Short Abstract

Arsenic contaminated groundwater aquifers (viz. < 70 m) in the alluvial floodplain of Brahmaputra have recently been reported as serious health concern since last one decade. Deposition of suspended sediments carried by numerous tributaries over a flat terrain of BFP and Ganga- Meghana flood plain (i.e., West Bengal, India, and Bangladesh) have the manifest equal potential of the source. Geogenic source of arsenic and the cause for mobilization in shallow aquifers of Brahmaputra flood plain (BFP) is less understood. The causes for the heterogeneous distribution of arsenic such as high (H*As*CR) and low (L*As*CR) contaminated region over parts of the BFP has more concern for the hydro-geologist. Understand the process and predominant mechanism prevailing in this region. Two study sites viz. Bongaigaon, H*As*CR and Darrang, L*As*CR district of Assam, India selected. Delineate the safe arsenic region and predict the arsenic concentration variation over the study area aquifers is a prerequisite to mitigate the problem. It's hypothesized that the cause for H*As*CR and L*As*CR region has controlled by an integrated factor such as arsenic bearing minerals dissolution and reduction mediated by indigenous microbes in the shallow aquifer. Moreover, an effect of metrology, topography, and stratigraphy has major control of arsenic mobilization in H*As*CR and L*As*CR region's aquifers.