Cr, Cs, Eu, Fe, Hf, La, Lu, Na, Nd, Rb, Sb, Sc, Sm, Ta, Tb, Th, U, Yb and Zn elements. Precision and accuracy were checked by means of certified reference materials BEN (Basalt-IWG-GIT), SL-1 (Lake Sediment - IAEA) and Soil-5 (IAEA), that shows certified concentration values for all elements analyzed. The INAA results were compared to the NASC reference values (North American Shale Composite) and regional basal values. The enrichment factor (EF) and geoaccumulation index (G_I) were used to assess the presence of anthropogenic pollution sources. The sedimentation rates were obtained by the ^{210}Pb method and presented values which show that these reservoirs are affected by the rainy season and urban expansion of its surroundings.