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SB273: Environment – PFAS Chemicals – Prohibitions and Requirements
George "Walter" Taylor Act
Education, Health, and Environmental Affairs Committee
January 28th, 2021
Emily Scarr, Maryland PIRG Director

FAVORABLE

Maryland PIRG is a statewide, non-partisan, non-profit, citizen-funded public interest advocacy organization with grassroots members across the state. For fifty years we've stood up to powerful interests whenever they threaten our health and safety, our financial security, or our right to fully participate in our democratic society.

We support SB273 to restrict the use and disposal of PFAS chemicals. We thank Sen. Elfreth for introducing the bill and Senators Lam, Beidle, and Bailey for co-sponsoring this important bi-partisan legislation. PFAS chemicals are polluting our waterways and drinking water and putting public health at risk.

- This bill does not ban PFAS in all uses.
- This bill is based on existing laws in other states and market trends, catching Maryland up with some of our peers in addressing this growing crisis.
- There are safer alternatives to PFAS chemicals in the products restricted in this bill.
- Our nation's leading experts on PFAS exposure have called for regulating these chemicals as a class and stopping non-essential uses because of the risks they pose to public health.

We face an uphill battle to clean up PFAS from our communities and waterways. In order to address the problem, we need to stop new contamination, which this bill can help do. In the years to come, the state will be facing challenges to address PFAS contamination through testing and remediation.

What's in the bill:

- Stops the use of PFAS in:
    - Firefighting foam
    - Food packaging
    - Rugs and carpets.
- Requires notification for PFAS in firefighting gear.
- Prevents the mass disposal of PFAS chemicals by incineration and landfilling.

The threat of "forever chemicals"

Seemingly every week we are hearing about more communities who have been exposed to dangerous levels of PFAS in their drinking water.

The Maryland Department of the Environment (MDE) found PFAS in 75% of the drinking water it has tested. We also know of contamination in and around more than a dozen military sites in the state and in Oct. 2021, MDE issued their first fish consumption advisory for PFAS in Piscataway Creek leading to Prince George's County filing suit against chemical manufacturers 3M and DuPont. Independent testing has also found alarming levels of PFAS in water and seafood.

Last month, Maryland PIRG Foundation released a report, *The Threat of "Forever Chemicals,"* which outlines known contamination in Maryland, impacts, and potential state actions.

PFAS are still widespread in both production and use. Safeguarding against PFAS chemicals as a class is the best way to protect human health. Trying to regulate one chemical at a time will only leave us in an endless game of whack-a-mole. Marylanders deserve the same public health protections from PFAS that we see in other states. Maryland firefighters shouldn't have to suffer and die from exposure to toxic chemicals, especially when there are safer alternatives.

In addition to supporting this critical legislation, we hope the legislature will take further action on PFAS. We need to ensure Maryland has the legal framework to hold polluting industries accountable for the pollution they produce and the harm they cause, we need robust water testing to identify the extent of the problem, and we need to clean up contamination where it exists.

Firefighting

In particular, the use of firefighting foams containing PFAS, no longer makes sense. PFAS foam puts our water at risk. It also endangers our firefighters, who are at increased cancer risk due to exposure to PFAS. **In fact, cancer is the leading cause of death among firefighters in the United States,** according to the Firefighter Cancer Support Network and the International Association of Fire Fighters.

There are already safer alternatives to PFAS foam on the market. Six states (WA, CA, CO, NH, NY, VT), the U.S. Military and the EU are already moving away from using PFAS fire fighting foam completely. Congress has directed the Department of Defense to end the use of firefighting foam containing PFAS by 2024, and to immediately quit using it during training exercises.

Multiple states (including CA, CO, NY) have laws on the books which include a provision to require notification for firefighting personal protective equipment (PPE) that contains PFAS.

Food Packaging

- A 2017 study found grease-proof PFAS coatings on 46% of food-contact papers (such as hamburger wrappers) and 20% of paperboard samples (such as french fry boxes) collected from fast food restaurants throughout the United States.
- 7 states have restricted PFAS in food packaging and due to public demand, major retailers are eliminating PFAS from key product lines. But there are laggards in the market. In order to ensure we protect the public it is time for state action.
- Grocery chains including Giant, Whole Foods, Trader Joe's, Food Lion, Stop & Shop, Amazon, and Hannaford's have all committed to eliminating PFAS from their packaging.
- Fast food chains McDonald's, Burger King, Chipotle, Taco Bell, Panera, Wendy's, and Sweetgreen have all made commitments to phase out PFAS food packaging, and testing has confirmed that PFAS use is not universal in fast food food packaging.
- As of November 2021,18 retailers selling food or food packaging have announced steps to reduce or eliminate PFAS in food packaging at their more than 77,000 stores.

Rugs and Carpets

- A 2008 report from the Ecology Center found PFAS in half of the carpet samples tested.
- Since that time, Shaw Industries, the largest carpet manufacturer in the world and Interface, the largest commercial carpet manufacturer in the world, both stopped using PFAS. Lowe's has stopped selling residential carpets containing PFAS, and Home Depot has stopped selling both residential and commercial wall-to-wall carpets that contain PFAS chemicals. Indications are that much of the carpet and rug industry has moved away from PFAS, though some is still found. Green Science Policy Institute has published a list of carpet manufacturers that are PFAS-free

- Significant progress has been made on aftermarket treatments as well as upholstery. California's Department of Toxics Substances Control has found that aftermarket treatments are "significant sources of human and ecological PFAS exposures," and has done some work on identifying safer alternatives.
- In 2021 Maine and Vermont passed laws to ban PFAS in carpets, rugs and aftermarket treatments. Washington has identified PFAS in carpets, rug, leather and textile furnishings, and aftermarket treatments as priority products under its new Safer Products law in order to pursue restrictions. California has declared carpets and rugs containing PFAS as priority products under its Safer Consumer Products law.

Incineration and Landfilling

- EPA notes that disposing of PFAS in **landfills** has many unknowns, such as how the waste will interact with landfill liners and the possibility of chemicals escaping into the environment.
- Though high temperatures potentially can destroy PFAS, EPA notes that more research is needed to understand the environmental impacts of this approach. Incomplete destruction could create byproducts that might be chemicals of concern, which would cause concentrated harm on communities near incinerators.
- Given that all currently available disposal and destruction options involve a large degree of uncertainty about how much environmental and health protection they provide, **the best approach is to securely store PFAS and PFAS-containing substances.**

Maryland PIRG
Audubon Naturalist Society
Blue Water Baltimore
CCAN Action Fund
Chesapeake Bay Foundation
Clean Water Action
Climate Exchange
Climate Law and Policy Project
Environmental Justice Ministry of Cedar Lane Unitarian Universalist Church
Environment Maryland
Food and Water Watch
Greenbelt Climate Action Network
Interfaith Partners for the Chesapeake
League of Women Voters of Maryland
Maryland Campaign for Environmental Human Rights
Maryland Climate Justice Wing
Maryland League of Conservation Voters
Maryland Legislative Coalition
Maryland Pesticides Education Network
Maryland Public Health Association
Natural Resources Defense Council
Public Employees for Environmental Responsibility
ShoreRivers
Strong Future Maryland
Takoma Park Mobilization Environment Committee
Unitarian Universalist Legislative Ministry of Maryland
Waterkeepers Chesapeake
WISE

Additional information on the next page.

ADDITIONAL BACKGROUND AND FACTS

Video Clip from Bloomberg News

PFAS are harmful to public health. Even low levels of exposure to PFAS are linked to a range of health damages, including:

- Harm to the kidneys, leading to chronic kidney disease or kidney cancer,[1]
- Reduced antibody responses to vaccinations in both children and adults,[2] and
- Increased risk of gestational diabetes, preeclampsia, low birth weight and childhood obesity

Newer types of PFAS are no safer for human health and the environment than older PFAS, such as PFOA and PFOS.[3]

- New PFAS travel more easily through water, resulting in widespread exposure, and thus may pose more risks to human and environmental health.[4]
- The U.S. Environmental Protection Agency has found that two newer PFAS chemicals create many of the same health impacts as older PFAS.[5]
- EPA determined the toxicity of the PFAS known as GenX is in the same range as PFOA, the legacy PFAS it replaced.[6]
- Hundreds of public health experts around the globe have expressed concern about the health impacts of continuing to produce and use all varieties of PFAS.[7]

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[1] Kidney disease: Anoop Shankar, Jie Xiao, and Alan Ducatman, "Perfluoroalkyl chemicals and chronic kidney disease in US adults," American Journal of Epidemiology, 174(8), DOI: 10.1093/aje/kwr171, 26 August 2011, archived at http://web.archive.org/web/20210311183344/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3218627/; Kidney cancer: DCEG Staff, National Cancer Institute, Environmental Pollutant, PFOA, Associated with Increased Risk of Kidney Cancer, 20 September 2020, archived at http://web.archive.org/web/20210725190158/https://dceg.cancer.gov/news-events/news/2020/pfoa-kidney.

[2] Philippe Grandjean et al., "Estimated exposures to perfluorinated compounds in infancy predict attenuated vaccine antibody concentrations at age 5-years," Journal of Immunotoxicology, 14(1), DOI: 10.1080/1547691X.2017.1360968, 2017, archived at http://web.archive.org/web/20210606181809/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6190594/; Claire Looker et al., "Influenza vaccine response in adults exposed to perfluorooctanoate and perfluorooctanesulfonate," Toxicological Sciences, 128(1), DOI: 10.1093/toxsci/kft269, March 2014, archived at http://web.archive.org/web/20210220220028/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4724206/.

[3] Anna Reade, Natural Resources Defense Council, The Scientific Basis for Managing PFAS as a Chemical Class (blog), 30 June 2020, archived at https://web.archive.org/web/20210514051247/https://www.nrdc.org/experts/anna-reade/scientific-basismanaging-pfas-chemical-class.

[4] Fan Li et al., "Short-chain per- and polyfluoralkyl substances in aquatic systems: occurrence, impacts and treatment," Chemical Engineering Journal, 15 January 2020, https://doi. org/10.1016/j.cej.2019.122506, available at https:// www.sciencedirect.com/science/article/abs/pii/S1385894719319096.

[5] Anna Reade, Natural Resources Defense Council, EPA Finds Replacements for Toxic "Teflon" Chemicals Toxic, 15 November 2018, archived at https:// web.archive.org/web/20211002204550/https://www. nrdc.org/experts/anna-reade/epa-finds-replacementstoxic-teflon-chemicals-are-also.

[6] Ibid.; U.S. Environmental Protection Agency, Fact Sheet: Human Health Toxicity Assessment for GenX Chemicals, October 2021, archived at https://web.archive.org/web/20211025194029/https://www.epa.gov/system/files/documents/2021-10/genx-final-toxassessment-general_factsheet-2021.pdf.

[7] Arlene Blum et al., "The Madrid statement on poly- and perfluoroalkyl substances, (PFASs)," Environmental Health Perspectives, 123(5), 1 May 2015, DOI: https://doi.org/10.1289/ehp.1509934.

Many drinking water sources in Maryland are contaminated with PFAS. In late 2019, the Maryland Department of the Environment (MDE) tested for contamination from legacy PFAS at water treatment plants that provide drinking water to 70% of Maryland's population.[8]

- Approximately 75% of the samples had quantifiable levels of PFOA and PFOS.[9]
- The two highest readings were from Westminster and Hampstead, both in Carroll County.[10]
- Testing by the U.S. Department of Defense has found PFAS in drinking water at or near a dozen military facilities in Maryland[11]

PFAS also contaminate groundwater and seafood in Maryland. PFAS contamination at military sites in Maryland often is traceable to the use of firefighting foam.[12] PFAS from firefighting foam have leached into shallow groundwater, potentially flowing from there into nearby rivers and streams.

- PFAS contamination has been found in groundwater at eight military facilities in six counties in Maryland.[13]
- Testing found nine different types of PFAS in striped bass, crabs and oysters from the Potomac River and St. Inigoes Creek in southern Maryland.[14]
- MDE has detected PFAS in three species of fish from Piscataway Creek, a tributary of the Potomac River in Prince George's County, and has warned people to limit their intake of particular species caught in the creek.[15]

How PFAS enter our bodies

- **CONTAMINATED WATER:** Drinking water contaminated with PFAS is one of the most common exposure routes.[16]
- **WORKPLACE EXPOSURE:** Workers who make products with PFAS and military personnel or firefighters who work with firefighting foam may be particularly at risk for exposure.[17] For example, these individuals may inhale or swallow PFAS-contaminated dust.[18] They may also absorb PFAS through their skin.[19]

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[8] Maryland Department of the Environment, Understanding the Occurrence of Per- and Polyfluoroalkyl Substances (PFAS) in Maryland's Public Drinking Water Sources, accessed 7 September 2021, archived at http://web.archive.org/web/20210720143939/https://mde.maryland.gov/programs/Water/water_supply/Documents/PFAS_Public_Water_System_StudyPhase1Report.pdf.

[9] Ibid., p. 4.

[10] Ibid., p. 4.

[11] Environmental Work Group, PFAS Contamination Map, 6 January 2021, available at https:// www.ewg.org/interactive-maps/pfas_contamination/ map/.

[12] Naval Air Station Patuxent River Restoration Advisory Board, PFAS Update: Naval Air Station Patuxent River and Webster Outlying Field, 28 April 2021, available at https://www.navfac.navy.mil/content/dam/navfac/Environmental/PDFs/env_restoration/nas_patuxent_river/NAS_Patuxent_River_RAB_Presentation_202104.pdf, p. 9.

[13] Maryland Department of the Environment, Public Health: Maryland and PFAS, accessed 7 September 2021, archived at http://web.archive.org/web/20210815110952/https://mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx.

[14] Public Employees for Environmental Responsibility, More PFAS Found in Maryland Water and Seafood, 16 November 2020, archived at http://web.archive.org/web/20210812170801/https://www.peer. org/more-pfas-found-in-maryland-water-and-seafood/.

[15] Maryland Department of the Environment, Department of the Environment Issues First Fish Consumption Advisory for PFAS (press release), 15 October 2021, archived at https://web.archive.org/web/20211018005323/https://news.maryland.gov/mde/2021/10/15/department-of-the-environmentissues-first-fish-consumption-advisory-for-pfas/; Christine Condon, "Maryland issues first fish consumption advisory because of PFAS," Baltimore Sun, 17 October 2021, archived at https://web.archive.org/web/20211017170318/https://www.baltimoresun.com/news/environment/bs-md-pfas-fishconsumption-advisory-piscataway-creek-potomacriver-20211017-2lvrssyyfrggxjledgo3bl53me-story.html.

[16] Earth Justice, Breaking Down Toxic PFAS, 9 October 2020, archived at http://web.archive.org/web/20210904011701/https://earthjustice.org/features/breaking-down-toxic-pfas.

[17] Agency for Toxic Substances and Disease Registry, Per- and Polyfluoroalkyl Substances (PFAS) and Your Health, 24 June 2020, archived at http:// web.archive.org/web/20210904174204/https://www. atsdr.cdc.gov/pfas/health-effects/exposure.html.

[18] Ibid.

[19] .Somrutai Poothong et al., "Multiple pathways of human exposure to poly- and perfluoroalkyl substances (PFASs): From external exposure to human blood," Environment International, January 2020, DOI: https://doi. org/10.1016/j.envint.2019.105244.

- **CONSUMER PRODUCTS:** People can be exposed to PFAS through a variety of consumer products. PFAS migrate from consumer products, resulting in toxic exposure. As stain-resistant furniture and carpets and waterproof clothing break down, they produce dust that can be inhaled or swallowed.[20]
- **CONTAMINATED FOOD:** Food may be contaminated with PFAS if it is raised in contaminated soil, fertilized with contaminated sewage sludge, or irrigated with contaminated water.[21] PFAS have been found in fish, shellfish, meat, eggs, milk, fruits and vegetables.[22] Processing equipment and packaging that contain PFAS may also add PFAS to food.[23] One analysis of fast food packaging in the U.S. found that 46% of paper used to package food (for example, to wrap hamburgers) and 20% of paperboard (such as for french fry boxes) contained PFAS.[24]
- **EXPOSURE IN UTERO OR THROUGH BREASTMILK:** Babies can be exposed to PFAS before they are born, if the mother has been exposed to PFAS. Infants may be exposed to PFAS through their mother's breast milk.[25] For example, a 2021 study found PFAS in all breastmilk samples collected from 50 nursing mothers in the U.S.[26]

[20] Sam Hall, Duke, Nicholas School of the Environment, PFAS Found in NC House Dust, 3 December 2020, archived at https://web.archive.org/web/20211111052347/https://sites.nicholas.duke.edu/ pfas/research-published-on-pfas-in-dust/.

[21] Soil, water: See note 21; sludge: Kevin Miller, "State investigating 'very startling' levels of PFAS chemicals on central Maine dairy farm," Press Herald, 29 July 2020, archived at https://web.archive.org/web/20210817155445/https://www.pressherald.com/2020/07/24/state-investigating-very-startlinglevels-of-pfas-chemicals-on-central-maine-dairyfarm/

[22] Carol F. Kwiatkowski et al., "Scientific basis for managing PFAS as a chemical class," Environmental Science and Technology Letters, 7(8), DOI: https://doi.org/10.1021/acs.estlett.0c00255, 30 June 2020, archived at http://web.archive. org/web/20210904152440/https://pubs.acs.org/doi/10.1021/acs.estlett.0c00255.

[23] Food and Drug Administration, Question and Answers on PFAS in Food, 26 August 2021, archived at https://web.archive.org/web/20210911034206/https://www.fda.gov/food/ chemical-contaminants-food/questions-andanswers-pfas-food; EPA, Basic Information on PFAS, 8 April 2021, archived at http://web.archive.org/ web/20210905042523/https://www.epa.gov/pfas/ basic-information-pfas.

[24] Laura Schaider et al., "Fluorinated compounds in U.S. fast food packaging," Environmental Science & Technology Letters 4(3):105- 111, DOI: 10.1021/acs.estlett.6b00435, 2017, archived at https://web.archive.org/web/20210404110457/ https://pubmed.ncbi.nlm.nih.gov/30148183/.

[25] Ulla B. Mogensen et al., "Breastfeeding as an exposure pathway for perfluorinated alkylates," Environmental Science and Technology, 49(17), DOI: https://doi.org/10.1021/acs.est.5b02237, 20 August 2015, archived at https://pubs.acs.org/doi/ abs/10.1021/acs.est.5b02237.

[26] Guomao Zheng et al., "Per- and polyfluoroalkyl substances (PFAS) in breast milk: concerning trends for current-use PFAS," Environmental Science & Technology 55(11):7510-7520, DOI: https://doi.org/10.1021/acs.est.0c06978, 13 May 2021, available at https://pubs.acs.org/doi/10.1021/acs.est.0c06978