



ESAA PFAS SYMPOSIUM

Treatment Panel – Can These Forever Chemicals Be Treated?

Ryan Thomas, PhD
Emerging Contaminants Principal
Writing Subgroup Leader – ITRC PFAS Team

PFAS Characteristics

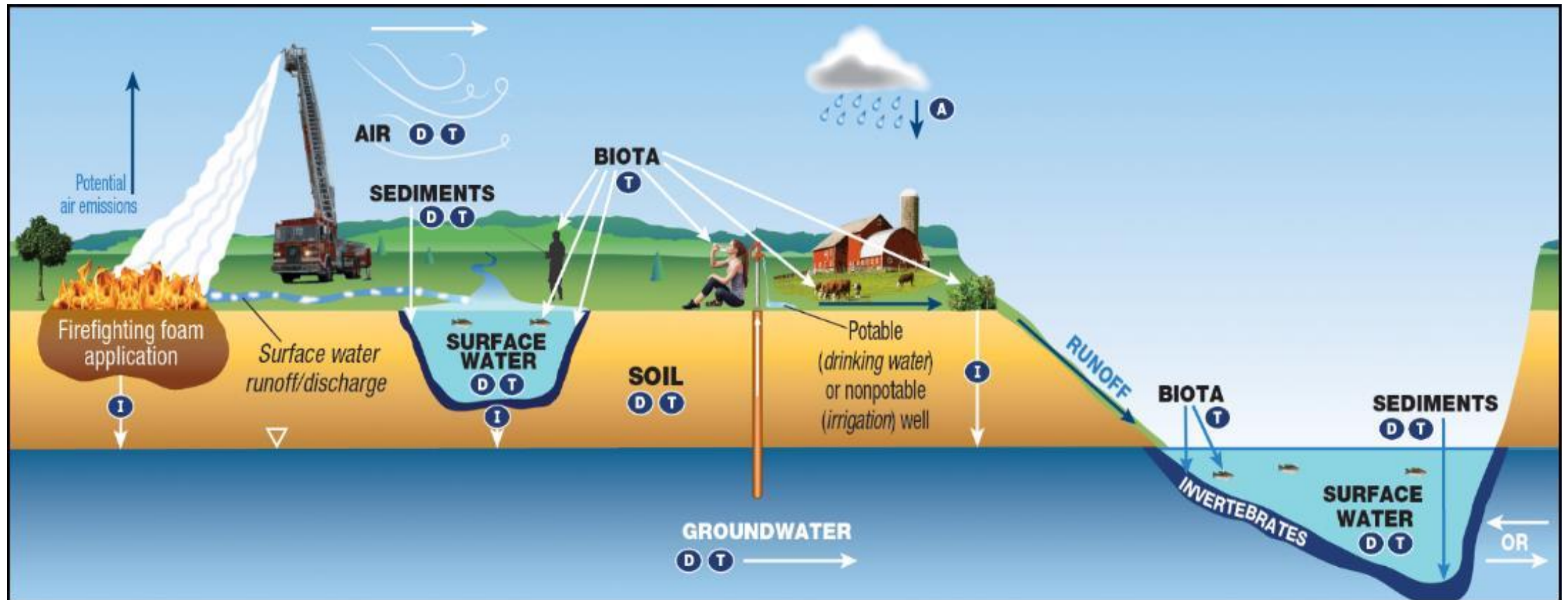
- ▶ **Perfluorinated vs. Polyfluorinated**
- ▶ **Fluorinated tail: chain length**
- ▶ **Non-fluorinated head: functional group and charge state**

PFAS Fate & Transport

Nature of release

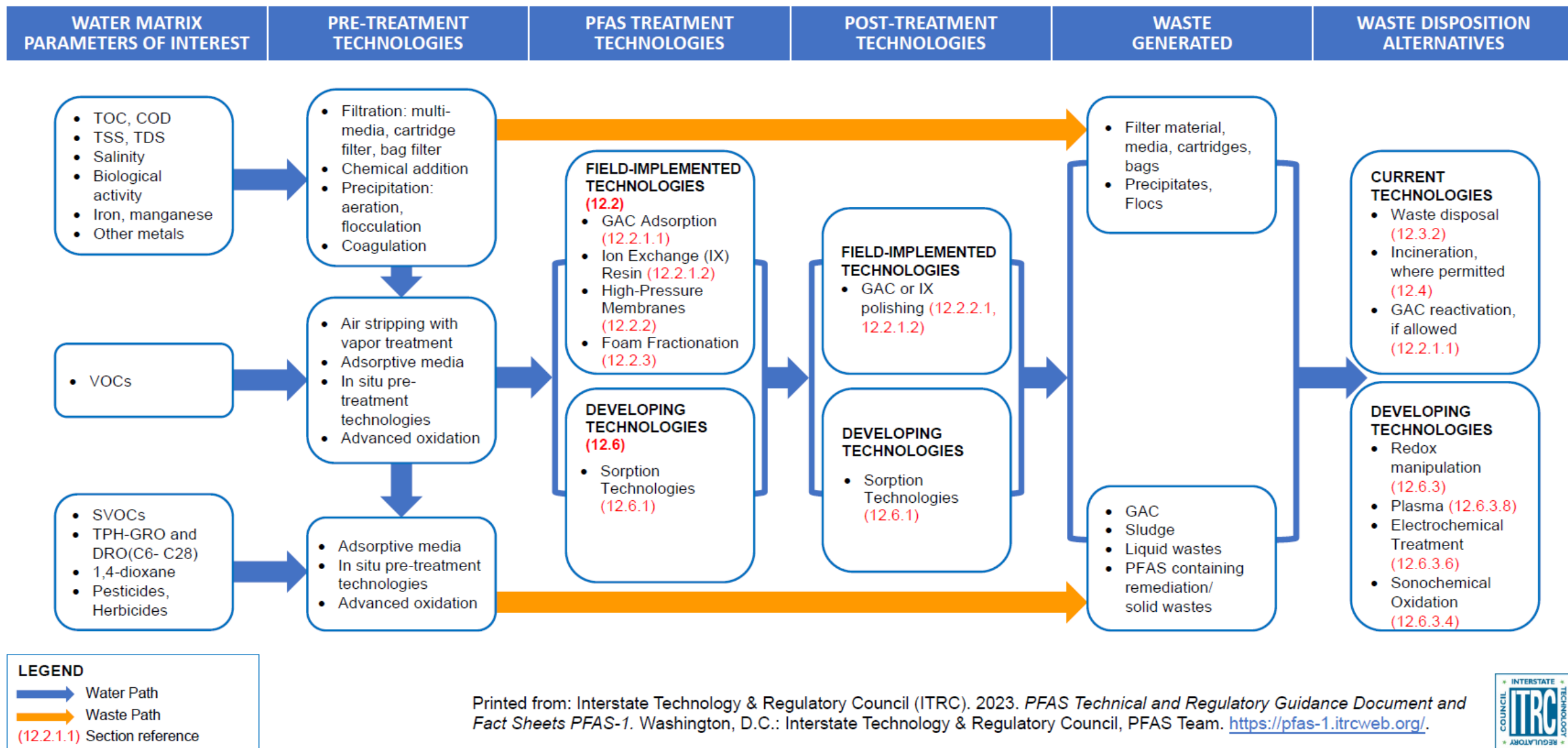
Site Characteristics

- ▶ **Soil properties**
- ▶ **Groundwater depth/velocity**
- ▶ **Groundwater geochemistry**
- ▶ **Prevailing atmospheric conditions**
- ▶ **Co-contaminants**



KEY A Atmospheric Deposition D Diffusion/Dispersion/Advection I Infiltration T Transformation of precursors (abiotic/biotic)

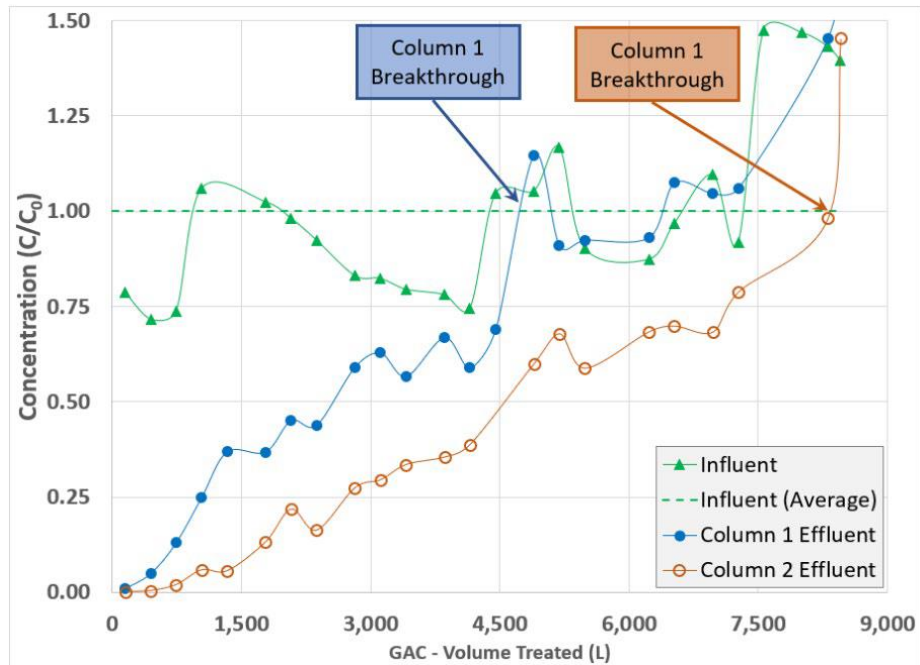
INTEGRATED SOLUTIONS FOR PFAS TREATMENT



Printed from: Interstate Technology & Regulatory Council (ITRC). 2023. *PFAS Technical and Regulatory Guidance Document and Fact Sheets PFAS-1*. Washington, D.C.: Interstate Technology & Regulatory Council, PFAS Team. <https://pfas-1.itrcweb.org/>.

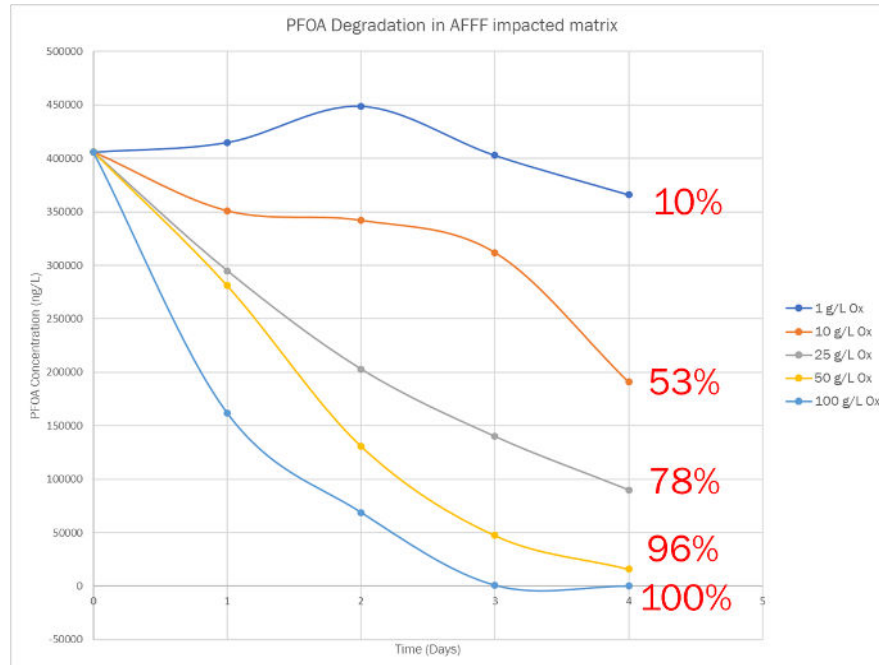
TREATABILITY STUDIES FOR REMEDY SELECTION

Breakthrough Curves



- GAC adsorption info for individual PFAS
- Compare various vendor supplied material performance

Dose Dependency



- Evaluate advanced oxidation or reduction technologies
- Optimize dose-response concentrations

Temperature Dependency



- Enhance performance using temperature variation
- Determine optimal conditions