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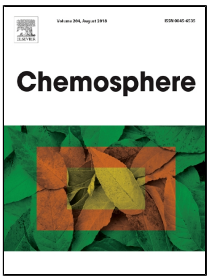

Industrial waste as a source of surface and groundwater pollution for more than half a century in a sector of the Río de la Plata coastal plain (Argentina)

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Industrial waste as a source of surface and groundwater pollution for more than half a century in a sector of the Río de la Plata coastal plain (Argentina)

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Abstract

Environmental liabilities have become one of the most important problems of the last years, especially those of contaminated sites located in urban areas which have been abandoned by pollution intensive industries. Such sites may contain hazardous materials that pose risks to human health and the environment. Industrial waste from the ancient sulfuric acid industry is scattered in a local area at the petrochemical pole in a sector of the Río de la Plata coastal plain. The aim of this work is to define the geochemical processes that determine the alteration of waste in the old sulfuric acid industry (OSAI) area and to study the migration of soluble pollutants to groundwater. A survey of soil and waste deposit was carried out and samples were examined by X-ray diffraction, under a scanning electron microscope and a polarizing microscope. Surface water and groundwater samples, both to the unconfined and semi-confined aquifers, were collected to determine electrical conductivity, pH and major elements. The results show the presence of minerals composed of sulfur associated with jarosite and iron oxides on superficial sediments. The detailed