

EGU25-2928, updated on 20 Apr 2026

<https://doi.org/10.5194/egusphere-egu25-2928>

EGU General Assembly 2025

© Author(s) 2026. This work is distributed under the Creative Commons Attribution 4.0 License.



PFAS-LEACH: A Comprehensive Decision Support Platform for Modeling PFAS Leaching in Source Zones

Bo Guo¹, Jicai Zeng¹, Mark Brusseau², Jacob Smith¹, and Min Ma¹

¹University of Arizona, Department of Hydrology and Atmospheric Sciences, United States of America (boguo@arizona.edu)

²University of Arizona, Department of Environmental Science, United States of America

PFAS-LEACH is a comprehensive decision support platform developed at the University of Arizona that has the capability to quantify source attenuation, spatial mass distribution, and long-term mass discharge of PFAS from the vadose zone to groundwater at PFAS-impacted sites. It includes a suite of four tiers of models spanning from a full-process 3D numerical simulator to analytical solutions implemented in Excel to simple dilution-attenuation calculations. These models account for the various PFAS-specific fate and transport processes in soil and groundwater. This presentation will describe the specific processes represented in each of the model Tiers and will discuss how the different model Tiers can be used to answer practical questions such as characterizing source strengths and risks of groundwater contamination, and derivation of soil screening levels. Illustrative examples of model applications will be presented. As a decision support platform, PFAS-LEACH can improve risk assessment and long-term site management, and will be useful for developing remedial action objectives and for evaluating anticipated impacts of different site remediation approaches at different PFAS-impacted sites.