

## Arsenic occurrence in groundwater of Kathmandu Valley, Nepal

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### ABSTRACT

This study was carried out to assess arsenic occurrence in groundwater of Kathmandu Valley, Nepal, with focus on spatial and seasonal variation, total and dissolved arsenic concentration and the arsenic release process. Several deep and shallow groundwater samples from northern and central groundwater districts were collected during the pre-monsoon and monsoon seasons, and analyzed for major physicochemical parameters. The arsenic concentration was <10 µg/L (i.e. WHO standard) in shallow groundwater, whereas in deep groundwater, 52% of samples exceeded the WHO standard. The arsenic varies spatially with higher concentration towards the central groundwater district whereas seasonal variation is insignificant. Arsenic is mainly released into the groundwater from the natural source under the reductive process. The central groundwater has a higher reducing condition than the northern groundwater districts. The concentrations of total and dissolved arsenic are not significantly different.

*Keywords:* Arsenic; Groundwater; Kathmandu Valley

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