

**Table 4-4. Studies of 6PPD and 6PPD-q concentrations in groundwater**

Location	Information	Concentration (ng/L)	Lab Instrumentation	Detection Limit
<a href="#">Guangzhou, China</a> (Zhang et al. 2023)	Surface-water (n=19), groundwater (n=43), and stormwater (n=10) samples were collected along the Liuxi River and analyzed for p-phenylenediamines, including 6PPD and 6PPD-q. Suspended particles from stormwater samples were also analyzed. As expected, 6PPD was only detected in the particle phase.	The concentrations of 6PPD and 6PPD-q in were found to be [median (range)]:  6PPD: Groundwater: ND  6PPD-q: Groundwater: 0.11 (ND–0.70)	UHPLC-MS/MS	6PPD: MDL: 0.048 ng/L MQL: 0.160 ng/L  6PPD-q: MDL: 0.029 ng/L MQL: 0.098 ng/L

Notes: MDL=method detection limit, MQL=method quantification limit, ND=nondetect, ng/L=nanogram per liter, UHPLC-MS/MS=ultra-high-performance liquid chromatography–tandem mass spectrometry

## References

Zhang, Ruiling, Shizhen Zhao, Xin Liu, Lele Tian, Yangzhi Mo, Xin Yi, Shiyang Liu, Jiaqi Liu, Jun Li, and Gan Zhang. 2023. “Aquatic Environmental Fates and Risks of Benzotriazoles, Benzothiazoles, and p-Phenylenediamines in a Catchment Providing Water to a Megacity of China.” *Environmental Research* 216 (January):114721. <https://doi.org/10.1016/j.envres.2022.114721>.