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Distribution trends and ecological risks of arsenic and trace metals in wetland sediments around gold mining activities in central-southern and southeastern Côte d'Ivoire

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Title: Distribution trends and ecological risks of arsenic and trace metals in wetland sediments around gold mining activities in central-southern and southeastern Côte d'Ivoire.

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Abstract

The distribution patterns and sources of arsenic and trace metals (Cd, Pb, Cu, Zn, Cr, Co, Fe, Al, Mn, and Ni) were investigated in wetland sediments that may be impacted by industrial and artisanal gold mining, along with those from non-mining areas in Divo (Bonikro and Agbaou sites) and Aboisso (Afema site) Departments, central-southern and south-eastern Côte d'Ivoire, respectively. Ecological risks of sediments were examined using the potential ecological risk index (PERI) and sediment quality guidelines (SQGs). Sediments from mining activities showed significantly higher total As, Pb, Cr, Ni, Mn, Cu, and Al concentrations than the ones from non-mining areas at Afema and Agbaou. On the contrary, a reverse spatial trend was observed for Al, Cr, and As at Bonikro. Geoaccumulation index showed moderate to strong contamination in Cd whatever the sites and

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