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Arsenic in drinking water: a worldwide water quality concern for water supply companies

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Abstract. For more than a decade it has been known that shallow tube wells in Bangladesh are frequently contaminated with arsenic concentrations at a level that is harmful to human health. By now it is clear that a disaster of an unheard magnitude is going on: the World Health Organization has estimated that long-term exposure to arsenic in groundwater, at concentrations over 500 $\mu\text{g L}^{-1}$, causes death in 1 in 10 adults. Other studies show that problems with arsenic in groundwater/drinking water occur in many more countries worldwide, such as in the USA and China. In Europe the focus on arsenic problems is currently confined to countries with high arsenic levels in their groundwater, such as Serbia, Hungary and Italy. In most other European countries, the naturally occurring arsenic concentrations are mostly lower than the European drinking water standard of 10 $\mu\text{g L}^{-1}$. However, from the literature review presented in this paper, it is concluded that at this level health risks cannot be excluded. As consumers in European countries expect the drinking water to be of impeccable quality, it is recommended that water supply companies optimize arsenic removal to a level of <1 $\mu\text{g L}^{-1}$, which is technically feasible.

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