## Lake Niapenco

Peeper Sampler (PFAS)

## Summary

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| **Media:** | Sediment pore water and surface water |
| **Study Type:** | Side-by-side study |
| **Technology:** | Equilibration |
| **Peer Reviewed:** | Yes |
| **Publication Date:** | May 2023 |

## Study Description

- Results are provided for a side-by-side comparison of peeper samplers with a variety of membrane filter construction (polyether sulfone, regenerated cellulose, cellulose acetate, and polycarbonate) for equilibration of PFAS compounds in surface water and sediment pore water at Lake Niapenco near Hamilton, Ontario.
- Two rounds of sampler deployment were completed (October 2021 and June 2022) across four locations. Samplers were suspended in the lake surface water and beneath sediment-water interface for comparison analysis with four performance reference compounds.
- A total of 144 samplers (80 ~10 cm beneath water-sediment interface and 64 in the lake column) were deployed in October 2021 and 44 additional samplers (36 in sediment and 8 in surface water) were deployed in June 2022.
- Use of PRCs allows pre-equilibrium sampling over 14–28 days compared to 42–49 days required for 80% of equilibrium.

## Remedial Phase

Passive samplers are used at the site as part of ongoing investigation activities.

## Outcome

The study "…demonstrated that PFAS concentrations determined via the PRCs were within a factor of two compared to those measured in the mechanically extracted pore-water and lake-water samples."

## Case Study Reference

Medon, B.; B.G. Pautler; A. Sweett; J. Roberts; F.F. Risacher; L.A. D'Agostino; J. Conder; J.R. Gauthier; S.A. Mabury; A. Patterson; P. McIsaac; R. Mitzel; S. G. Hakimabadi; and A. Le-Tuan Pham. *Environmental Science Processes & Impacts*. 2023, 25, 980. https://doi.org/10.1039/D2EM00483F