

## PFAS Chemicals

Per- and polyfluoroalkyl substances, or PFAS, include thousands of chemicals used for many purposes. After their accidental discovery in the late 1930s, PFAS were marketed commercially in the 1940s for their stain-proofing, waterproofing and fire-retardant properties, effective in products like fire-extinguishing foam, food packaging, chrome plating, personal care products, nonstick cookware, shampoos, cosmetics and other household items.

### Products commonly made with PFAS



Non-stick pans



Pizza boxes



Cleaning supplies



Water-resistant clothes



Fire-fighting Foam



Carpets



Contact Lenses



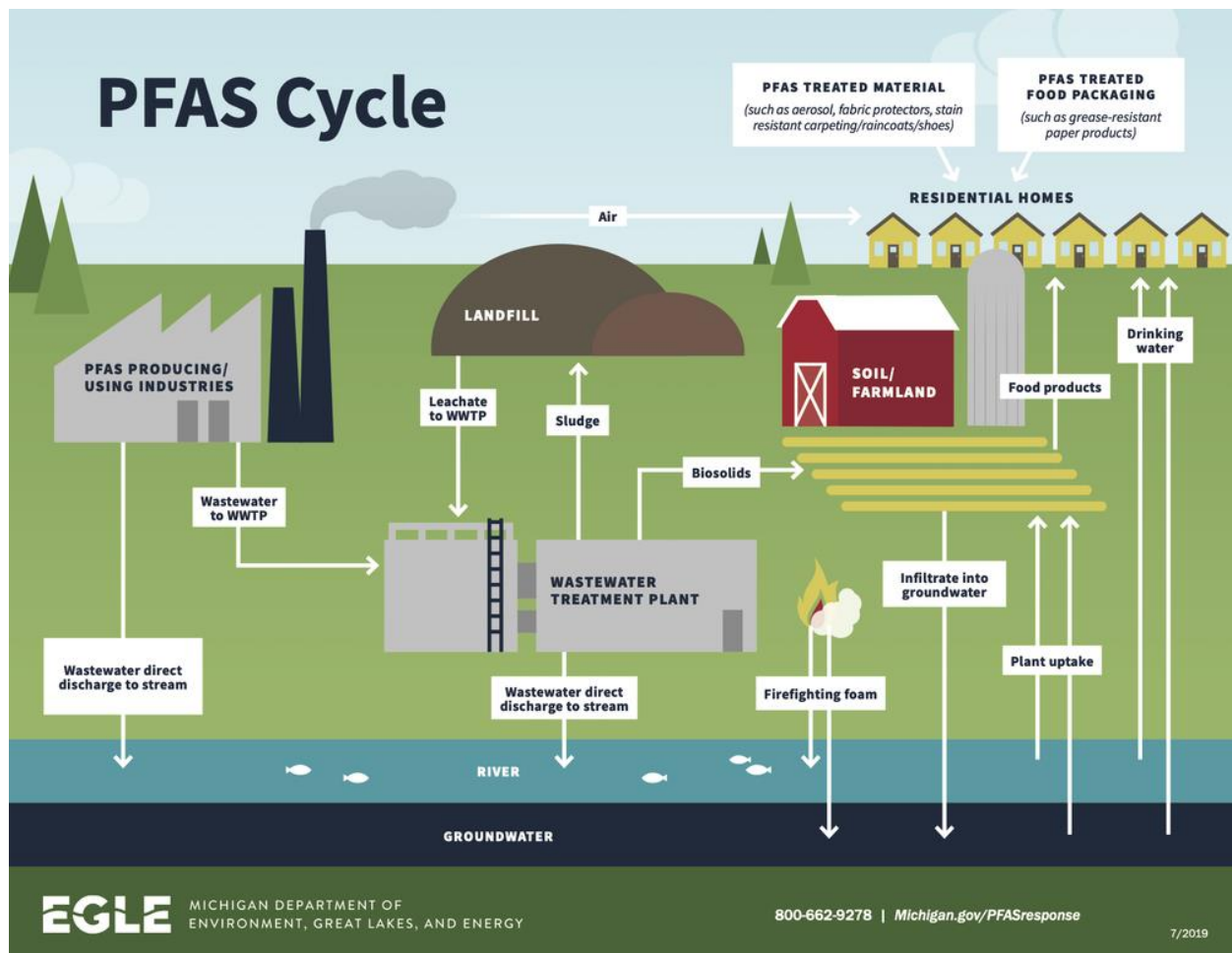
Menstrual products



Dental floss

Graphic by Friends of Casco Bay

These industrial and household items make their way to landfills, and wastewater from home, manufacturing, and landfill leachate collection is sent to wastewater treatment facilities, where PFAS chemicals can pass through treatment and enter the environment. PFAS contamination can reach a farm through the air, surface or groundwater, or land application of industrially-impacted soil amendments like biosolids, paper pulp byproducts, compost, or other materials.

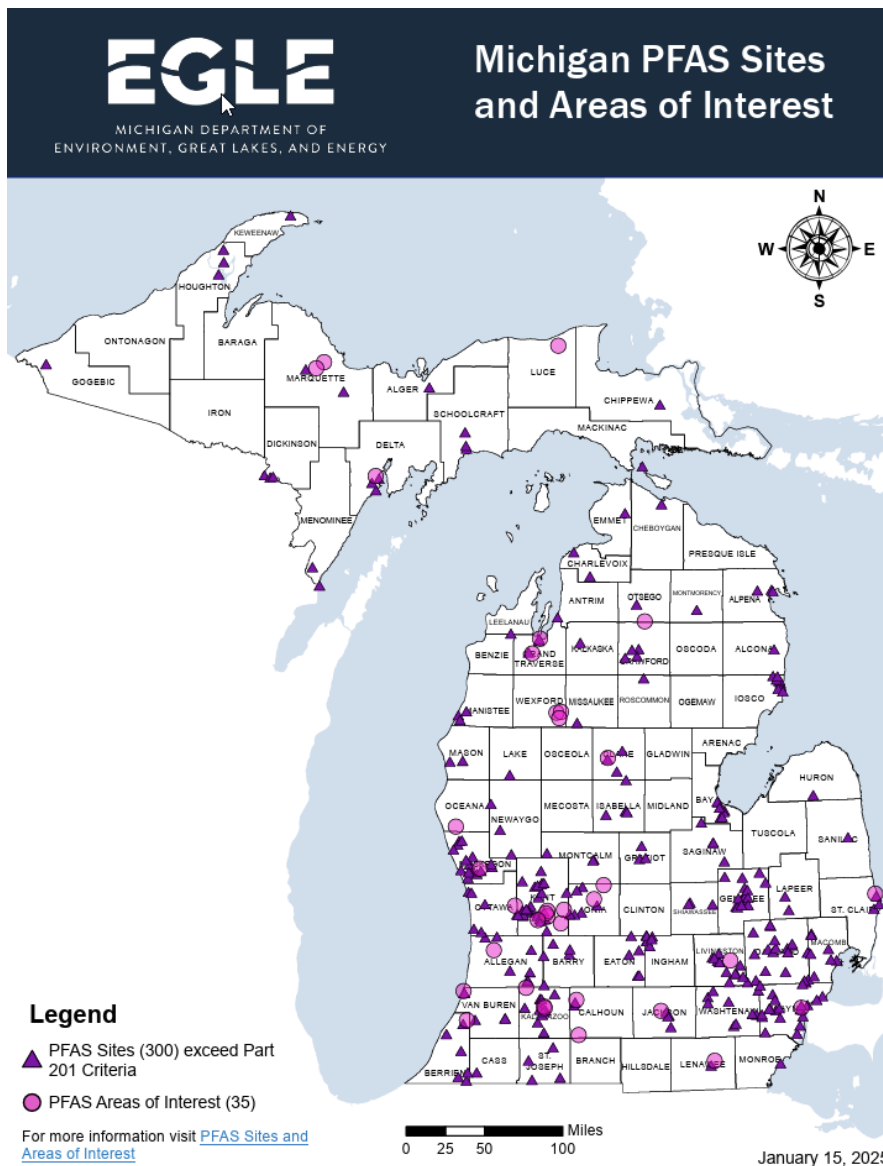


Graphic by the Michigan Department of Environment, Great Lakes, and Energy

Government actions to limit farm activities, seize farm products or designate farmland as contaminated can destroy a farmer's reputation and livelihood. Farm Bureau members have developed [MFB](#) and [AFBF](#) policy calling for science-based research to determine regulations, indemnity for land and farm products, and not holding farmers responsible for the cost of testing or cleanup of emerging contaminants when the contamination was out of the farmer's knowledge or control.

### Michigan's PFAS Actions

The State of Michigan, working through a multi-agency team, has put several actions and regulations into place to reduce PFAS exposure and protect both residents and farmers from contamination by PFAS sources:



Graphic by the Michigan Department of Environment, Great Lakes, and Energy

Surface / groundwater:

- Set Water Quality Standards for discharge and cleanup requirements
- Monitors streams, lakes, fish to alert drinking water sources and issue consumption advisories as needed

Wastewater / biosolids:

- Requires sampling for wastewater effluent and biosolids
- Requires pre-treatment for industrial wastewater customers

- Requires biosolids land appliers to provide results of biosolids sampling for PFAS to any landowner receiving those biosolids
- Land application rate must be reduced if PFAS concentration is >20 ppb, and land application is prohibited if PFAS is >100 ppb (Michigan's average biosolids PFAS concentration is 8 ppb)
- PFAS in effluent and biosolids has dropped 50-90% since 2018 thanks to these strategies
- Of dozens of farm fields tested in 2018, only 4 fields had PFAS concentrations >15 ppb

AFFF firefighting foam:

- Required phase-out for training, required reporting of AFFF use
- AFFF collection program for fire departments
- Best management practice training to reduce exposure

#### Additional Resources

[Michigan PFAS Action Response Team](#)

[EPA PFAS Strategic Roadmap](#)

[National Institutes of Health](#)

[Food and Drug Administration](#)

[MSU Center for PFAS Research](#)

[MSU Extension Resources for PFAS in Agriculture](#)