

Spatial Distribution and Seasonal Variation of Perfluoroalkyl Substances (PFASs) in the Reservoir in Taiwan

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Abstract

Drinking water is a route of exposure for populations using water contaminated by PFASs. Perfluoroalkyl substances (PFASs) are emerging contaminants that have been detected in the environment. The spatial distribution, temporal variation, and sources of PFASs in the reservoir of northern Taiwan were investigated by measuring the concentrations and patterns of 10 PFASs in the surface waters. Surface waters were collected from the reservoir during 2017. High performance liquid chromatography coupled with electrospray ionization-tandem mass spectrometry (HPLC/ESI-MS/MS) was used to identify and quantify PFASs. The \sum PFAS concentrations ranged from ND-212 ng/L. PFOA and PFOS were the two major PFASs be detected in the surface waters. Principal component analysis (PCA) was employed to identify important components or factors that explain different compounds, and results showed that PFOA and PFOS dominated factor loadings.

Keywords: PFASs; Reservoir; Occurrence; PFOA; PFOS