PFAS in Food Service & Facility Maintenance

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What is NEWMOA?

- Northeast Waste Management Officials'' Association
- Non-profit, non-partisan interstate association
- Solid waste, hazardous waste, waste site cleanup & pollution prevention programs
- CT, ME, MA, NH, NJ, NY, RI & VT
- Formally recognized by EPA in 1986
- www.newmoa.org

Agenda

- Brief outline of project
- What is PFAS & why do we care?
- How PFAS gets into the environment
- Information about PFAS in food service & ideas to reduce use
- Information about PFAS in facility maintenance (carpet cleaning & floor stripping & waxing) & ideas to reduce use

PFAS in Consumer Products & Food Service Project

- Focused on consumer & commercial products and the impacts of PFAS on waste streams
- Purposes:
  - Educate the public, municipalities, and businesses on PFAS in products
  - Encourage the purchase of PFAS-free alternatives
  - Promote practices that reduce environmental release
  - Not to provide information on what to do with products you might already have

USDA PFAS in Consumer Products Project

Partners: Northeast Kingdom Waste Management District (VT), VT Dept. of Environmental Conservation (DEC) & NH Dept. of Environmental Services (DES)

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Factsheets

Covering:
- Why Care about PFAS
- Clothing & Other Textiles
- Personal Care Products
- Outdoor Recreation
- Foodware & Packaging

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Outreach Events

2023:
- 6 farmers markets in ME, NH & VT

2024:
- 5 webinars for food service & others
- Site visit to nursing home
- Lyndonville, VT Street Fair

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Guide for Food Service

A Guide that shows what items might contain PFAS & how establishments may contribute to human exposure & contamination of the environment

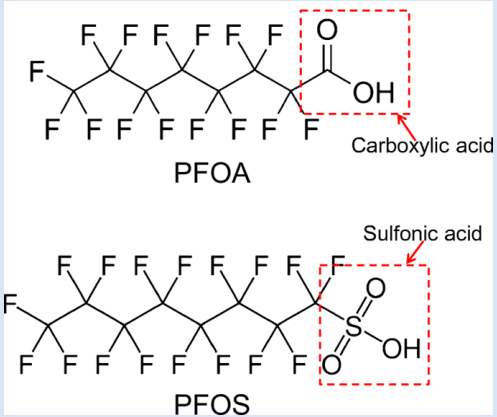
“Before” Poll Questions

Thank you for your patience!

What are PFAS?

PFAS stands for Per- and Polyfluoroalkyl substances

- A group of thousands of synthetic chemicals used in hundreds of types of products
  - Water-resistant/waterproof
  - Oil/grease resistant
  - Stain resistant
  - Resistant to friction
- Known as “forever chemicals”
- Main characteristic: Fluorine attached to Carbon
  - The number of carbons determines the length of the PFAS (C6, C8, etc.) and if it is considered a long-chain or short-chain



Most people think if something is for sale, that means it's safe…(but that's not true)

How did PFAS develop and evolve?

PFAS Development…

1930s

Teflon accidentally discovered in 1938

1940s

Teflon used in the Manhattan Project for the development of the atomic bomb

1950s

Teflon used in consumer and industrial products

1960s

Aqueous Film Forming Foam (AFFF) is developed

1961 Dupont knew of health impact on livers but took no action

…and Evolution

1970s

Use of PFAS significantly expands in different industries

2000s

Global distribution of certain PFAS

Voluntary phase out of products

Current

Increased public scrutiny

Changing regulatory climate

Lawsuit settlements

Development and use of new PFAS

https://www.kimley-horn.com/what-is-pfas/

Why are PFAS so Problematic?

The carbon-fluorine bond is NOT natural	• Created with tremendous heat and pressure • Per (fully) fluorinated PFAS do not breakdown – poly (partially) fluorinated PFAS breakdown only into the fully fluorinated portion which then doesn't change • **Accumulating all over the planet & in the blood of virtually all animals & people**
PFAS impact human & environmental health	PFAS impact the heath of humans, animals, fish and other living beings even with exposure at relatively low levels
PFAS have polluted water supplies	Public water supplies – must test for PFAS – approximately 30 in New Hampshire have exceeded current standards Private wells – can be contaminated from a variety of sources – including septic systems

PFAS were not a regulated chemicals… until recently!

PFAS Toxicity and Health Effects

PFAS are Linked to a Multiplicity of Adverse Health Effects

Reduced Immune System Function

Increased Risk of Pre-eclampsia in Pregnant Women

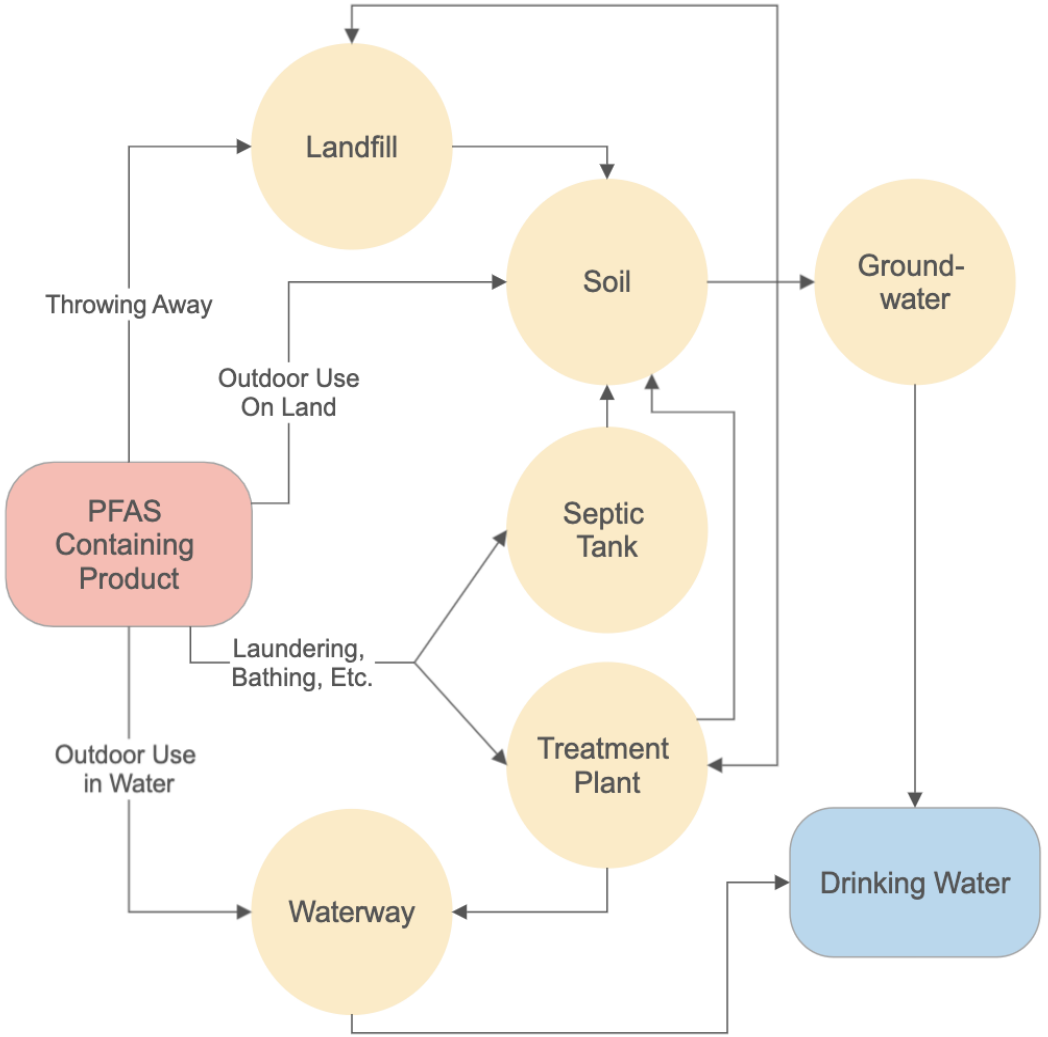
Increased Cholesterol Levels

Increased Thyroid Disorders and Other Hormone Disruption

Increased Risk of Liver, Kidney, Prostate & Testicular Cancer

How PFAS in Products Might Impact the Environment

- Remember – they do NOT breakdown – they just move around
- PFAS can get into groundwater or surface water used for drinking water & lead to significant exposure
- Note: there are other sources of environmental contamination:
  - Firefighting foam
  - Manufacturer use
  - Air deposition
- BUT – studies have shown that wastewater from homes has significant amounts



Vermont DEC Wastwater Study

In 2021, DEC worked with the City of Essex Junction and Town of Middlebury to characterize residential, commercial, and industrial PFAS sources entering their WWTFs and found:

- More PFAS, by mass, were measured in wastewater originating from residential communities than from commercial or industrial discharges in these municipalities
- Industrial facility discharges contained unique PFAS but were not a significant source of PFAS to the WWTF, accounting for < 1% of the total mass of PFAS entering the WWTF

What Products Often Contain PFAS?

Water-Resistant/Waterproof

Oil/Grease-Resistant

Stain-Resistant/Stain-proof/Stain Release

Also: Slick & Shiny &
Increase Durability

PFAS in Food Service Guide

PFAS in Food Service
Promoting Alternatives

What Are PFAS?

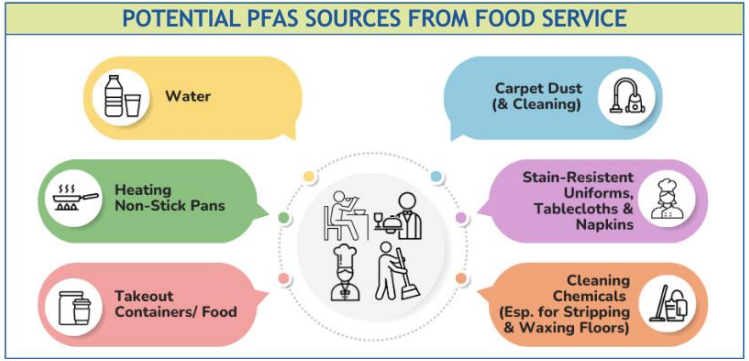
Per- and Polyfluoroalkyl Substances (PFAS) are a large group of human-made chemicals known for their heat-stable, friction-reducing, and water- and stain-resistant properties. PFAS have been added to many industrial and consumer products since the 1940s and there are thousands of different PFAS chemicals in use today. ***PFAS are frequently called "forever chemicals" because they do not breakdown and build up over time in the environment, animals, and people.***

PFAS are used in many categories of products that a food service facility might use:

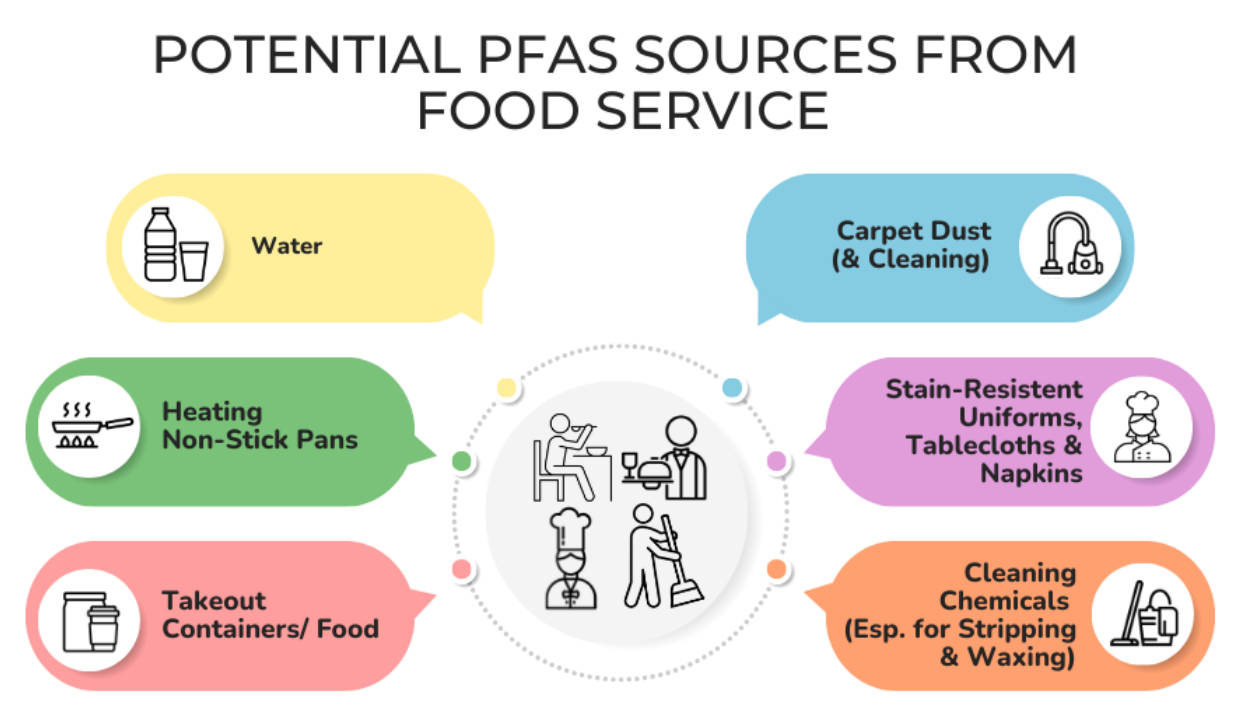
- **Food packaging** such as takeout & other disposable containers
- **Non-stick cookware**
- **Textiles** such as uniforms, tablecloths, napkins, and upholstered furniture
- **Carpets** & cleaning
- **Floor cleaning,** stripping & waxing

Each of these is discussed further in this guide.

Understanding which products are likely to contain PFAS and how to avoid buying them helps reduce worker and customer exposure and decreases the amount of PFAS entering the environment and drinking water supplies.

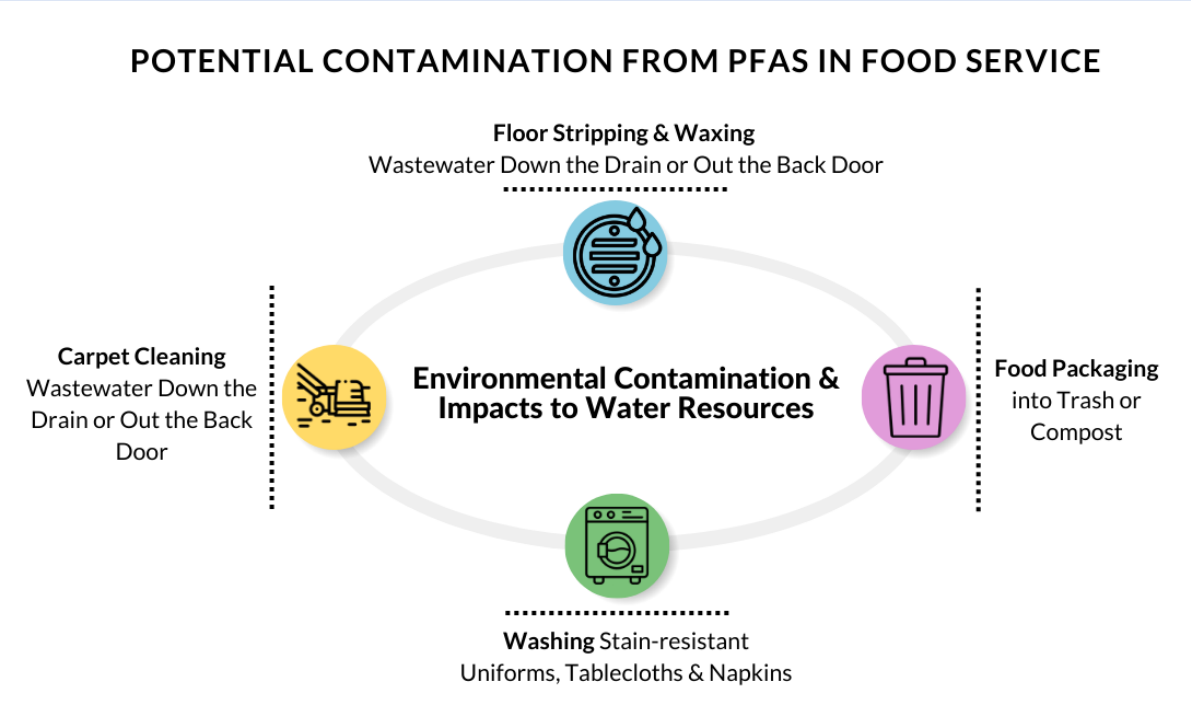


PFAS in Food Service: Potential Exposure



Understanding which products likely contain PFAS and how to avoid purchasing them helps reduce worker and consumer exposure and decrease the amount of PFAS in the environment!

PFAS in Food Service: Potential Contamination



Wastewater and trash containing PFAS can lead to potential environmental contamination that impacts water resources. Choose PFAS-free cleaning methods and reduce use of PFAS products!

Be Skeptical!

PFAS-Free Claims

Some companies state that their products are “PFC-free” or “PFOA-free” or “PFOS-free”, but such statements only cover some specific PFAS chemicals and they are likely still using different PFAS in their products. Even if a website states a product is PFAS-free that doesn’t mean it is!

Also: PFAS are considered proprietary ingredients and manufacturers often do not disclose their use

Although one particular PFAS chemical (PFOA) was banned in cookware in 2014, other PFAS including PTFE are still used

Where are PFAS in Food Packaging?

- Many disposable dinnerware and packaging items are coated in PFAS to achieve water-, oil-, and grease-resistance
  - Increase durability and appearance
- Examples of packaging that may include PFAS:
  - Food contact papers like bags, wraps & liners
  - Disposable dinnerware like plates, bowls, food boats & trays
  - Takeout containers such as pizza boxes, clamshells, paper cartons and interlocking food cartons
- PFAS can transfer from packaging to food

Note: Higher temperatures and longer durations of time can lead to greater amounts of PFAS in food

What You Can Do:

- Look for “No/Low F” Products in the list compiled by the Center for Environmental Health

- Look for GreenScreen-Certified Products

- Look for BPI-Certified Compostable Products

- If not using only BPI-Certified Products, Compost ONLY Food Waste

- Choose Reusable Containers

When Disposable is the Only Realistic Option

- Choose disposable materials that are wax-coated or truly uncoated
- Choose products that do not advertise oil-, grease-, and water-resistant claims
- Avoid disposable products that consistently test positive for PFAS such as molded fiber products and molded recycled paper products
- Avoid products with listed ingredients containing “fluoro”

PFAS in Cookware and Exposure

- PFAS can transfer from cookware to food
- Multiple disposal pathways may lead to PFAS entering the environment:
  - Scratched cookware washed in sink = PFAS discharged into water
  - Disposed in a landfill = PFAS enter the leachate
- Primary methods of human exposure:
  - Direct consumption (food)
  - Breathing vapors from overheated cookware
  - Drinking water impacted from PFAS entering environment

Note: Higher temperatures and longer durations of time can lead to greater amounts of PFAS in food

What You Can Do:

Use nonstick-free cookware

Such as stainless steel or cast-iron pots and pan

Look for GreenScreen-certified products

Greenscreen maintains a database of its certified products

If using nonstick cookware, only use low to medium heat!

Lower heat and avoiding surface scratches helps reduce the likelihood of PFAS exposures and release into the environment

PFAS in Textiles and Exposure

- Examples of textiles that may include PFAS:
  - Uniforms, tablecloths, napkins, upholstered chairs, booths & other furniture
- PFAS may enter the environment:
  - Washing textiles = PFAS discharged into wastewater
  - Disposed in a landfill = PFAS enter the leachate
- Primary methods of human exposure:
  - Drinking water impacted by wash water
  - **Breathing in and consuming dusts from treated fabrics**

Note: The potential health impact from wearing PFAS-containing clothing while sweating in the hot conditions common to foodservice kitchens is unclear and further research is required

What You Can Do:

Choose wood furniture with cushions rather than upholstered furniture

Don’t buy uniforms, tablecloths, napkins or other textiles labeled as water-, stain-, or oil-resistant

Consider replacing suspected textiles with untreated alternatives

Choose untreated natural fabrics such as cotton, hemp, or linen!

Avoid fabrics made of synthetic materials that contribute to other human health and environmental concerns such as microplastics

Bottom Line

- The best way to prevent releases to the environment & protect water supplies & human health is to stop using PFAS-containing materials
- BUT – manufacturers often do not know and/or disclose that their items do contain PFAS
- The only way to really know is to conduct analytical testing

PFAS in Facility Maintenance

Dr. Jennifer Harfmann, NH DES

“After” Poll Questions

Thank you for your cooperation!

Vermont Bans PFAS in Products

Act 36 adopted in 2021 (taking effect in 2023):

- firefighting foam
- food packaging
- ski wax
- residential carpets and rugs, and their aftermarket stain or water-resistant treatments

New Bill signed by the Governor May 30, 2024:

Taking effect in 2026:

- Clothing
- Makeup
- Menstrual & incontinence products
- Non-stick cookware

In 2028: Synthetic Turf

Thank you!

Any questions?

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