

ARSENIC SPECIATION IN DRAINAGE IMPACTED BY GOLD MINE TAILING DEPOSITS. NOVA LIMA, MINAS GERAIS, BRAZIL¹

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Abstract: A study of chemical speciation of surface and groundwater, using field resins, was performed in an area under the influence of former gold mining activities. The research area included two sampling points located in the Iron Quadrangle, Cardoso river in Nova Lima MG and a tailing deposit located along the same river. The results under the influence of the physical chemical conditions of the river, show a presence of As (III) in the range of 40% to 83% relatively to total dissolved arsenic and 94% of As (III) in a monitoring well from the mine tailing deposit. Regardless of the high concentration of As (III) in the tailing deposit's ground water, the sampled tailing has a high capacity to sorb As (III) and As (V), thus creating a barrier to the release of arsenic to the surrounding areas.

Additional Key Words: Arsenic speciation, environmental impact assessment, gold mine tailing deposits.

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