

## Widespread water contamination

Original article by Rebecca Trager. Adapted by Nina Notman.

### Find out how forever chemicals taint water supplies globally

A new study has found that a substantial fraction of surface and groundwater around the globe contains levels of per- and polyfluoroalkyl substances (PFAS) above the national drinking water standards in the regions where they were collected.



Source: © Dushlik/Getty Images

Firefighters battling a blaze with PFAS-containing foam but are there more environmentally-friendly alternatives?

### What are PFAS?

PFAS are a group of around 14,000 synthetic organic compounds with multiple fluorine atoms attached to alkyl chains. Since the 1950s, companies have widely used PFAS in products including non-stick frying pans, clothing, furniture and firefighting foam due to the chemicals' resistance to heat, water, grease and stains.

These chemicals have a dark side, though. The fluorine and carbon bond is extremely strong and as a result these compounds don't degrade – in the environment or in

our bodies. Scientists have linked a number of serious health conditions to PFAS in recent years, including testicular cancer, thyroid disease, infertility and developmental defects in unborn children.

### Exceeding drinking water standards

The team found that 32% of groundwater and 16% of the surface water samples exceeded the national drinking water standards in some countries. 'Drinking water standards vary around the world. In Australia, EU, the US and Canada,' explains Denis O'Carroll, whose lab carried out the study, 'the number of samples that exceeded those [limits] was somewhat surprising to us.'

This does not necessarily mean we are drinking water with such high levels of PFAS, however. Many water treatment plants are designed to reduce PFAS levels in water before it reaches our taps.

This is adapted from the article 'PFAS levels in the environment have been significantly underestimated' *Chemistry World*. Read the full article: [rsc.li/3K5E0jL](https://rsc.li/3K5E0jL).