WSSCWATER
DELIVERING THE ESSENTIAL

PFAS MANAGEMENT & RESEARCH PROGRAM AT WSSC WATER

October 9,2025

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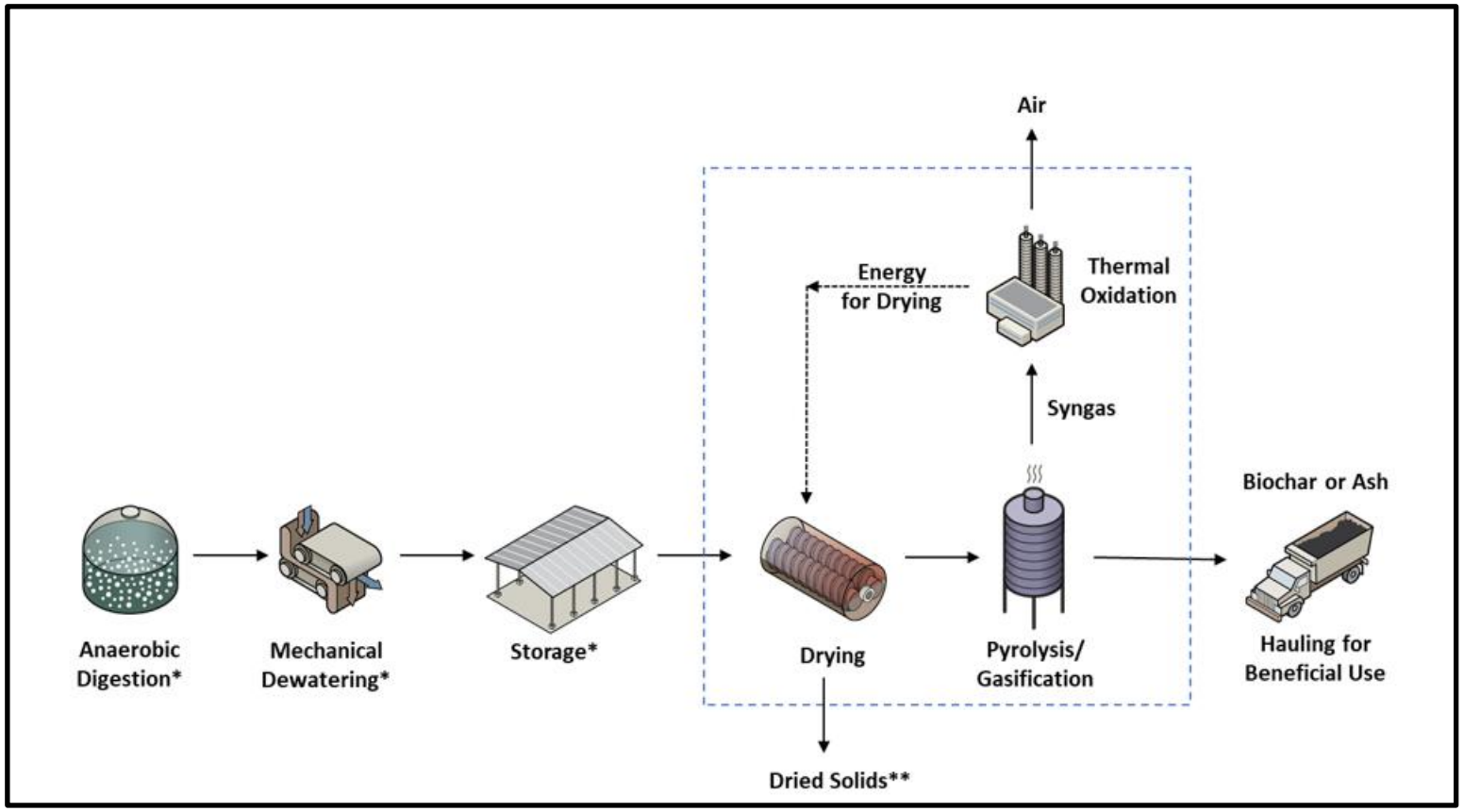
Metropolitan Washington Council of Governments

WSSC Water Biosolids Mangement

- Biosolids from 5 water resource recovery facilities (WRRFs) transported and centrally processed (Bioenergy Facility)
  - **240 wet tons (WT) / day ~90,000 WT/yr**
- Bioenergy Facility:
  - Generates **~3MW** of renewable energy
  - Reduces volumes and improves quality
  - **160 WT / day = ~60,000 WT/yr**
  - Produces an exceptional quality (EQ), Class A product
- WSSC also manages **~60,000 WT/yr** of material produced at DC Water's Blue Plains Facility

Pyrolysis & Gasification as an alternative ?

- Requires installation of a drying system
- **>$200 million** capital investment
  - + cost share of DC Water capital investments
- Most economical to locate adjacent to the Bioenergy Facility



A detailed evaluation of pyrolysis / gasification has been completed

Additional Considerations

Pyrolysis of digested sludge:

- Requires import of feedstock further increasing costs and truck traffic
- Uncertainty on emissions monitoring & air permitting requirements
- Converts sequestered organic carbon into **CO_2 & CO - emissions**
- Located adjacent to Piscataway Creek, County Park and bird sanctuary

WSSC Water BioEnergy Facility – Innovative Biosolids Management

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The Baltimore Banner
9/24/25

While the executive and the council have yet to agree on a solution, the two sides both believe the incinerator should be closed, due to health and environmental concerns and the cost of continuing to operate the facility.

“Incinerators continue to be a bad idea. They’re being frowned on around the country,” . “We’re not unique in this effort to shut incinerators down.”

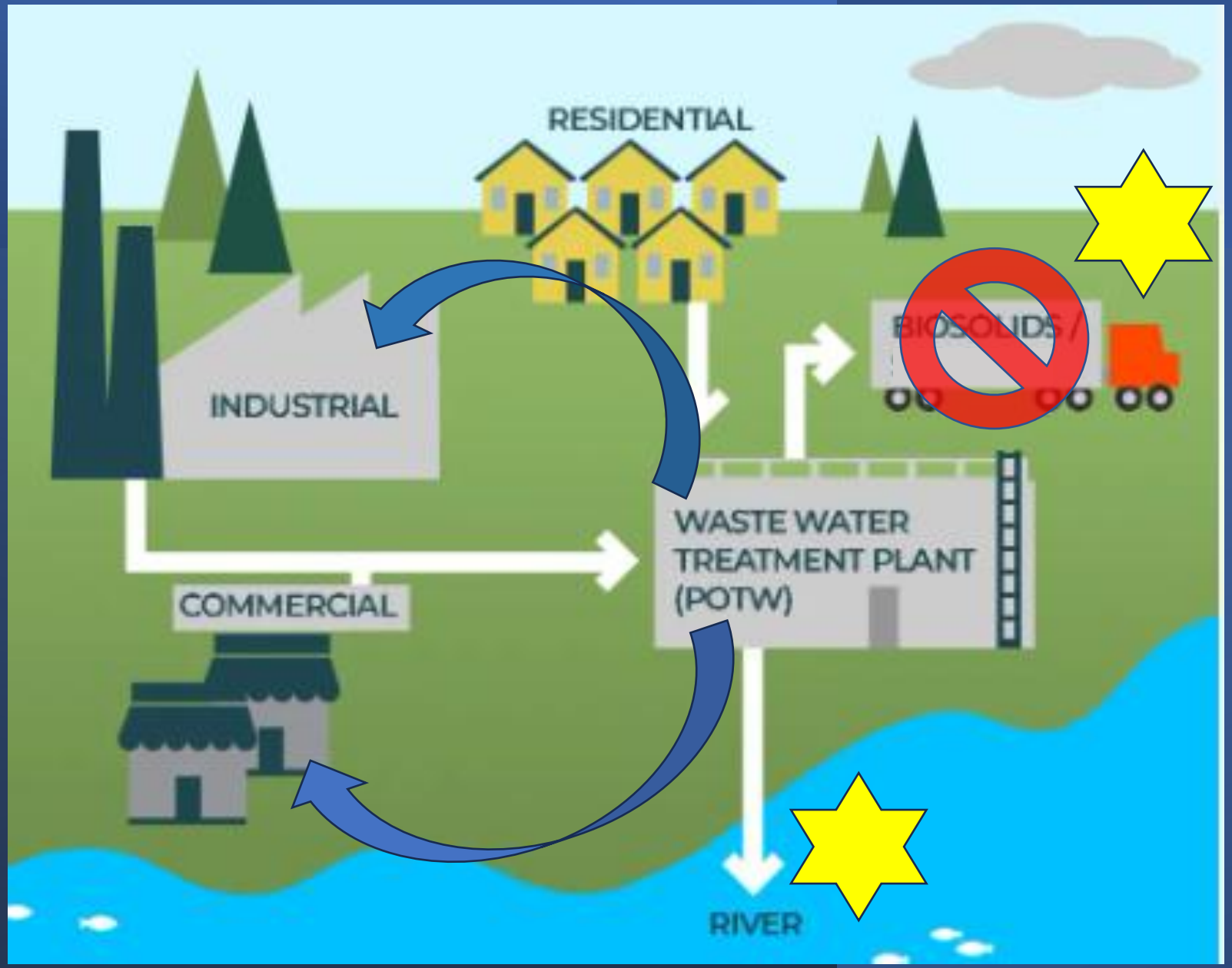
PFAS Management & Research

Source Tracking

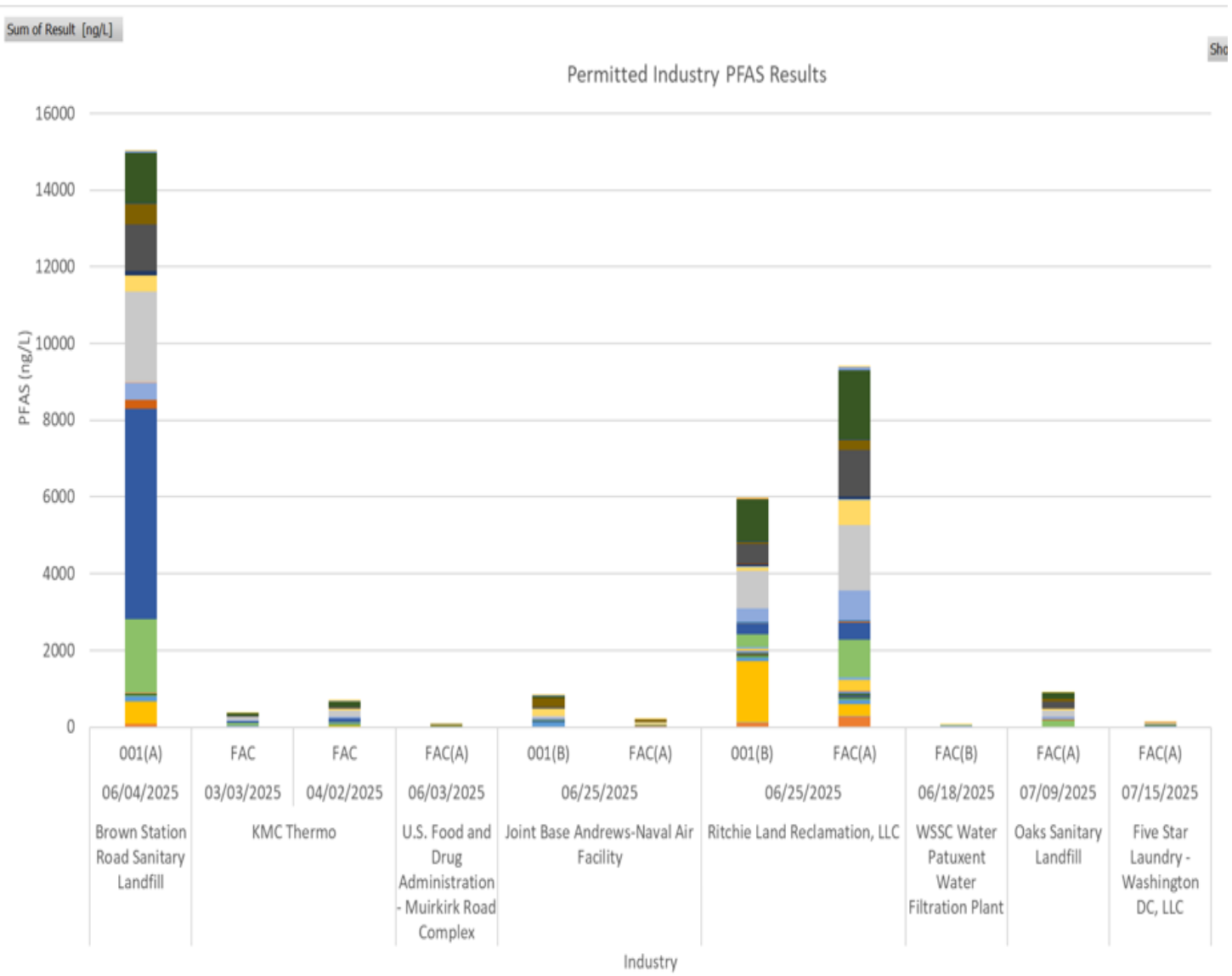
Fate & Transport

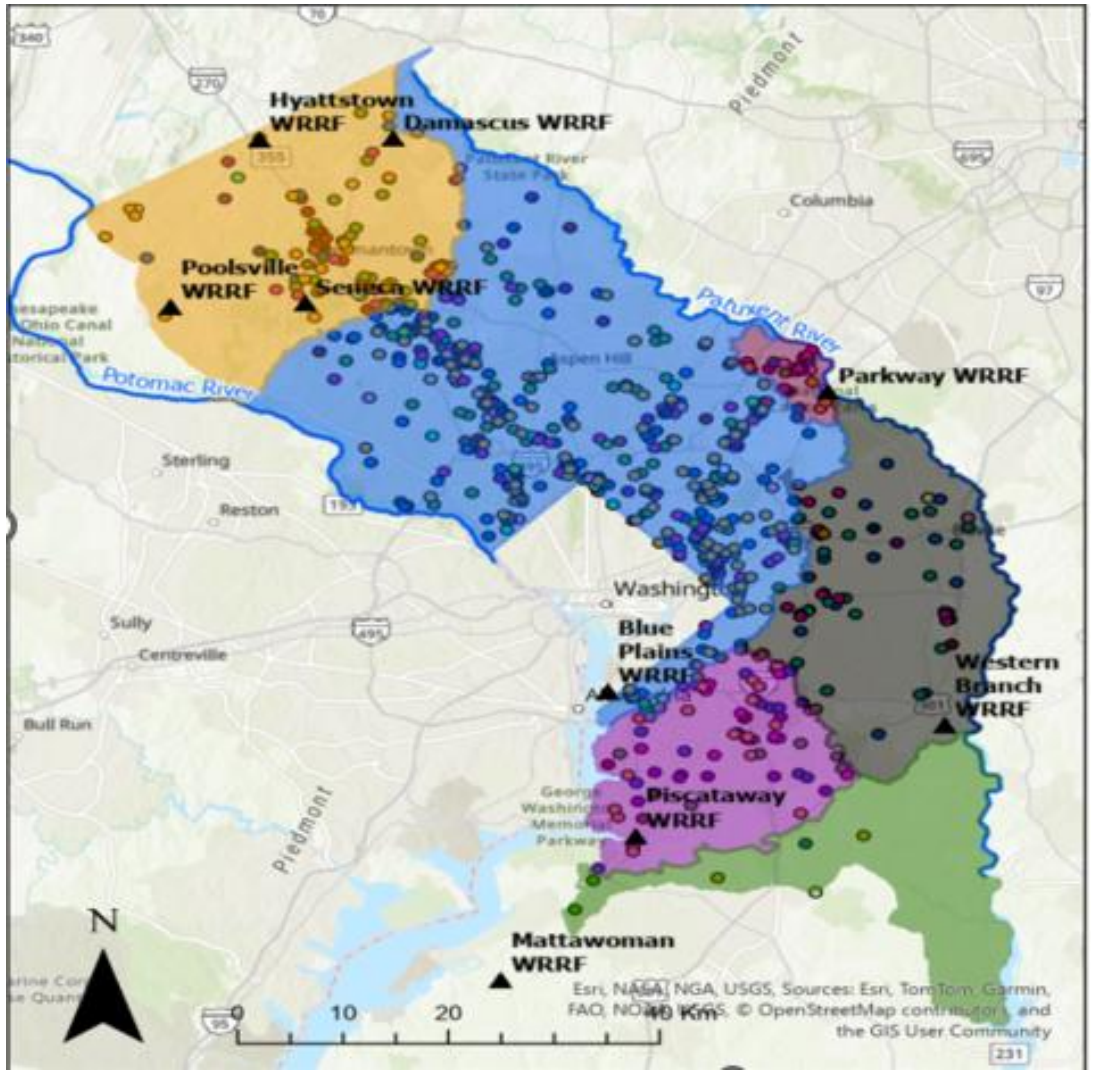
Destruction & Removal

Comprehensive, System- Wide PFAS Mitigation Strategies



Comprehensive PFAS Source Tracking Program





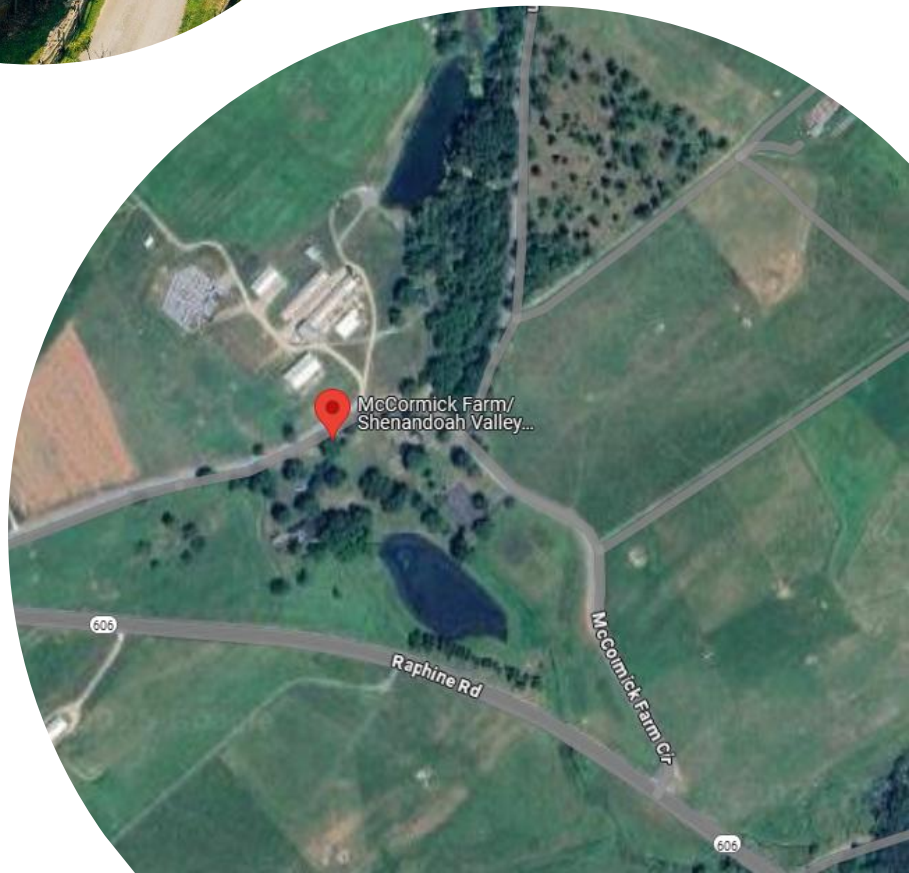
WSSC Water is invested in finding <u>solutions to the PFAS challenge</u>

Invested >$2 million in a state-of-the-art PFAS-specific lab for testing of:

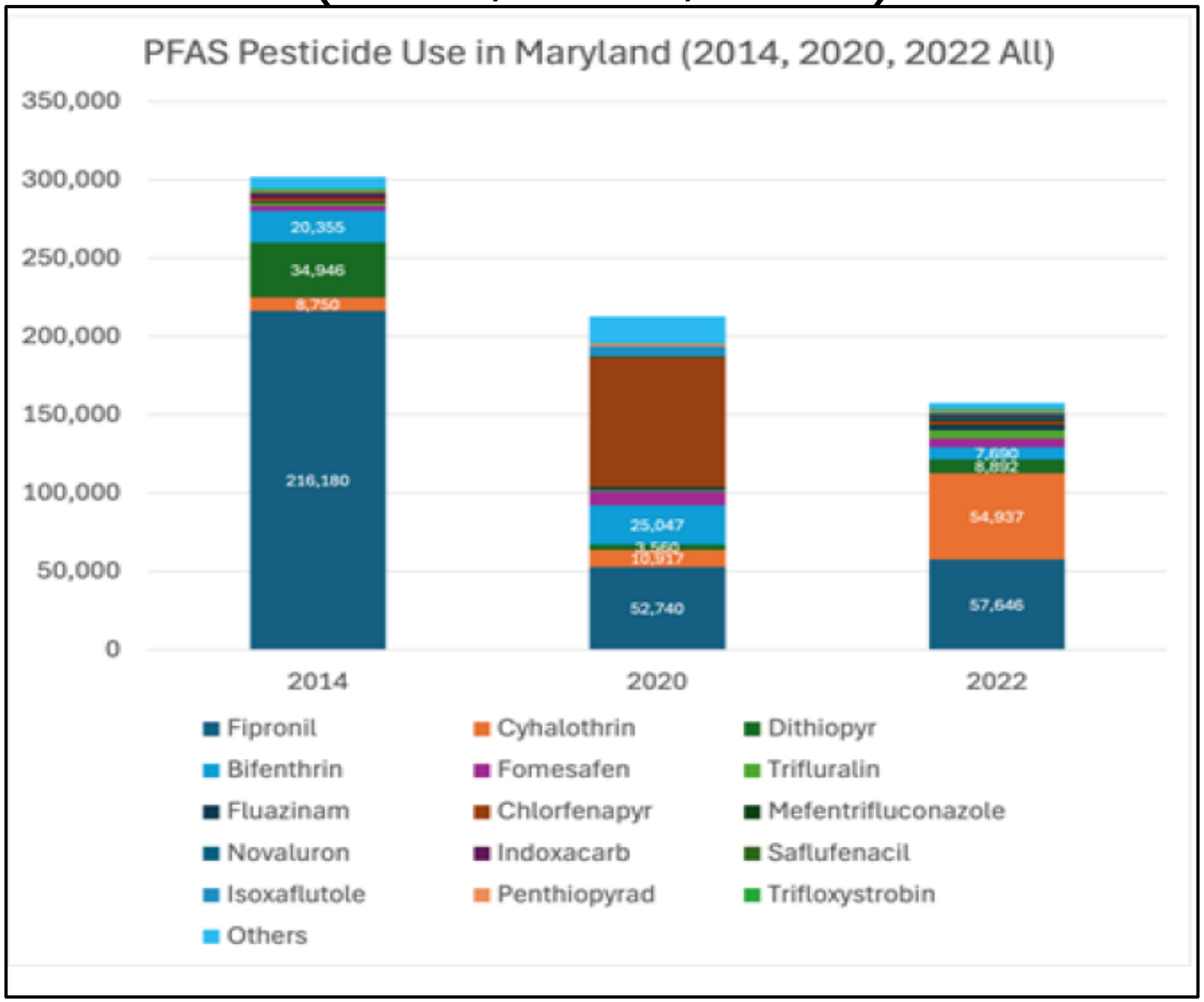
- Potable water
- Source water
- Wastewater
- Biosolids

Shenandoah Valley Agricultural Research and Extension Center

- Virginia Tech Research Center
- Biosolids never previously applied
- Begin Spring 2026 – multi year study anticipated
- Full scale forage cropping cycle
- Evaluate PFAS in:
  - Soil profile
  - Soil pore water / shallow ground water
  - Surface runoff
  - Plant uptake
  - External sources: rainfall / herbicides / pesticides

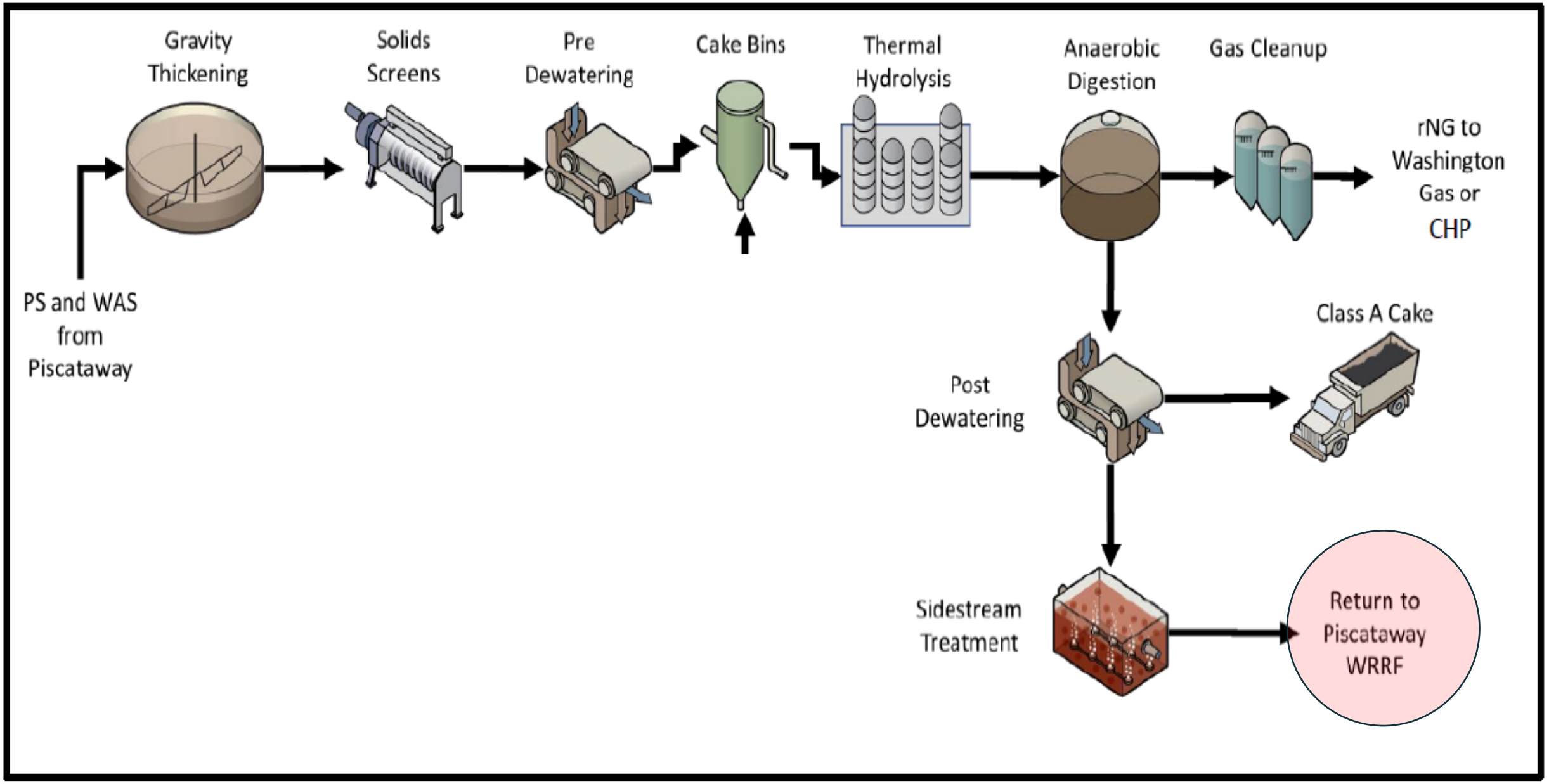


PFAS Pesticide Use (Pounds) in Maryland (2014, 2020, 2022)

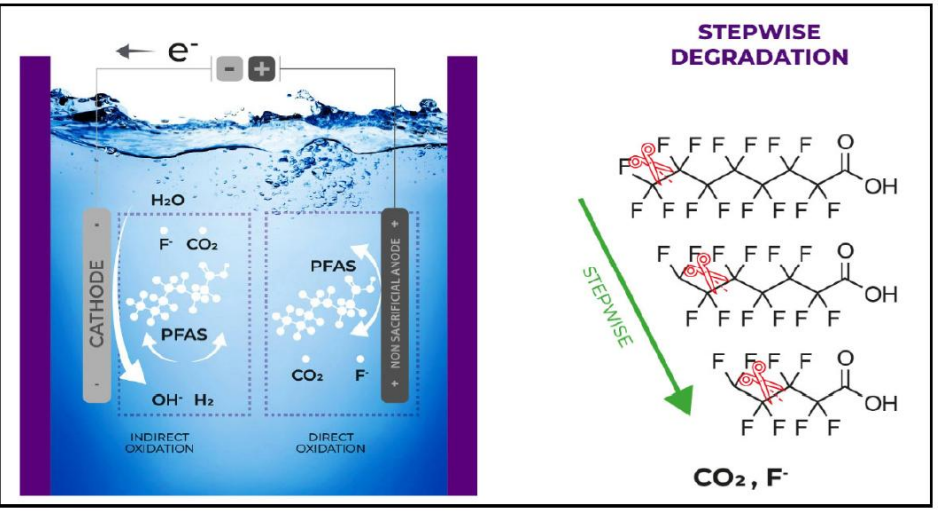



PFAS


ARE NOT FOREVER
PF
AS

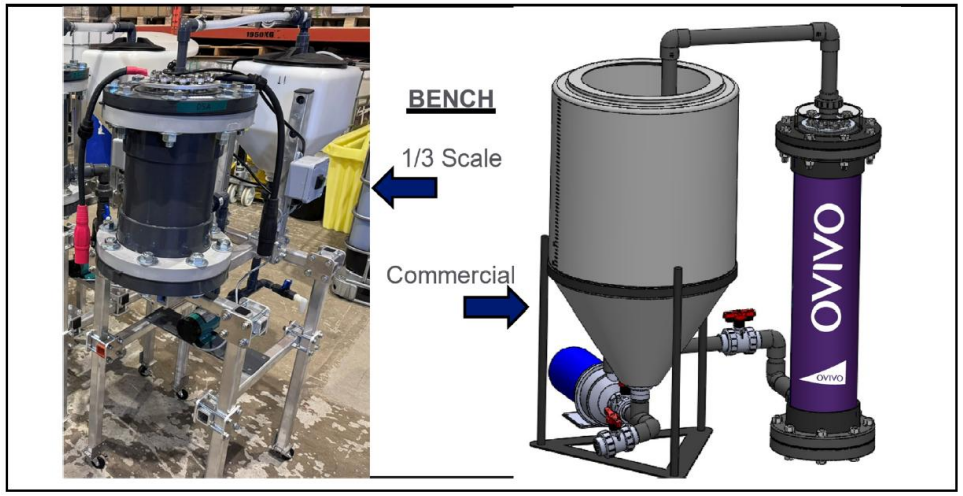

Gravity Thickening
Solids Screens
Pre Dewatering
Cake Bins
Thermal Hydrolysis
Anaerobic Digestion
Gas Cleanup
rNG to Washington Gas or CHP
PS and WAS from Piscataway
Class A Cake
Post Dewatering
Sidestream Treatment
Return to Piscataway WRRF

PFAS Destruction Technologies to be pilot tested



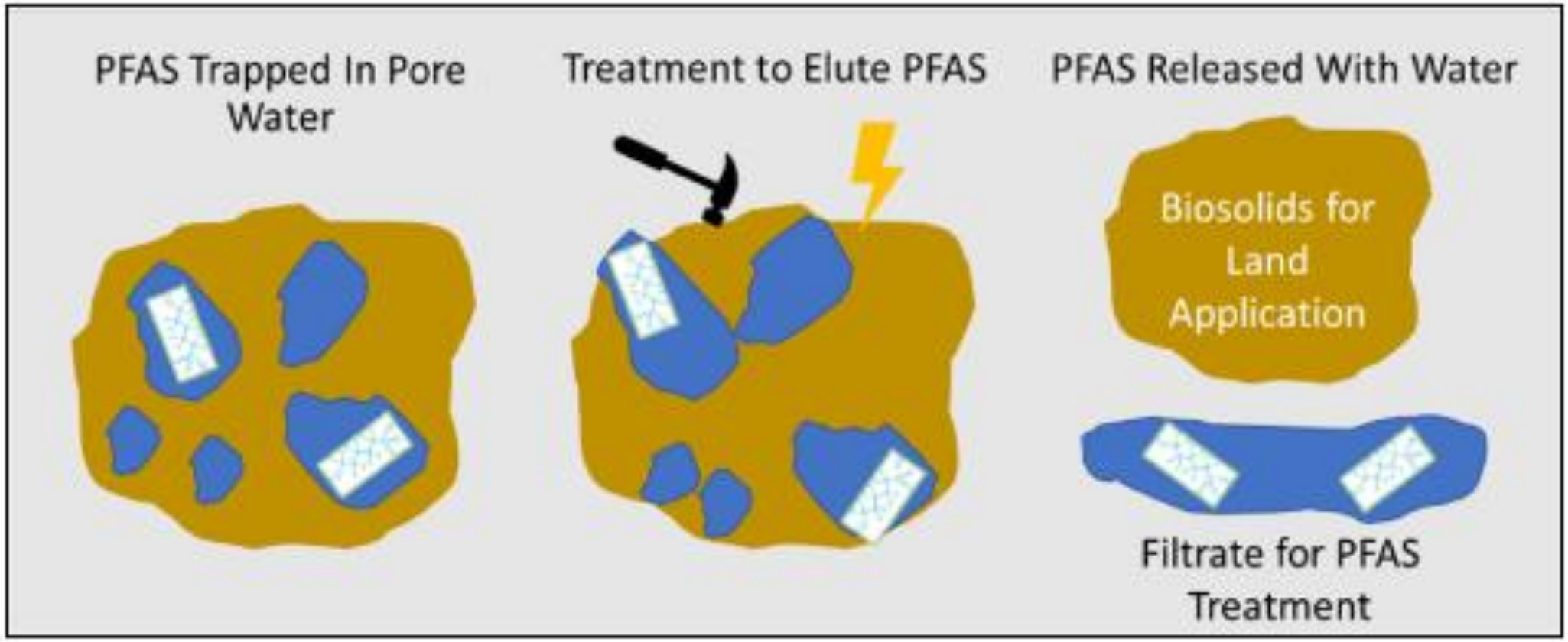
Supercritical Water Oxidation

TiO_2 silica-based granular media activated by UV (UV/SGM)



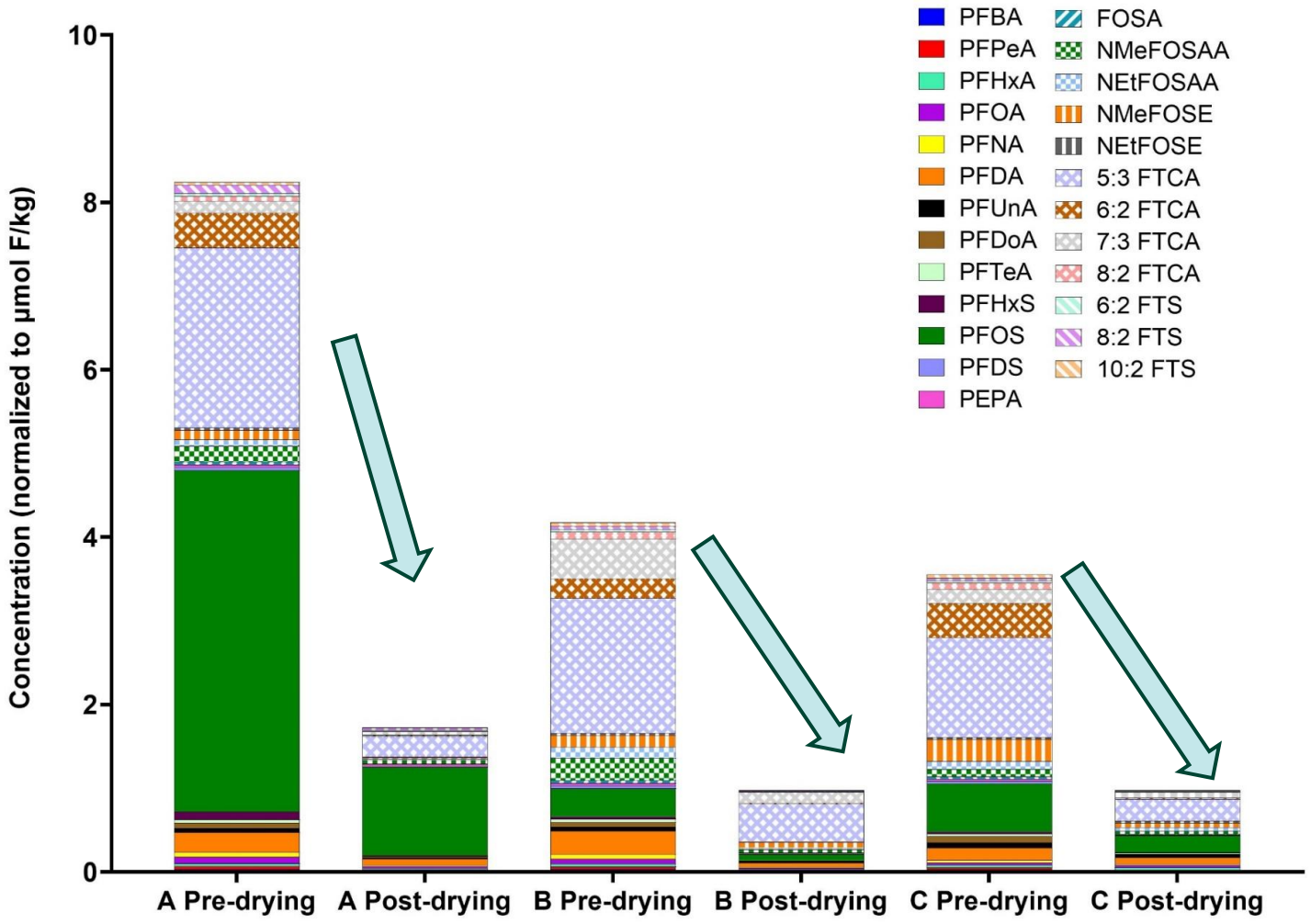
Electrochemical Oxidation

PFAS Elutriation – Potential Benefits

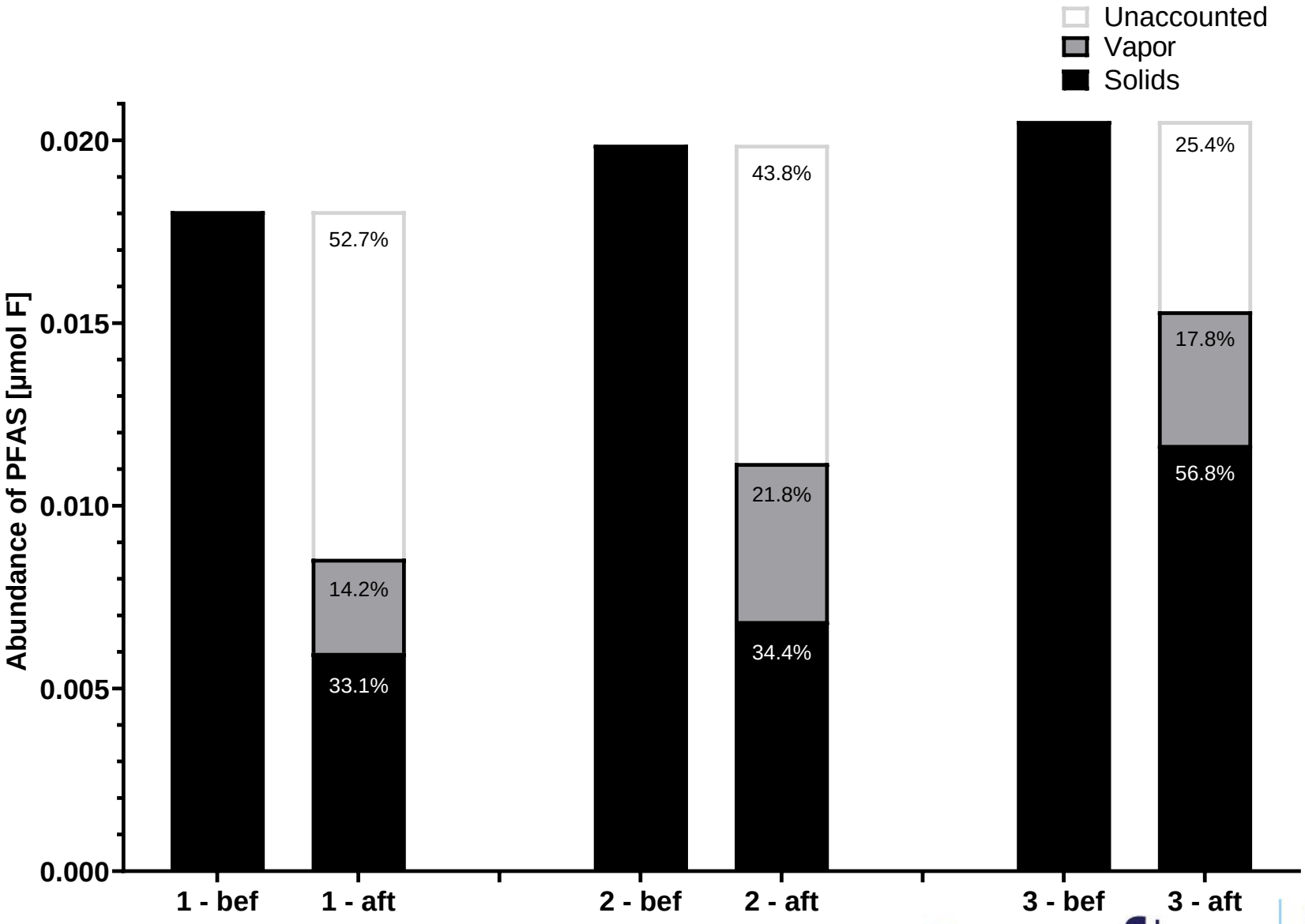


- Reduce soluble PFAS in biosolids
- Partition PFAS into a concentrated treatable process stream
- Reduce PFAS loading to receiving WRRFs

Drying Reduced PFAS Concentrations



Drying reduces the total PFAS concentration in biosolids and alters the PFAS profile. McNamara, Moss, Hoener et al., *Env. Sci.: Water Research & Technology*, 2025.



WHERE THE WATER COMMUNITY CONNECTS

Drying reduces the total PFAS concentration in biosolids and alters the PFAS profile. McNamara, Moss, Hoener et al., *Env. Sci.: Water Research & Technology*, 2025.

Summary & Conclusions

- The Water / wastewater (WW) industry is committed to working collaboratively to identify cost effective, environmentally sustainable solutions to the PFAS issue
- WSSC Water has committed significant time & resources to identifying sources of PFAS; evaluate treatment technologies and lead cutting edge PFAS research
- In the event of regulatory action regarding PFAS in biosolids, alternative management strategies, when required, will take 5-10 years for implementation
- Currently available alternatives to biosolids land application come with a high price tag and significant drawbacks
- PFAS are **NOT** forever and can be degraded. With adequate time, resources and support, the Water/WW industry can play an integral role into helping to wholistically solve the PFAS riddle.