

Geochemistry, from rain water to groundwater and pollution in Dhaka water

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Rain water is the source of most ground water and a logical starting point for the study of groundwater geochemistry. However natural and anthropogenic dusts and gases modify the composition. Before the rain turns into ground water, various processes in the soil may affect the concentrations. Dhaka, capital of Bangladesh, is a megacity dependant on groundwater for the majority of its water supply. Recharge to the groundwater aquifer is insufficient to balance abstraction, groundwater levels are in decline and water quality is compromised by seepage from areas of urban and industrial contamination and leakage from polluted rivers. Environmental isotope distributions have been used independently to evaluate the significance of potential sources of pollution. Both approaches identify the polluted River Buriganga as the main threat to groundwater quality, indicating priorities for monitoring and aquifer protection. In this abstract, we will follow the evolution in water chemistry from rain, via soil and contaminated river recharge to the aquifer.

Keywords: Dhaka Rainwater, River pollution, Groundwater