

## **Behaviour of trace organic pollutants during managed aquifer recharge in an urban water cycle (Berlin, Germany)**

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Berlin uses bank filtered and artificially recharged water for drinking water production. Because the local wastewater treatment plants discharge treated wastewater into the surface water, the system can be considered a partially closed water cycle relying partly on indirect wastewater reuse. Under such conditions, wastewater residues may potentially appear in ground- and drinking water. Managed aquifer recharge (MAR), however, acts as an effective pre-treatment barrier, removing or at least partially removing trace organic pollutants. In the past two decades, various projects investigated on the transport and fate of trace organic pollutants (mostly pharmaceutical residues) during MAR in Berlin. Results showed that micropollutants were mostly eliminated efficiently during subsurface passage, including the potentially critical antimicrobial residues, whereby attenuation was ascribed to biodegradation in most cases. For a number of compounds, degradation was dependent on temperatures and related redox conditions, which were subject to strong seasonal variations. Difficulties arise from the problem of transferability from one site to another. The talk aims at highlighting research on the fate of organic trace pollutants in an urban environment, using the city of Berlin as an example.