# 2026 Ineson Lecture

*Thursday 19th November at the Geological Society, Burlington House, London.*

## Tiny pollutants – big problems

The International Association of Hydrogeologists British National Chapter, together with the Hydrogeological Group, are pleased to announce the 2026 Ineson Lecture on the theme of Tiny Pollutants, Big Problems.

**Programme**

**09:30 am** Registration & coffee in the Lower Library

**10:30 am** Welcome, Harriet Carlyle (Chair of IAH GB Chapter)

**10:40 am Tim Besien (Independent Hydrogeologist) -**
**Emerging Contaminants: Is Groundwater Regulation Keeping Up?**

**11:10 am Mark Morton (Yorkshire Water) – Micropollutants, a water company perspective (full title TBC)**

**11:40 am** Open discussion

**11:50 pm** Poster pitch

**12:20 pm** John Day Bursary award

**12:30 pm** Lunch & Hydro Group AGM

**13:30 pm Robertus Hoogeveen (SWECO Sweden) – PFAS (full title TBC)**

**14:00 pm Dan Lapworth (BGS) – Biosolids (full title TBC)**

**14:30 pm** Hydrogeological Group Medal Awards

**14:40 pm** Tea

**15:10 pm** Ineson Lecture Introduction

**15:15 pm Ineson Lecture: Viviana Re (University of Pisa) - Tiny Pollutants, Big Problems**

**16:15 pm** Panel discussion

**17:00 pm** Drinks reception in the library

# Speaker Abstracts **(more to be added soon)**

Viviana Re (University of Pisa) - Tiny Pollutants, Big Problems

For decades, hydrogeologists have sought to make the invisible visible: to reveal the hidden dynamics of groundwater through tracers, observations and increasingly sophisticated analytical techniques. Yet, as our ability to see deeper, smaller and at lower concentrations has improved, so has the complexity of what we discover.

Micro- and nanoplastics, pharmaceuticals and other contaminants of emerging concern are increasingly being detected in groundwater worldwide, challenging previous assumptions and opening new questions: What does their presence actually tell us about groundwater systems? Can these substances be understood only as pollutants, or can they also provide information about sources, transport and processes occurring underground? And how should their potential risks be interpreted when our capacity to detect them is advancing faster than our understanding of their significance?

At the same time, their detection creates new expectations. Society and water managers increasingly call for clear answers about the meaning, risks and implications of finding these substances in groundwater, even when the scientific evidence remains uncertain and difficult to interpret.

This lecture will explore these challenges through examples from emerging contaminants and microplastics, moving from detection and interpretation to their broader implications for groundwater management and society. It will argue that the future challenge is not simply to make more of the invisible visible, but to understand what we see and to translate increasingly complex scientific evidence into meaningful knowledge and action for society.

Tim Besien (Independent Hydrogeologist) - Emerging Contaminants: Is Groundwater Regulation Keeping Up? Emerging contaminants present a growing challenge for groundwater regulation, particularly as scientific understanding develops faster than regulatory frameworks. This presentation will examine the past, present and future of emerging contaminants in groundwater, with a particular focus on the UK. It will consider their occurrence in UK groundwater, how regulatory approaches have evolved, and the implications of Brexit for the identification and management of emerging substances. It will also explore the challenges of regulating contaminants where our understanding of their occurrence, persistence and potential risks continues to develop. Trifluoroacetic acid (TFA) will be used as a case study to illustrate these challenges and to consider the wider lessons it offers for the future regulation and protection of groundwater resources.

Robertus Hoogeveen (Project Manager Contaminated Sites and Chemicals, Sweco, Malmo, Sweden) The use of PFAS-containing firefighting foams at Stockholm Arlanda Airport between the early 1980s and 2008 resulted in contamination of surface water, soil and groundwater. PFAS has been detected in wildlife and vegetation within and outside the airport and ongoing transport to adjacent water bodies has been observed.

An ongoing investigation aims to determine whether the PFAS contamination poses a risk to human health or the environment and whether remedial action is required. Risk assessments considering human health, soil, surface water, agriculture, ecology and groundwater have been completed and are being further developed.

As part of the groundwater risk assessment, the groundwater level at the airport was mapped. The Airport was then divided into several areas and conceptual models identifying sources, transport pathways and receptors developed for each. These models formed the basis for assessing the transport of PFAS in groundwater.

This presentation will focus on the potential for transport of PFAS from one of the source areas to Kättstabäcken, a surface water body. The available data, conceptual model and groundwater risk assessment will be described. The identified risks may require remedial action. Several pilot tests have been conducted, including an activated carbon barrier for groundwater treatment. The presentation will also describe the preparation of a detailed investigations that are undertaken to support the evaluation of potential remedial measures including the activated carbon barrier.

# Posters – preliminary list

***(more to be added soon)***

**Managing the PFAS Risk in Groundwater, view from a Public Water Supply Company**

*Kelly, Liam* [1,]

[1] Severn Trent

Severn Trent Water (STW) is one of the largest water companies in the UK, with a third of its water coming from groundwater sources. STW have a dedicated hydrogeology team who are responsible for regularly reviewing catchment risks to ensure that wholesome water can continue to be supplied to its customers. Emerging contaminants continue to provide new challenges and PFAS are the latest emerging contaminant to enter the public domain, with public interest and concern increasing at an alarming rate.

As a result of growing customer and regulatory concern, STW undertook a detailed PFAS risk assessment to understand the risk to its 150 groundwater sources. An initial Phase 1 assessment was carried out, which involved a detailed literature review, identification of potential PFAS sources and the risk of those to our assets when considering catchment setting and Source-Pathway-Receptor linkages.

The poster will introduce PFAS and the risks involved, before detailing the STW borehole risk assessment, outcomes, strategy and future challenges

**Trifluoroacetic Acid (TFA): A Small Molecule with the Potential to Cause Big Groundwater Challenges**

*Besien, Tim* [1,]

[1] Independent Hydrogeologist

Trifluoroacetic acid (TFA) is an ultra-short-chain PFAS characterised by exceptional persistence and mobility. It is also the terminal degradation product of numerous $CF_3$-containing substances, resulting in multiple potential pathways to groundwater, including pesticide transformation and leaching, atmospheric deposition and industrial and wastewater inputs.

Recent European monitoring has demonstrated the widespread occurrence of TFA in groundwater and drinking water. Advances in analytical techniques are also increasing our ability to detect and monitor TFA, while understanding of its environmental and toxicological significance continues to develop.

This poster reviews current evidence for the occurrence, sources, environmental behaviour and toxicity of TFA, with particular emphasis on groundwater. It considers emerging regulatory challenges and the implications for groundwater and drinking-water protection. The combination of extreme persistence, mobility, multiple ongoing sources and limited treatment options highlights the need for improved monitoring, source attribution and, ultimately, effective source control.