SB158 - PFAS in Pesticides Testimony.pdf
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BALTIMORE JEWISH COUNCIL

WRITTEN TESTIMONY

Senate Bill 158 - Pesticide Registration - PFAS Testing - Requirements
Education, Energy, and the Environment Committee
February 2, 2023

SUPPORT

Background: SB158 would phase out the use of pesticides in Maryland that contain PFAS, per- or polyfluoroalkyl substances. Exposure to these "forever chemicals" may lead to serious health impacts. This bill would require all manufacturers of mosquito control products in the state to provide annual independent lab testing and lab certification to document that the pesticide is PFAS-free, beginning January 1, 2024. As of January 1, 2026, manufacturers of all pesticides must provide this same testing to prove the pesticide is PFAS-free.

Written Comments: The Jewish concept of *tikkun olam* means to repair the world in which we live. Furthermore, Jewish law clearly states that we are not to destroy the public domain, meaning our beautiful State. SB158 falls perfectly in line with these two principles. If passed, this bill would reduce the number of PFAS contaminants in our air, water, and soil, making Maryland safer and healthier for all.

The Baltimore Jewish Council and its faith-based members are committed to the practice of *tikkun olam*. As the advocacy arm of The Associated: Jewish Federation of Baltimore, we represent organizations that work to educate the community on sustainability and make strides towards repairing the world. One of these entities is *The Pearlstone Center* in Reisterstown, MD, a conference center and farm that employs and teaches sustainable practices. This bill will directly support the mission of this establishment, by ensuring that the practices at their facility are free from harmful, PFAS-contaminated pesticides.

We encourage this committee to take a major step towards repairing our world and making us a national leader in sustainability. **The Baltimore Jewish Council urges a favorable report of SB158.**

The Baltimore Jewish Council, a coalition of central Maryland Jewish organizations and congregations, advocates at all levels of government, on a variety of social welfare, economic and religious concerns, to protect and promote the interests of The Associated Jewish Community Federation of Baltimore, its agencies and the Greater Baltimore Jewish community.

BALTIMORE JEWISH COUNCIL
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Member of the Jewish Council for Public Affairs

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Position: FAV

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January 30, 2023

FAVORABLE Report – SENATE BILL 0158: Pesticide Regulation – PFAS Testing – Requirements

Dear Chairperson and Members of the Committee,

We are writing in strong support of **SB0158** on behalf of Waterkeepers Chesapeake, a coalition of seventeen Waterkeepers, Riverkeepers, and Coastkeepers working to make the waters of the Chesapeake and Coastal Bays swimmable and fishable. As we at Waterkeepers work to protect and maintain the ability of the public to safely enjoy the waters of our State, we are also in support of restricting the use of PFAS, a class of chemicals that the Environmental Protection Agency says can cause harmful health effects in humans. PFAS chemicals are man-made chemicals that don't break down in the environment or in our bodies, earning them the nickname "forever chemicals." They have been linked to negative health impacts including cancer and reproductive problems. These chemicals have made their way into our drinking water, the Chesapeake Bay and its tributaries, the soil, our food, and consequently, our bodies.

Waterkeepers Chesapeake believe this bill is important in the race against preventing further PFAS contamination to our local waterways and land. On the Clean Water Act's 50th Anniversary on October 18, 2022, Waterkeeper Alliance released *Invisible, Unbreakable, Unnatural*, a groundbreaking new analysis of American waterways that sounds the alarm on a PFAS pollution emergency. In the Chesapeake Bay region, 16 local Waterkeepers took 39 samples from rivers and streams. In 100% of the samples, levels of PFAS were found. To make matters worse, the level for PFOA and PFOS detected in this study is significantly higher than EPA's Drinking Water Health Advisory Limits for those substances. Requiring all manufacturers of pesticides in the

state to provide annual independent lab testing and certification to document that their pesticide is PFAS-free would be a major step towards protecting our waterways. Currently, the EPA has not addressed the critical issues of PFAS intentionally added to pesticides by manufacturers or of PFAS contamination of pesticides from fluorinated containers. Maryland must take action at the state level to protect the health of Maryland residents and the environment amidst this emerging crisis.

Waterkeepers Chesapeake supports this bill and its expressed goals. By preventing the harmful use of PFAS in pesticides, the state can show its priorities are with protecting communities and the environment, as opposed to the chemical industry. Therefore, we believe these requirements would properly be carried out under **SB0158** in order to establish criteria to ensure appropriate testing and regulation of pesticide products to better protect all Marylanders' health, adults—especially pregnant women—and children.

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Testimony: SB 158: Pesticide Registration – PFAS Testing – Requirements

Submitted to: The Senate Committee on Education, Energy, and the Environment (EEE)
Submitted by: The Smart on Pesticides Coalition of 112 organizations and businesses
Position: In Support

February 2, 2023

Dear Chair Feldman, Vice Chair Kagan and Members of the Committee,

The Maryland Pesticide Education Network and its **Smart on Pesticides Coalition** comprised of 112 organizations and businesses**,** support passage of SB 158 banning all sales and uses of PFAS-containing pesticides in Maryland. We are a non-profit organization dedicated to protecting the public and the environment from toxic pesticides and promoting healthy alternatives.

- **PFAS exposures (*per* and *polyfluoroalkyl substances)* are linked to serious long-term health impacts for all life, even at low levels of exposure.**

- **PFAS are called the "forever chemicals" because like DDT, lead, and ozone** they continue to be alarmingly harmful for extremely prolonged periods and pose serious harm for generations to come — unless PFAS are addressed with long-term strategies to overcome their harmful impacts. PFAS is a class of chemicals and while only 1,000 are used commercially, there over 12,000 that have been identified.
- **Recently, there has been welcome good news regarding the Earth's fragile ozone layer**: Phasing out harmful ozone-depleting chemicals has led to the partial recovery of the ozone hole. And we have reduced lead levels in Maryland, thanks to needed state laws and policies. Problems that once seemed insurmountable are now, due to wise leaders acting, are increasingly becoming success stories. Decades of hard work curbing these harmful chemicals has led to improvements in our environment and hope for better public health.
  - ❖ **We need to tackle PFAS in pesticides with a similar strategy.**

> ***"If the intent was to spread PFAS contamination across the globe there would be few more effective methods than lacing pesticides with PFAS,"*** PEER Science Policy Director Kyla Bennett, and former EPA attorney

Maryland annually registers about 14,000 pesticides for sales and use in our state. To date, we have little knowledge regarding the number of these pesticides which contain PFAS, however increasing scientific evidence suggests that many do.

Consider this:

- **EPA's lifetime safe level for the most notorious PFAS, PFOS, in drinking water is 0.02 parts per trillion (ppt).** New research found extraordinary high levels of this PFAS in common pesticides used on food crops, in the millions parts per trillion; **the crops grown in these fields tested ten thousand times higher than EPA's lifetime drinking water limit of 0.02 parts per trillion**.
  - ❖ This **recent study** in the Journal of Hazardous Materials Letters, found PFAS in 6 out of 10 **tested pesticides at levels ranging from 4 million to 19 million ppt.** Based on the 6 PFAS-contaminated pesticides tested, Maryland registers 346 pesticides products containing these active ingredients, amplifying concern similar products registered in Maryland may also contain PFAS.

- **Other recent research shows dangerous levels of toxic PFAS in freshwater fish**: Eating just one Maryland rockfish could be equivalent to drinking PFAS-tainted water for a month. Keep in mind, these numbers are for a single exposure; we may be eating tainted food every day and it accumulates in our bodies.
- **PFAS are considered "forever chemicals" because they remain in our bodies for years**. Given our ongoing cumulative exposures to PFAS they remain present in our bodies.
- **To date, there is no research on the synergistic effects of combining PFAS with pesticides**. Pesticides and PFAS each are already known to have long-term adverse health impacts which raises serious alarm bell for public health experts.
- **Pesticides do not require PFAS to be effective** as noted by two mosquito control product samples tested by EPA used by the Maryland Dept. of Agriculture (MDA) in Maryland. There are alternative additives to PFAS for increasing delivery impacts of pesticides.

Encouraging news

3M a global chemical manufacturer of PFAS recently announced its plans to terminate production of PFAS by 2025. Market shifts like this are welcome and crucial but must be accompanied by state-level policy changes to protect all life from further harm. While eliminating exposure to PFAS appears to be a daunting task, we can make a difference by eliminating a significant unnecessary source of PFAS exposure in our state and fill the void left by federal regulators who have so far failed to address this crucial issue.

Last year, Maryland legislators wisely took a crucial first step to do so by banning PFAS in firefighting foam, food packaging, carpets, and rugs.

Similar to other toxic chemicals that cause dangerous health impacts such as lead, asbestos, and the pesticide DDT, the first step is identifying the problem. As with these overwhelming issues we have conquered, once identified, the solutions were evasive, and the threat seemed insurmountable. This is where we are with PFAS. The issue and even the solutions have been scientifically clarified. The time is now for addressing the solutions.

Why more PFAS use guardrails are needed

PFAS exposure through pesticides presents a broader risk to Marylanders and our environment than common household items because pesticides are so pervasive. There are 14,000 of pesticides used in Maryland, and they are everywhere.

- Everyone is subjected to pesticides where we work and play – in public spaces, healthcare facilities, schools, and our neighborhoods.
- Scientists in multiple labs have found dangerous levels of PFAS in commonly used pesticides across the country. *A recent study in the Journal of Hazardous Materials Letters, "Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS," found extremely high levels of PFAS) in 6 out of 10 tested*

PFAS in pesticides is an Environmental Justice issue

Maryland's overburdened and underserved communities are at even greater risk from PFAS in pesticides.

- Farmworkers and families in agricultural areas bear greater exposures from pesticides applied in farming.
- Those living in poverty are more likely to fish to supplement protein, yet USGS has reported Maryland fish are testing with PFAS at levels as high as 500,000 parts per trillion.
- People of color are more likely to be harmed; pesticide use against rodent and cockroaches is often higher in lower-income housing due to age of buildings, poor maintenance and often crowded living conditions.

Background on finding PFAS in pesticides used in Maryland

- **In 2021, PFAS were found at notably toxic levels in pesticides used** by the Maryland Department of Agriculture (MDA) **annually for mosquito control in over 2,000 Maryland communities.** One product MDA notes on its program webpage, Mavrik Perimeter, was found by the Massachusetts Dept. of the Environment to contain 16,703 ppt. Once again, compare this number to EPA's *lifetime* exposure for PFAS in drinking water: 0.02 ppt.

- While there is research underway to extract PFAS from water, there is still no way to dispose of the extracted *forever* chemical**.**

These chemicals have made their way into our drinking water, the Chesapeake Bay and its tributaries, the soil, our food, and consequently, our bodies.

Scientists have provided notable evidence that both pesticides and PFAS runoff into Maryland waterways. PFAS-containing pesticides clearly add to this toxic mix from which we and our children swim, eat fish, and drink, as when communities draw their water from Maryland's Potomac and Patuxent rivers.

Human health impacts

- PFAS are linked to serious health impacts even at low levels of exposure. There is strong evidence linking PFAS to kidney, testicular, prostate, and breast cancer, birth defects and developmental damage in infants, childhood obesity, thyroid disease, high cholesterol, non-alcoholic fatty liver disease, and impaired immune function.
- Exposure to PFAS has been associated with increased COVID-19 susceptibility and with an increased risk of more severe outcomes from the disease
- Synthetic pyrethroid pesticides used in our state for mosquito control and PFAS chemicals can both act as endocrine disruptors, meaning they can interfere with people's hormone systems—which can result in serious health complications. This presents a public health threat of serious magnitude. Furthermore, the effects of combining two endocrine disrupting chemicals have yet to be studied.

Other species health impacts

- Science has shown PFAS is causing harm to fish and wildlife, including pollinating bees and birds.
- Maryland has found alarming levels of PFAS in Bay waters, tributaries, and fish. These were so high that the Maryland Department of the Environment issued a warning against eating three fish species caught in Piscataway Creek in Prince Georges County.
  - New research shows dangerous levels of toxic PFAS in freshwater fish. "You'd have to drink an incredible amount of water — we estimate a month of contaminated water — to get the same exposure as you would from a single serving of freshwater fish," – *study co-author David Andrews*

The solution

SB 158 ensures that independent lab testing, considered to be **valid methodologies for testing pesticides for PFAS, by EPA or MDE as is the case with the methods in the bill,** and **paid for by the manufacturer**, will identify pesticides that are PFAS-free for sales and use in Maryland. *All* pesticides, including those considered minimum risk (25B category), must be annually tested. **It is on both the lab and the manufacturer to provide truthful lab-tested evidence**. Scientists, including Drs. Peaslee and Lassee (see their written testimony) have used such tests in their research related to PFAS in pesticides. While in all lab testing, including blood testing done by labs for various health conditions, a result can be a false positive or false negative, we all have the option of redoing testing when findings are unclear. So too, can a manufacturer have a product retested if there is any doubt regarding the results. While we live in an imperfect word, **we must still do our very best to use the tools we** have to protect our babies, bees, and the Bay.

It's time to turn off the tap

- **SB 158 addresses the need to stop the use of pesticide-containing PFAS chemicals** in our communities and is a critical step for states in order to fill the void left by federal regulators. Maine recently banned pesticides containing PFAS and other states are proposing to do so.
- SB158 prohibits all sales and use of pesticides that contain PFAS by 2026 in Maryland.
- Maryland residents need this immediate protection from unnecessary PFAS exposures through pesticides and the food we consume.
- This bill would not cost Maryland—the multi-billion-dollar manufacturers would be responsible for paying for the testing.

We urge a positive report on SB 158.

Smart On Pesticides Coalition Members

The Smart on Pesticides Maryland Campaign is a coalition of 112 concerned Maryland citizens, organizations, groups, and businesses working for better protections and data to keep our families, our waterways, and our wildlife safe from toxic pesticides.

A.I.R. Lawncare & Landscaping Services
Alliance of Nurses for a Healthy Environment
American Academy of Pediatrics – Md. Chapter
American Bird Conservancy
American Public Health Association – Md. Chapter
Anacostia Watershed Society
Annapolis Green
Anne Arundel Beekeepers Association
Arundel Rivers Foundation
Assateague Coastal Trust
Audubon Maryland – DC
Audubon Naturalist Society
Baltimore Backyard Beekeepers Network
Baltimore Bird Club
Bee Friendly Apiary
Beyond Pesticides
Big City Farms
Bowie-Upper Marlboro Beekeepers Association
CATA, Farmworkers Support Committee
Carroll County Beekeepers Association
Cecil Bird Club
Center for Biological Diversity
Center for Food Safety
Central Maryland Beekeepers Association
Central Maryland Ecumenical Council/Ecumenical Leaders Group
Centro de los Derechos del Migrante
Charm City Meadworks
Charles Smith Apiaries
Chesapeake Physicians for Social Responsibility
Children's Environmental Health Network
Clean Bread and Cheese Creek
Clean Water Action
Common Market Co-Op
Conservation Community Consulting
Cottingham Farm
Crossroads Community Food Network
Earth Coalition
Earthjustice
Eastern Shore Food Hub
Environment Maryland
Fair Farms
F&D Apiaries
Farmworker Justice
Food and Water Watch
Fox Haven Farm and Learning Center
Frederick County Beekeepers Association
Friends of Briers Mill Run
Friends of Lower Beaverdam Creek
Friends of Quincy Run
Friends of the Earth
Greenbelt Forest Preserve Butterfly Brigade
Heathcote – School of Living
Hampden Community Council
Hereford Bed & Biscuit
HoneyFlower Foods
Howard County Beekeepers Association
Howard County Bird Club
Interfaith Partners of the Chesapeake
Interfaith Power and Light
Johns Hopkins Center for a Livable Future
Karma.Farm
KW Landscaping
Latino Farmers & Ranchers Association – Md Chapter
League of Women Voters of Maryland
Learning Disabilities Association – Md Chapter
Lower Susquehanna Riverkeeper
Maryland Autism Project
Maryland Bass Nation
Maryland Children's Environmental Health Coalition
Maryland Conservation Council
Maryland Environmental Health Network
Maryland Ethical Cannabis Association
Maryland League of Conservation Voters
Maryland Nurses Association
Maryland Organic Food and Farming Association
Maryland Ornithological Society
Maryland Pesticide Education Network
Maryland Public Interest Research Group
Maryland United for Peace and Justice
Maryland Votes for Animals
McDaniel Honey Farm
Migrant Clinicians Network
Moms Clean Air Force
MOM's Organic Market
Montgomery Countryside Alliance
National Aquarium
Natural Resources Defense Council
Organic Consumers Association
Pearlstone Conference Centera
Perfect Earth Project
Pesticide Action Network – North America
Potomac Riverkeeper
Queen Anne's Conservation Association
Rachel Carson Council
Really Raw Honey Company
Red Top Farm
Rodale Institute
Rosedale Farm
Ruscombe Community Health Center
SafeGrow Montgomery
Safe Minds
Safe Skies Maryland
Sierra Club – Maryland Chapter
Spa Creek Conservancy
The Flower Factory
Towson Estates Association
Trout Unlimited
Washington County Beekeepers Association
Waterkeepers Chesapeake
Westport Farmers Market
Westport Neighborhood Association
Wicomico Environmental Trust

PROTECT MARYLANDERS FROM DANGEROUS PFAS-CONTAINING PESTICIDES

Pass the **Pesticide Registration – PFAS Testing – Requirements Bill (SB 158/ HB 319)** to keep Maryland safe from these dangerous forever chemicals.

Scientists in multiple labs have found dangerous levels of PFAS in several pesticides commonly used throughout the country.[6]

New research[7] found extraordinarily high levels of PFAS in common pesticides used on food crops; the crops grown in these fields tested at 100 times the EPA's lifetime drinking water limit.

Decades ago, when we learned the dangers of lead and asbestos, we took action. Now that we are understanding the dangers of PFAS, we can turn the tide and protect our health by enacting smart, common-sense regulations.

What are PFAS?

PFAS are known as **"forever chemicals"**—and do not break down in the environment. There is also no known way to destroy or safely dispose of PFAS. As a result, these toxic products have already made their way into our water systems, including the Chesapeake Bay[1] and our drinking water, our soil, our food,[2] and consequently, into our bodies.[3]

EVEN LOW EXPOSURE TO PFAS IS LINKED TO A MULTITUDE OF LONG-TERM SERIOUS HEALTH[4] IMPACTS[5], INCLUDING:

- **KIDNEY, TESTICULAR, AND BREAST CANCER**
- **MORE SERIOUS COVID-19 INFECTION OUTCOMES**
- **HIGH CHOLESTEROL**
- **IMPAIRED FUNCTIONING OF THE LIVER, KIDNEYS, AND IMMUNE SYSTEM**
- **DEVELOPMENTAL DAMAGE TO INFANTS**
- **CHILDHOOD OBESITY**
- **BIRTH DEFECTS**
- **THYROID DISEASE**
- **LESS EFFECTIVE RESPONSES TO VACCINES**

Why do we need this legislation?

Millions of pounds of pesticides are applied annually in Maryland—that end up in our air, soil, and the Bay—and we do not know if they contain PFAS. Unfortunately, action to protect public health at the EPA has been blocked by the chemical industry. As a result, the EPA has allowed **more than 12,000 PFAS**[8] on the market with **little oversight**, despite a growing body of data on their hazards. There is no research on the synergistic effects of combining these "forever chemicals" with pesticides that are already known to have acute and long-term adverse health impacts. The PFAS contamination crisis exists across the U.S.—and we must take action at the state level.

What will the bill DO?

Pesticide Registration – PFAS Testing – Requirements Bill (SB 158/HB 319) requires all manufacturers of mosquito control products in the state provide annual independent lab testing and certification to prove the pesticide product is PFAS-free, beginning January 1, 2024. Then by January 1, 2026, manufacturers of all pesticides must provide this same test.

Who will the bill HELP?

Reducing PFAS contaminants in our air, water and soil will make all Marylanders—children and adults, especially pregnant women—safer.

"If the intent was to spread PFAS contamination across the globe there would be few more effective methods than lacing pesticides with PFAS," stated PEER Science Policy Director Kyla Bennett, a scientist and attorney formerly with EPA.

» *TAKE ACTION TODAY!*

SmartOnPesticides.org

FOR MORE INFORMATION, PLEASE EMAIL
raindrop@mdpestnet.org.

SMART on PESTICIDES maryland
For Safe Water & Healthy Kids

[1] https://www.ewg.org/research/national-pfas-testing/
[2] https://www.fda.gov/food/chemical-contaminants-food/testing-food-pfas-and-assessing-dietary-exposure
[3] https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html
[4] https://www.atsdr.cdc.gov/pfas/health-effects/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.atsdr.cdc.gov%2Fpfas%2Fhealth-effects.html
[5] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/
[6] https://civileats.com/2022/11/07/pfas-forever-chemicals-pesticides-pollution-farmland-mosquito-control-epa-inert-ingredients
[7] https://www.sciencedirect.com/science/article/pii/S266691102200020X "*Journal of Hazardous Materials Letters*, "Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS
[8] https://www.northcarolinahealthnews.org/2021/03/09/environmentalists-say-trumps-epa-fell-far-short-in-the-fight-against-pfas/
[9] https://civileats.com/2022/11/07/pfas-forever-chemicals-pesticides-pollution-farmland-mosquito-control-epa-inert-ingredients

Maryland Pesticide Education Network

EVALUATING HEALTH & ENVIRONMENTAL SCIENCE

A Guide for Legislators

Scientific evidence is the underpinning for policy decisions regarding health. This checklist offers guidance for legislators listening to and assessing scientific testimony and scientific arguments on these often difficult questions, as well as help in questioning witnesses during a hearing.

1. What is the purpose, and what is the source of the research being presented?

The goal of a study may influence the outcomes. For instance, studies that a manufacturer must undertake to submit a chemical or drug for federal registration are different from studies performed by independent scientists seeking to understand impacts of chemicals on humans, animals, or the ecosystem.

What you need to know: Are government findings based on industry-provided research? Are they based on a review of all available sources?

Example: In the debate of e-cigarette / vapor product regulation, research reports by the FDA's Division of Pharmaceutical Research was very credible because it reflected totally independent testing.

2. Have the studies been peer-reviewed?

Independent scientific research is subject to review by a panel of "peers"; these are other scientists with no stake in the findings and no conflicts of interest. Peer review ensures accuracy in methodology and statistical significance, as well as proper interpretation of the results. When a study passes peer review, it is usually published in a scientific journal, such as Environmental Health Perspectives or the Journal of the American Medical Association. This is a transparent process, ensuring that rigorous standards are upheld.

What you need to know: Are the studies being cited peer reviewed? If not, consider the source. Blogs and newspaper articles are not peer-reviewed materials, but may link back to a peer-reviewed source.

Peer Reviewed

A panel of independent experts in the same scientific field, who have no connection to the study and no conflicts of interest, have reviewed it and judged it to be valid and worthy of publication.

3. How certain is "certain enough" to act?

Scientists examine facts and complex information and then look for a preponderance of evidence. While scientists routinely disclose elements of uncertainty in their research, they form their conclusions based on the weight of the evidence.

What you need to know: Is there sufficient evidence regarding possible harms that warrants taking action? Is there sufficient evidence of safety to justify inaction?

Example: Based on the preponderance of evidence of likely harm, we passed seat belt laws and prevented children from drinking alcohol.

4. Are the scientists being too cautious?

Scientists are conservative regarding "certainty." They use a "95% confidence test" in order to conclude that two observations that happen together are more than accidental and probably causal. When it comes to taking action,

however, public and environmental health experts recommend action based on sufficient scientific evidence to warrant concern and not on a specific percentage.

What you need to know: What are the risks and what could be the harm if we wait for more research to be conducted before taking action?

Example: Laws limiting human exposure to DDT, lead, tobacco and alcohol were all passed long before a 95% confidence test was met. These laws were based on a preponderance of evidence rather than 95% certainty.

Weight of the Evidence

This term refers to a judgment in the scientific community that most studies to date confirm a particular conclusion. Scientists are always open to new findings, so they may avoid using terms like "certainty", "100%" or "we are sure."

5. Are the findings influenced by funding source, trade secrets, or suppression of data?

The design of a scientific study may be influenced by the source of its funding. This has been well documented by independent observers. It is therefore reasonable and prudent for legislators to ask all scientists and those who cite scientific research about their sources of funding.

What you need to know: What are the sources of funding for the work being cited? Were any data omitted due to trade secret protections or similar reasons?

Example: 1) The source of funding for a study can influence important findings or cause contrary results to be omitted from the study's report. 2) Important data that an industry provides to a federal agency before marketing will not be in the public domain and may not have been subjected to peer review.

6. Has anyone addressed the economic harm associated with inaction?

Policy-makers must weigh not only the cost of taking action but also the cost of inaction. Science offers insight into the costs of inaction.

What You Need to Know: What public and private costs may be incurred if we do not take action on this proposed policy?

Example: A 2015 peer reviewed study estimated the costs to the EU of human exposure to endocrine disruptors at $209 billion annually in medical care and lost productivity. *(Trasande et al J Clin Endocrinol Metab. 2015 Apr; 100(4): 1245–1255.)*

Note: The fiscal note on a bill will not typically assess the costs of inaction. It addresses only the costs of adopting the policy, and usually only the costs to government.

7. Have long term effects been assessed?

Early life exposures can create high risks in later life. An example is the link between lead poisoning and long-term harms to children, or between tobacco and cancer. Over time, human exposures to multiple chemicals will have interactive effects that may be quite different from the effects of a single chemical.

What you need to know: Does the science presented also address the long-term effects of exposure? If not, is that because the research does not exist?

Note: Federal agency review does not establish absolute safety. The US EPA registers chemicals based on "reasonable certainty of no harm" and has yet to address the synergistic effects of chemicals in real life, such as interactions with other chemicals in the environment, medications, and illness.

SB158-CentralMdBeekeepers_Fav.pdf
Uploaded by: Bonnie Raindrop
Position: FAV

Testimony in Support of SB 158
Pesticide Regulation – PFAS Testing – Requirements

February 2, 2023
Committee: Education, Energy, and the Environment
Submitted by: Central Maryland Beekeepers Asssociation
Position: Favorable

If the bees and other pollinators were not already besieged from all sides by pesticides and a host of other problems, there is another one that is not even directed at them that we are just now learning about.

A class of compounds called "forever chemicals" because not even bacteria can eat them or degrade them, **PFAS have recently been shown to be as toxic to bees as chemicals designed to kill insects!** They are found in many places, but particularly worrisome is their presence in pesticide formulations such as mosquito spray, which are purposely broadcast into our environment on a massive scale. Even if the PFAS are not intentionally added to the pesticides but are present as accidental contaminants, they are there in many cases.

As these sprays are used according to label directions, the PFAS are spread with them. Eventually, the pesticides degrade and have to be reapplied, but the PFAS from the first application remain. **Every application adds to what is already there, contaminating the soil and water more and more. Plants naturally absorb the water through their roots, and the PFAS end up in the nectar of the flowers, which is what the bees eat**. Bees also collect water from puddles, ponds, and streams, which may also become contaminated.

A study on the effects of PFAS on bees published April 2021, **found at a microscopically low concentration, 20 parts per billion, PFAS halts all brood-rearing in the colony. Killing the babies kills the colony, because honey bees only live about six weeks,** and workers who die off must be constantly replaced. A typical colony of about 50,000 bees loses over 1000 workers a day to old age. Without new workers coming along, the colony is doomed. **The population declines rapidly, and in a few weeks, the colony dies. At slightly higher concentrations, the bees die quickly**, and a colony may not last a day. As these toxins do not degrade in the environment, they continue to do damage forever.

It is vital that the widespread use of PFAS in pesticides be reduced or eliminated, and that is only possible if we know how much is present in the pesticides.

Please pass bill SB158 to ensure that these contaminants are not spread across our state.

SB158_BWalls-PRKN_fav.pdf
Uploaded by: Brent Walls
Position: FAV

POTOMAC RIVERKEEPER NETWORK

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February 2, 2023

FAVORABLE REPORT – SB 158: Pesticide Regulation – PFAS Testing – Requirements

Dear Chairperson and Members of the Committee,

Potomac Riverkeeper Network is in strong support of Bill SB158 on behalf of our members and Communities that depend on clean water for drinking and recreation. The mission of PRKN is to protect the public's right to clean water in the Potomac and Shenandoah rivers and enhance the safety of our drinking water, protect healthy river habitats and enhance the public use and enjoyment. The wide spread pollution of the PFAS compounds here in Maryland is becoming alarmingly clear that the State of Maryland must set forth protections of our water resources. PFAS chemicals are a family of pollutants of over 12,000 and are linked to numerous cancers, birth defects and diminished immune systems. PFAS chemicals do not break down easily and have been referred to as the "Forever Chemical". Not only are PFAS chemicals toxic and do not break down, but these chemicals also build up in your system over time. The more exposure we have to PFAS chemicals the more humans will be at risk and threat of serious health impacts.

The source of PFAS chemicals originated with the use of industrial and commercial products like AFFF, a firefighting foam used by the military and Fire Departments across the Country. Now, the family of PFAS chemicals is in many commercial products that we use every day, which ends up in our waste water and into our groundwater and streams. These are indirect pathways of PFAS pollution that need to be addressed; however, **PFAS in pesticides is a direct application onto our water resources. Since mosquitoes and other insect pests are more of a burden in water related areas, the exposure of PFAS pesticides is directly impacting the water resources of Maryland that provide drinking water to millions of people.** The Potomac River is the number one source of Maryland's Drinking water from western most counties to the urban metropolis of D.C.

A recent study in the Journal of Hazardous Materials Letters, "Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS," found PFOS (a legacy PFAS) in 6 out of 10 tested insecticides at levels ranging from 4 million to 19 million parts-per-trillion (ppt). For reference, the EPA's current lifetime health advisory for PFOS in drinking water is 0.02 ppt). The study conducted on a USDA research field was led by Steven Lasee, who was at Texas Tech at the time of the study. Malathion, one of the

most commonly applied insecticides in the world, which is also used in Maryland, was found to contain PFAS in this study. Based on the 6 PFAS-contaminated pesticides tested in the study, **Maryland registers 346 pesticides products containing these active ingredients, amplifying concern these similar products may also contain PFAS**. Here are two other examples of pesticides used in Maryland that have PFAS chemicals:

- *Permanone 30-30, a pesticide for mosquito control that was sprayed by Maryland Dept. of Agriculture (MDA) in 2,100 Maryland communities last year, was initially found by an EPA-approved lab to contain two PFAS chemicals—3,500 ppt of perfluorooctanoic acid (PFOA) and approximately 630 ppt of another PFAS, hexafluoropropylene oxide dimer acid (HFPO-DA).*
- *The insecticide, Mavrik, which MDA lists as an option for its Mosquito Control Program, was found by the Massachusetts Department of Environmental Protection to be contaminated with PFAS at 16,703 ppt.*

The direct exposure of PFAS chemicals to Maryland's water resources is compounding another source of PFAS contamination to our Communities through the increasing levels of PFAS in fish tissue. Science has shown PFAS is causing harm to fish and wildlife. The Maryland Department of the Environment has recently issued fish consumption advisories for Piscataway Creek. **The EPA has data that shows fish in the Potomac River from Cumberland Maryland to the District of Columbia have extremely high levels of PFAS chemicals in fish tissue.** PRKN is working with USGS fisheries biologists as they investigate the **levels of PFAS in small mouth bass, one the most important game fish in Maryland and a source of food for many subsistence families. The levels of PFAS chemicals in small mouth bass in Maryland average 500,000 parts per trillion (ppt).** Eating one fish is the equivalent of drinking PFAS contaminated drinking water at 70 ppt for a month. The direct spraying of pesticides with PFAS chemicals will continue to increase the threat of contaminating our drinking water and polluting our fisheries; which will put all Marylanders at risk for significant health impacts. It is imperative that Maryland act now and take the necessary steps to protect our water resources.

For the reasons stated in this testimony, we urge a favorable report on SB158.

Brent Walls

Upper Potomac Riverkeeper

Potomac Riverkeeper Network

Nature Forward SB0158 - In favor.pdf
Uploaded by: Denisse Guitarra
Position: FAV

February 1, 2023

Written testimony for SB0158- Pesticide Registration –

PFAS Testing - Requirements[1]

Position: Favorable

Submitted by: Denisse Guitarra, MD Conservation Advocate, Nature Forward

nature forward
Connecting people and nature in the Capital Region
natureforward.org

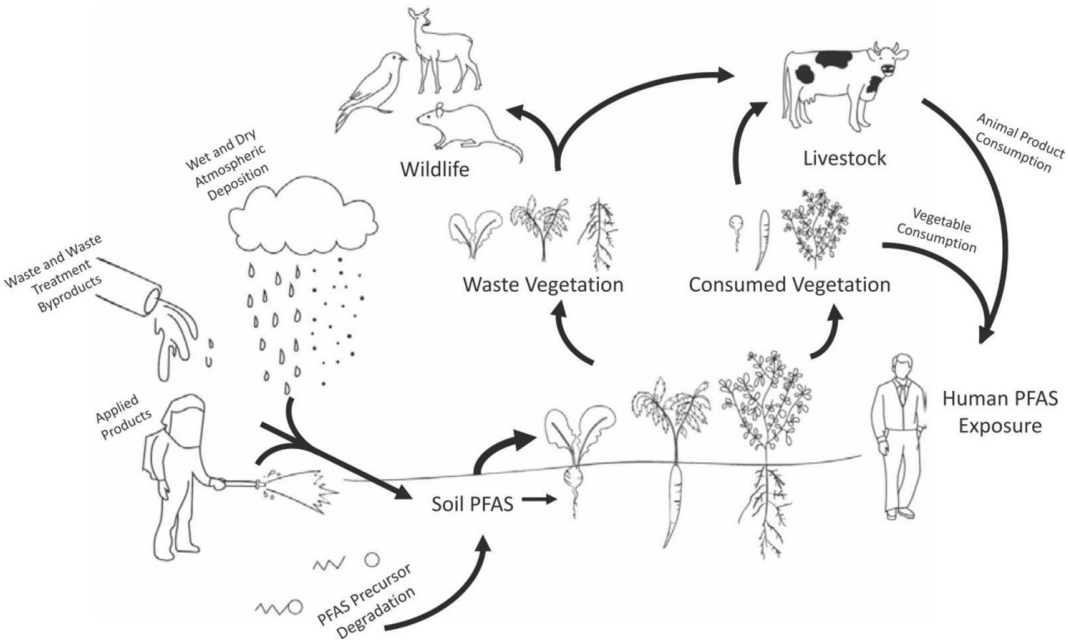
Dear Senate Education, Energy, and the Environment Committee,

Nature Forward (formerly Audubon Naturalist Society) is the oldest independent environmental organization protecting nature in the DC metro region. Our mission is to inspire residents of the greater Washington, DC, region to appreciate, understand, and protect their natural environment through outdoor experiences, education, and advocacy. We thank the Senate Education, Energy, and the Environment Committee for the opportunity to provide testimony on SB0158- Pesticide Registration - PFAS Testing - Requirements to prohibit pesticides containing PFAS for use against mosquitoes.

In particular we are in support of SB0158 to limit the use of PFAS chemicals and their distribution into the environment. As defined in the bill, PFAS chemicals are fluorinated organic chemicals containing at least one fully fluorinated carbon atom, including perfluoroalkyl and polyfluoroalkyl substances. PFAS do not break down in human bodies or in the environment. Rather, these "forever chemicals" continue to threaten environmental and human health as they pollute waterways and drinking water. PFAS have also been linked to cancer and other adverse human health effects. One newly identified source of PFAS in the environment is the use of pesticides on crops. Recent research has detected PFAS in 7 out of 10 pesticides tested, as well as in crops where pesticides have been used.[2] When used on crops, PFAS can remain in the harvested produce making their way to grocery stores for human consumption as shown in the graphic below.

[1] SB0158- Pesticide Registration - PFAS Testing - Requirements. Available at: https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/sb0158

[2] Lasee S., K. McDermett, N. Kumar, J. Guelfo, P. Payton, Z. Yang and T.A. Anderson (2022) Targeted analysis and Total Oxidizable Precursor assay of several insecticides for PFAS. *Journal of Hazardous Materials Letters* 3: Available at: https://www.sciencedirect.com/science/article/pii/S266691102200020X#tbl0005



PFAS cycle from pesticide application and introduction into human consumption (Lasee et al., 2022)

The passage of this bill would provide a necessary step forward for Maryland in mitigating the environmental and public health risk presented by the continuing manufacture, sale, and use of PFAS chemicals in pesticides. On behalf of our 28,000 members and supporters, Nature Forward recommends that the Senate Education, Energy, and the Environment Committee support the passage of SB0158.

Sincerely,

Denisse Guitarra, Nature Forward Maryland Conservation Advocate

Ilisa Tawney, Nature Forward Conservation Volunteer

Eignor Testimony 2-2-23.pdf
Uploaded by: Diana Eignor
Position: FAV

Maryland Pesticide Education Network

Testimony: **SB 158: Pesticide Registration - PFAS Testing - Requirements**
Submitted to: The Senate Committee on Education, Energy, and the Environment (EEE)
Submitted by: Diana Eignor, MS, on behalf of the Pesticides & Chesapeake Bay Watershed Project, a Maryland Pesticide Education Network facilitated Project
Position: **In Support**

February 2, 2023

Dear Chair Feldman, Vice Chair Kagan, and Members of the Committee:

Thank you for this opportunity to submit testimony in support of SB 158: Pesticide Registration – PFAS Testing – Requirements. **My name is Diana Eignor. I am a biologist/toxicologist and retired EPA scientist working with the Maryland Pesticide Education Network as coordinator of its Pesticides and the Chesapeake Bay Watershed Project.**

How Per- and Polyfluoroalkyl Substances (PFAS) harm fish and why have PFAS become a danger to human health and the environment?

The severity in which pesticides are affecting our waterways is vast.
Scientists in multiple labs have found dangerous levels of PFAS in commonly used pesticides across the country. **Fish research studies report increased risk of disruption of thyroid function, reproductive effects, and adverse effects on the immune system. The strong carbon-fluorine bond in PFAS make them unable to break down in the environment naturally.** This quality and the lack of disposal methods means that these chemicals have already made their way into our water, sediment, and soil. **PFAS have entered our food supply, aquatic organisms, and our bodies through biomagnification. Biomagnification is the process where concentrations can increase and magnify in the food web. For example, a small fish eats an invertebrate, a larger fish then eats the small fish, and a human eats the large fish. When we consume fish, we are ingesting all the PFAS in this food chain.**

- **Surface water and Drinking water relationship.** In Maryland, **surface water from the Potomac and Patuxent Rivers supplies a large percentage of our drinking water.** In a nationwide Waterkeeper Alliance study (10/14/22), waterkeepers sampled for PFAS chemicals in 12 locations in Maryland. **All the concentrations detected for PFOS and PFOA (forms of PFAS) exceeded the EPA's interim health advisory levels in drinking water (0.02 ppt for PFOS and 0.004 ppt for PFOA).** The highest concentrations were 282.8 ppt for PFOA and 1,364.7 ppt for PFOS in Piscataway Creek. **This surface water value of 1364.7 ppt for PFOS is more than 68,000 times EPA's interim health advisory PFOS for drinking water at 0.02 ppt.**

Maryland Pesticide Education Network

- **In October 2021, Maryland Department of the Environment (MDE) issued its first fish consumption advisory related to PFAS/PFOS in Prince George's County.** MDE collected fish from routine monitoring. MDE also added two fish tissue sample locations in Piscataway Creek. MDE found alarmingly elevated concentrations of PFOS in redbreast sunfish, yellow bullhead catfish, and largemouth bass. MDE then issued its first fish advisory warning people about consuming these 3 PFAS-contaminated fish species.

- In another recent study in the news this month, researchers reviewed fish tissue data from more than **500 fish fillet samples collected by the U.S. Environmental Protection Agency from 2013 to 2015.** This research shows dangerous levels of toxic PFAS in freshwater fish. Fish were found with 19,000 ppt of PFAS. **"You'd have to drink an incredible amount of water — we estimate a month of contaminated water — to get the same exposure as you would from a single serving of freshwater fish," –study co-author David Andrews.**

- **USGS utilized archived plasma from adult smallmouth bass from sample locations at 4 sites in Chesapeake Bay watershed collected from 2013 to 2019**. PFOS was the compound detected at the highest concentrations at all sites. PFOS plasma concentrations ranged from 20,000 ppt to 574,000 ppt in the 4 sample locations. These concentrations are over 1-million times greater than the 0.02 ppt EPA interim health advisory for PFOS in drinking water.

- **Delaware River Basin Commission Research in the Delaware River.** Sampling along the Delaware River in NY, NJ, PA, and DE found that higher concentrations of PFAS were generally measured in the more developed zones. The highest PFOS concentrations were detected in fish fillets from smallmouth bass in the Delaware River (37 ng/g PFOS). Assuming a 8 ounce fillet, **eating this one fillet is equivalent to drinking water at the 0.02 ppt interim health advisory level for 315,780 years.**

- **Incomplete Maryland pesticide use numbers. There are 14,000 pesticides registered for use in Maryland. The MD 2020 Pesticide Use Survey** (https://www.nass.usda.gov/Statistics_by_State/Maryland/Publications/Pesticide/2020-MD-Pest-FINAL-PUB.pdf) **has provided information representing only 6% of the 12,000 farms. This survey reported over 5 million pounds used annually by this small sample. *Extrapolating from 6% of farms using 5 million pounds to 100% farms, assuming similar pesticide use, indicates approximately 83 million pounds used annually.***

Maryland Pesticide Education Network

- **The amount of pesticide products containing PFAS is unknown.** Pesticides containing PFAS are used agriculturally on crops. Pesticides containing PFAS are widely used for mosquito control. The Maryland Department of Agriculture's (MDA) mosquito control program often sprays weekly in 2,100 Maryland communities.

Act Now

Maryland residents deserve to see change and implementation when it comes to pesticide use. Maryland residents deserve to see action to remove PFAS-containing pesticides in our state. We are urging you to please pass this legislation, the SB 158 Pesticide Regulation – PFAS Testing – Requirements, ensuring that no pesticide product containing PFAS is used in the state of Maryland.

For all these reasons, we urge a favorable report on SB 158.

Sincerely,

Diana M. Eignor

Diana M. Eignor, MS

Arundel Rivers Testimony in SUPPORT of SB158.pdf
Uploaded by: Elle Bassett
Position: FAV

Arundel Rivers FEDERATION

PO Box 760 Edgewater, MD 21037
410-224-3802 www.arundelrivers.org

Testimony in SUPPORT of Senate Bill 158 – Pesticide Regulation – PFAs Testing – Requirements

Education, Energy, and the Environment Committee
February 2, 2023

Dear Chair Feldman and Members of the Committee,

Thank you for this opportunity to submit testimony in **SUPPORT** of SB158 on behalf of Arundel Rivers Federation. Arundel Rivers is a non-profit organization dedicated to the protection, preservation, and restoration of the South, West and Rhode Rivers with over 3,500 supporters. Our mission is to work with local communities to achieve clean, fishable, and swimmable waterways for present and future generations.

As the South, West and Rhode Riverkeeper, I monitor the health of our waterways, advise the public of the state of our local water quality, and identify and implement restoration projects to address any issues. According to the Environmental Protection Agency (EPA), PFA chemicals are man-made chemicals that do not beak down in the environment or our bodies, earning the nickname "forever chemicals." PFAs have been linked to negative health impacts including cancer and reproductive problems and they a pollution in our local waterways, air, and soil.

In 2022, Arundel Rivers Federation participated in a PFA study of our region. A total of 39 samples were analyzed from Chesapeake rivers and streams, including one in Church Creek, a tributary of the South River. All of these samples contained PFAs or PFOs[1]. To protect the health of our waterways and our communities, further monitoring and regulations of these forever chemicals is needed now.

Senate Bill 158 will require all manufacturers of mosquito control products in Maryland to provide annual independent lab testing and certification to prove the pesticide product is PFA-free, ensuring that no PFAs in mosquito control pesticides contaminate our air, water, and soil.

Senate Bill 158 is on piece of a broader PFA regulatory framework that is needed to protect our waterways and ensure a safer environment for our communities. For these reasons, Arundel Rivers respectfully requests a favorable report on Senate Bill 158.

Sincerely,

Elle Bassett

Elle Bassett
South, West and Rhode Riverkeeper
Arundel Rivers Federation

[1] Cyclopure PFAs Survey Report. Summer 2022 (U.S.) https://waterkeeper.org/wp-content/uploads/2022/10/Cyclopure-WKA-PFAS-Survey-Report-final.pdf

SB158 - Clean Water Action - FAV.pdf
Uploaded by: Emily Ranson
Position: FAV

SB158: Pesticide Registration - PFAS Testing - Requirements

Senate Education, Energy, and the Environment
February 2, 2023

Dear Chair Feldman and Members of the Committee,

PFAS is a forever chemical that accumulates in the environment and in our bodies. It is associated with a myriad of negative human health impacts. The state has already recognized and taken necessary action to remove many products containing PFAS and has begun monitoring some bodies of water.

Some, but not all, pesticides include high levels of PFAS - whether through contamination or deliberate inclusion. These pesticides are then sprayed on crops or in our neighborhoods for mosquito control, where we are exposed. SB158 places the testing burden on the distributor of pesticides, not the state, requiring that before a pesticide can be registered for use in Maryland the distributor must test for PFAS and sign an affidavit.

We are also especially concerned about exposure to PFAS-containing pesticides in farmworker communities, where workers oftentimes work and live in close proximity. Both pesticides and PFAS are linked with similar adverse health impacts, which draws concern when someone is exposed to both.

For these reasons, we support SB158 and urge a favorable report.

Thank you,

Emily Ranson
Clean Water Action
eranson@cleanwater.org

Quote41013898.pdf
Uploaded by: Eric Gally
Position: FAV

Eurofins Lancaster Laboratories
Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601

Tel: (717) 656-2300
Fax: (717) 656-2681
www.EurofinsUS.com

January 31, 2023

Bonnie Raindrop
Maryland Pesticide Education Network
2913 Overland Ave
Baltimore, MD 21214
raindrop@mdpestnet.org
Tel: (410) 404-3808

Subject: Quotation Number 41013898 for PFAS in Pesticide Testing

Dear Bonnie Raindrop:

Thank you for the opportunity to provide this quotation for analytical testing services for PFAS in Pesticide Testing. Our quotation includes pricing and all relevant information regarding our accreditation status, technical details, turnaround time, deliverables, and a copy of our General Provisions. Amanda Barnhart is your Project Manager and can be contacted at 717 556-3860 or Amanda.Barnhart@et.eurofinsus.com.

Eurofins Lancaster Laboratories Environment Testing, LLC (ELLE) is the largest single-site laboratory in the U.S., located on our 532,000 sq ft, 47 acre campus. We are accredited by NELAP, DOD, and 40 states, and are dedicated to providing the highest quality available in the industry.

Our team offers you the following advantages in order to make your project a success:

- **Capacity** unrivaled in the industry. Offering you more analysis methods and data deliverable options at one location than any other facility, eliminating the need for multiple facilities. We're staffed on weekends and operate multiple shifts to meet your standard and rush TAT needs, and also offer 24/7 sample receipt.
- **myEOL**® provides web access to your data, including analysis reports, COCs, data packages, EDDs, and exportable data tables, as well as the ability to compare your results to regulatory limits.
- **Project Management** dedicated to your project that supports sample container orders, project setup, and continuous monitoring of your project in the laboratory. Our staff is experienced and trained in laboratory operations, regulations, and state requirements.
- **PFAS, Dioxins/Furans, and PCB Congener** analysis provided in our facility eliminates the need to use multiple labs.

In the absence of an existing contract, a site-specific QAPP, or Statement of work, ELLE will follow the terms in our General Provisions and the method procedures and reporting limits as outlined in our Standard Operating Procedures.

We look forward to working with you on this project. If you have any questions about our quotation or would like to request additional information about Eurofins Lancaster Laboratories Environment Testing, LLC, please contact me at Chris.Coast@et.eurofinsus.com.

Sincerely,

Chris Coast
Business Development Specialist

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601

Prepared by	Coast, Chris
Date	1/31/2023
Expiration Date	5/1/2023
Est. Start Date	

Prepared for:
Bonnie Raindrop
Maryland Pesticide Education Network
2913 Overland Ave
Baltimore, MD 21214
raindrop@mdpestnet.org
Tel: (410) 404-3808

Project: PFAS in Pesticide Testing

Quote Number: 41013898 - 0

Liquids **TAT: 35_Days (Business Days)**

Matrix	Method	Test Description	Quantity	Unit Price	Extended Price
Water	537 IDA	List of 40 (EPA 1633 Draft Method)	1	$ 475.00	$ 475.00
Water	ELLE SOP	Total Fluorine	1	$ 375.00	$ 375.00
		Total Liquids			**$ 850.00**

Quote Other Charges

Description	Quantity	Unit Price	Extended Price
Safe and Environmentally Responsible Waste Management (per sample)	1	$ 6.00	$ 6.00
PFAS - free DI water for decon per liter - if needed	0	$ 20.00	$ 0.00
PFAS - free DI water for Field Reagent Blank (FRB) - if needed	0	$ 10.00	$ 0.00
Account Setup Fee	1	$ 75.00	$ 75.00
Total Other Charge			**$81.00**

Total Other Charges	**$ 81.00**
Total Analysis Charges	**$ 850.00**
Grand Total for Quote 41013898	**$ 931.00**

***Quoted charges do not include sales tax. Applicable sales tax will be added to invoices where required by law.*

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Quote Number: 41013898 - 0

PROJECT DETAILS

Project Specific Comments

Eurofins Lancaster will perform a modified approach to method 537 that utilizes isotope dilution for quantitation. This method uses a Liquid Chromatography with Mass Spectrometry (LC/MS/MS) technique to identify and report targeted compounds. The lab calibrates using branched/linear isomer standards, where a quantitative branched/linear isomer standard is commercially available. The compounds for which quantitative standards are available are PFOS, PFHxS, NMeFOSAA and NEtFOSAA. The branched and linear isomers in samples are summed and quantified by a calibration standard in which the branched and linear isomers were also summed. For PFOA, where a quantitative branched/linear isomer is not yet available, a technical grade standard of PFOA is run with each calibration. The technical grade standard is used as a qualitative indicator of the relationship of the branched PFOA isomers to the linear PFOA isomer. To quantify PFOA, the branched and linear isomers in a sample are summed, but quantified using the response of the linear isomer.

Accreditation

The state of Maryland does not offer accreditation for the scope of work quoted.

Credit Approval/Account Set-up/Payment

Full payment is required before any work related to this quote can be initiated. Please include a check for the full amount with your sample delivery in order to avoid delay in testing. Alternatively, full payment can be made by credit card prior to sample submission. Please contact your project manager for this transaction. Results will not be released until this is done.

If you want to establish an account with Eurofins Lancaster, with payment after analysis is complete, please complete and return the attached New Client Account form. If your credit is found to be in good standing we will extend credit with 30 day payment terms. There is a one-time charge of $75 for this.

Data Deliverables

Unless otherwise instructed your data will be provided in our standard report format, comparable to an EPA Level II deliverable and Excel EDD. All data will be available on our on-line data retrieval system, MyEOL®. If a more extensive deliverable format is required for your project, please inform your project manager prior to sample submission. Additional

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Tel: (410) 404-3808

Project: PFAS in Pesticide Testing *Quote Number: 41013898 - 0*

charges may apply.
ELLE offers a variety of data deliverable options, including but not limited to Level III, IV, DOD ELAP, and state specific. Please specify data deliverable and EDD formats at the time of sample submission. A surcharge up to 15% of the analytical costs may apply for any of these deliverable types. Requests for these deliverable formats after data has been reported will incur additional generation and assembly fees (hourly rates may apply).

All data and EDDs will be available on our on-line data retrieval system, MyEOL®. Packages can also be uploaded to a client's FTP site. Contact your client service representative if you need to set up a MyEOL® account or need other arrangements for your packages.

If an EDD is required for your project please inform your project manager prior to submitting samples. Requests for EDDs after the final report is prepared may result in a fee. Complex EDDs may also require a fee.

PFAS

Field QC for Non-Potable Water, Soil and other Non-Drinking Water Matrices
When using the modified method of EPA 537(Isotope Dilution), it is at the client's discretion if site specific QC is required for their project. It is Eurofins' recommendation that the Field Reagent Blanks are included at a minimum. Also, if you are using equipment for the first time it is advisable that you also collect an equipment blank

If requested or submitted, any field reagent blanks, equipment blanks, trip blanks or MS/MSDs will be billed at the unit rate.

PFAS-Free DI Water & Bottles
Sample containers, coolers and chain of custody forms are provided at no additional cost. We will provide PFAS-free plastic (HDPE) containers with Teflon lining-free lids for PFAS testing. Please provide 5 days' notice when requesting sample container/collection kit delivery. Laboratory water is tested and confirmed to be PFAS analyte-free. We provide PFAS-free deionized water for field and equipment blanks at $10 per blank. We can provide additional deionized water for field decontamination at $20 per liter bottle.

AFFF Related Samples
Due to the potential for high concentrations of PFASs in these samples, it is critical that the associated chain of custody and sample containers clearly state that these are AFFF related samples.

PFAS Technical Comments
Please inform your project or account manager of samples with known or expected high PFAS values. This will enable us to avoid possible instrument downtime due to carryover. If samples with high PFC levels result in the need for extensive instrument cleanup a charge of $250 will be incurred.

If analysis of the extract demonstrates that PFAS target analytes have exceeded the calibration range for the analytical method or the analysis demonstrates that interferences have compromised the accuracy of reported results, the extract can be diluted appropriately and reanalyzed. Dilutions up to 50X -100X can typically be accommodated. Extract dilutions greater than 100x may require that the sample be re-extracted at a reduced volume to bring target analytes to within calibration range. If the sample requires re-extraction using a reduced volume this complex dilution will

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Project: PFAS in Pesticide Testing *Quote Number: 41013898 - 0*

incur a charge of 60% of the analytical rate. You will be given the option of reporting with "E" flags (concentration exceeds the calibration range) or continuing with re-extractions and addtional dilutions at the extra charge. High concentration samples may also impact our quoted turnaround time.
A 60% surcharge will apply to samples that require re-extraction with smaller initial volumes due to high concentrations.
Non-routine matrices such as highly impacted samples, dispersions, pure products (AFFF), landfill leachates, complex IDW, solvent waste and non-environmental samples, etc. will be charged at a higher rate and may have extended TAT.

PFAS Project/Site Information Needed

Prior to submitting samples for PFAS testing please review the following questions and provide a written response to your project manager:

1. Do you have any historical data or knowledge of the history at the project site?
2. Was AFFF used or stored at the site? Will you be sampling from those areas and can that be noted on the COC?
3. What type of businesses were active in the past on this site? Was there any fluorochemical manufacturing activity at the site?
4. Are these samples part of, or related to, PFAS remediation activities? Are you expecting high concentrations?
5. Are there any actions levels at the site?
6. Are any of the samples you will be submitting spiked with known concentrations of PFAS? If so, the concentrations need to be noted on the COC.

QC Samples

If the scope of work requires site-specific Matrix Spike/Matrix Spike Duplicates (MS/MSD), triplicate volume must be submitted and indicated as QC samples on the Chain-of-Custody. Unless sufficient volume is submitted to perform an MS/MSD for each analytical batch, a Laboratory Control Spike/ Laboratory Control Spike Duplicate (LCS/LCSD) will be performed to demonstrate precision and accuracy at a batch level.
Analysis of site-specific QC (MS/MSD, Field DUP) is billable at the unit rates quoted for each analytical method.
Analysis of field QC, such as Field Blanks, Equipment Blanks, Rinse Blanks and/or Trip Blanks are billable at the unit rates quoted for each analytical method.

Return Shipping

Cost to ship samples to the lab for testing is the responsibility of the client.

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Prepared for:
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Quote Number: 41013898 - 0

Sampling Supplies

Please contact your project manager prior to sampling activities to order sampling supplies (e.g. bottles, coolers) or to confirm proper containers and volume requirements.

When ordering sampling containers, we recommend that you order exact quantities required for your scope of work. Unused sample containers should not be returned to the lab for reuse due to possible contamination issues. After disposing of the unused containers, the client is responsible for the cost to ship the empty coolers to the lab.

Delivery of bottles to the project site or your office will be provided by Eurofins Lancaster Laboratories Environment Testing, LLC via ground transportation at no charge within the contiguous United States. Please place your request for bottle delivery at least 5 business days prior to your required delivery date. If fewer than 5 days' notice is provided and alternative/quicker shipping is required, additional shipping and handling charges will apply.

MyEOL®

Use of Eurofins' on-line data management tool and interactive portal, MyEOL®, provides clients with 24/7 access to all project information, including: sample results, data reports, EDDs, and invoices. This tool enables clients to manage their analytical data electronically and eliminates shipping costs and paper consumption, thereby reducing impacts on the environment. **Eurofins is pleased to provide access to myEOL at no additional charge.**

Please contact your Project Manager to create a MyEOL® account and to discuss how this tool may help you efficiently manage your analytical data.

MyEOL® features include:

- Real time access to your sample status and result data in our LIMS.
- 24/7 availability to download your EDD files.
- Convenient organization of all your program information in one place, categorized the way you want it.
- Instant archiving of all documents for secure storage and fast retrieval.
- Dynamic interactive capabilities, enabling you to query and trend data.
- Access to analytical capabilities and methodologies to help you select the best procedures for performing your work.
- Access to lists of Certification programs detailing which Eurofins laboratories perform work under these programs.
- Online access to your invoices and quotes.
- Ability to compare data results to the regulatory limits.

General Provisions

General Provisions (These provisions apply unless alternate provisions have been agreed to by both parties)

Purchase Orders and Contract Terms
A valid purchase order is required with all sample submissions. Unless otherwise agreed in writing by both parties, submitting samples for testing services constitutes acceptance of the Eurofins Lancaster Laboratories Environmental, LLC Standard Terms and Conditions. Eurofins Lancaster Laboratories Environmental, LLC standard payment terms are NET 30 Days.

Quoted Fees

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601

Prepared by	Coast, Chris
Date	1/31/2023
Expiration Date	5/1/2023
Est. Start Date	

Prepared for:
Bonnie Raindrop
Maryland Pesticide Education Network
2913 Overland Ave
Baltimore, MD 21214
raindrop@mdpestnet.org
Tel: (410) 404-3808

Project: PFAS in Pesticide Testing *Quote Number: 41013898 - 0*

Unless the fees quoted are based on contractually agreed upon rates, the fees provided in this quotation are subject to revision if the size and scope of the project differs from what was originally presented to us at the time of the quote request. We reserve the right to modify our fees if there is a significant reduction in the number of samples and/or tests performed or if samples require additional preparation work in order to successfully perform the test or meet specifications. Requests for changes after the final delivery of data may result in a fee of $125/hour for the revisions.

Reporting Format (MDL/LOQ)
Eurofins Lancaster Laboratories Environment Testing, LLC's default reporting format is to report to our MDL (Method Detection Limit). For data reported to the MDL, our standard protocol is to qualify any detections between the MDL and LOQ with a "J" on your analysis report. Please contact your project manager if you require the lab to report to the LOQ (Limit of Quantitation).

Data Deliverables
Standard Analysis Reports include a Quality Control (QC) Summary, Lab Sample Analysis Record, and your chain of custody (COC).
Full Data Package (Level IV or non-CLP Validation Package) includes Standard Analysis Reports plus a case narrative, sample, standards, and QC raw data as well as QC and data summary forms required for data validation.
Reduced Data Packages - includes Standard Analysis Reports, a Case Narrative, QC Summary forms, Sample Prep and Run Logs, and Raw Data for GC and GC/MS analyses.
State-Specific Deliverables including New Jersey Reduced or Regulatory, New York ASP-A or ASP-B, Texas TRRP-13, Massachusetts MA MCP, Connecticut CT RCP, and other formats are also available.
Hard copy (paper) data packages are not routinely provided. If a paper copy is requested, additional fees will apply.

Turnaround Time (TAT)
Standard Analysis Reports are provided via email in PDF with your COC within 10-15 business days depending on the analyses requested. Samples put on hold or sequential analyses will lengthen the TAT, and may also require rush surcharges if less than half of the holding time remains when notification to proceed with testing is given.

Bottle Orders/Shipping
Unless otherwise agreed or presented in this quotation, Eurofins Lancaster Laboratories Environment Testing, LLC requires at least 5 business days notice to prepare and ship your sample containers. We will provide shipping of the containers to you via Federal Express Ground service at no charge. Shipping of the containers back to the lab is the client's responsibility. Returned coolers and containers that are not used for sampling may be charged to the client. Eurofins Lancaster Laboratories Environment Testing, LLC covers shipping costs to the 48 contiguous states, excluding AK, HI, PR, and international shipping. ELLE will provide adequate sample containers, coolers, and packing materials for your project. Fees for extra supplies and the associated shipping costs will depend upon your project needs. Additional fees will apply for unused or returned sampling supplies.

Sample Receiving
Eurofins Lancaster Laboratories Environment Testing, LLC can receive samples 24/7. Samples will be logged in our LIMS the same day received except on Sundays, major holidays, or if discrepancies exist between samples and the chain of custody.

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Hazardous Sample Communications
The client is responsible for communicating to the laboratory any known or suspected hazardous characteristics of the samples they intend to submit. This information should be provided in advance if available or with the samples as documentation on the Chain of Custody form. Please submit all relevant Safety Data Sheets (SDS) with each sample shipment.

Sample Receipt Notification
Upon receipt of samples at our lab, we will review the COC, measure and record the temperature, and contact you if there are sample discrepancies. You can view your sample information including the sample ID, tests to be performed, etc. via our web site at www.Eurofinsus.com\lanclabserv. Contact your Project Manager to receive an electronic Sample Acknowledgement with the sample ID, tests to be performed, COC, and sample receipt log.

Quality Control Samples
Eurofins Lancaster Laboratories Environmental, LLC will analyze and evaluate the required method quality control samples at no charge. If your project requires analysis of site-specific MS/MSD or Field QC (trip blanks, field blanks, field duplicates, equipment blanks, etc.), they are billable at the unit rates presented in the quotation.

Safe and Environmentally Responsible Waste Management (SERWM)
A fee, notated as Safe and Environmentally Responsible Waste Management (SERWM), will be applied to all invoices for each sample processed by the laboratory.

Minimum Charge per Sample Group
Eurofins Lancaster Laboratories Environment Testing, LLC reserves the right to charge a minimum $150 per sample group submitted to the lab.

Hold Analyses
Any samples received at the lab but not analyzed will be invoiced at $25 per sample.

Sample Storage/Disposal
We will hold your unused sample portions for 7 days past the date the analysis report is issued and, unless your samples need special handling, we will dispose of them following applicable regulations including but not limited to CFR, DOT, and USDA. All unused sample portions, bottles, labels, etc. are incinerated. There will be a monthly charge per sample if extended storage is needed. Please contact your account manager for rates.

Data Storage
Analysis reports and all supporting documentation including instrument printouts, raw data, and summary forms are stored for a minimum of 5 years.

Terms and Conditions

EUROFINS LANCASTER LABORATORIES ENVIRONMENT TESTING, LLC'S TERMS AND CONDITIONS OF SALE (Short Form)

Eurofins Lancaster Laboratories Environment Testing, LLC
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When a purchaser ("Client") places an order for laboratory, consulting or sampling services from Eurofins Lancaster Laboratories Environment Testing, LLC ("ELLET"), a Delaware corporation, ELLET shall provide the ordered services pursuant to these Terms and Conditions and the related Quotation or Price Schedule, or as agreed in a negotiated contract. In the absence of a written agreement to the contrary, a client order constitutes an acceptance by the Client of ELLET's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. Receipt of a Client's samples at an ELLET laboratory constitutes acceptance of these Terms and Conditions (in the absence of any other negotiated contract). No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by ELLET in writing.

1. **ORDERS AND RECEIPT OF SAMPLES**

1 A Client may place an order (i.e., specify a Scope of Work) either by submitting a purchase order to ELLET in writing or by telephone subsequently confirmed in writing, or by negotiated contract. Whichever option the Client selects for placing an order, the order shall not be valid unless it contains sufficient specification to enable ELLET to carry out the Client's requirements. In particular, samples must be accompanied by: a) adequate instruction on type of analysis requested, and b) complete written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. If a Client fails to provide these required disclosures accompanying the submission of samples, and such failure results in an interruption in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean-up and recovery.

2 The Client shall provide one week's advance notice of the sample delivery schedule, or any changes to the schedule, whenever possible. Upon timely delivery of samples, ELLET will use its best efforts to meet mutually agreed turnaround times. All turnaround times will be calculated from the point in time when ELLET has determined that it can proceed with defined work following receipt, inspection of samples, and resolution of any discrepancies in Chain-of-Custody forms and project guidance regarding work to be done (Sample Delivery Acceptance). Rush turnaround times not requested in advance of the delivery of samples and specifically agreed to by the lab are not guaranteed. If the Client changes the sample delivery schedule prior to Sample Delivery Acceptance, ELLET reserves its rights to modify its turnaround time commitment, change the date upon which ELLET will accept samples, or refuse Sample Delivery Acceptance for the affected samples.

3 ELLET reserves the right, exercisable at any time, to refuse or revoke Sample Delivery Acceptance for any sample which in the sole judgment of ELLET: a) is of unsuitable volume; b) may pose a risk or become unsuitable for handling, transport, or processing for any health, safety, environmental or other reason, whether or not due to the presence of any hazardous substance in the sample and whether or not such presence has been disclosed to ELLET by the Client; or

c) holding times cannot be met, due to passage of more than 48 hours from the time of sampling or 1/2 the holding time for the requested test, whichever is less.

1 Prior to Sample Delivery Acceptance, the entire risk of loss or damage to samples remains with the Client, except where ELLET provides courier services. In no event will ELLET have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from ELLET's premises. Client is responsible for assuring that any sample that contains or may contain any hazardous substance to be delivered to ELLET's premises is properly packaged, labeled, transported and delivered, all in accordance with applicable laws.

2 ELLET reserves the right to begin processing samples upon receipt, unless the Client specifically notifies ELLET in writing prior to sample receipt that the samples are to be held without preparation or other processing or pending receipt of a purchase order. ELLET shall under no circumstances be responsible for missed holding times or turnaround times or for re-sampling costs if samples are released from hold with less than 48 hours or 1/2 the holding time for the requested test remaining, whichever is less.

1. **PAYMENT TERMS**

1 Services performed by ELLET will be in accordance with prices quoted and later confirmed in writing or as stated in the Price Schedule. Quoted prices do not include sales tax. Applicable sales tax will be added to invoices where required by law.

2 Invoices may be submitted to Client upon completion of any sample delivery group. Billing corrections must be requested within 30 days of invoice date. Payment in advance is required for all clients except those whose credit has been established with ELLET. For clients with approved credit, payment terms are net 30 days from the date of invoice by ELLET, unless alternative terms have been agreed in a separate written agreement. Payment shall be made without retainage and shall not be contingent upon the receipt of funds from third parties. All overdue payments are subject to an additional interest and service charge of one- and one-half percent (1.5%) (or the maximum rate permissible by law, whichever is less) per month or portion

thereof from the due date until the date of payment. All fees are charged or billed directly to the Client. The billing of a third party will not be accepted without a statement, signed by the third party, acknowledging, and accepting payment responsibility in accordance with these payment terms.

3 If Client fails to make timely payment of its invoices, ELLET reserves the right to pursue all appropriate remedies, including withdrawing certifications, suspending work, and withholding delivery of data under this order without recourse. Client shall be responsible for all reasonable fees, expenses, and costs of collection including but not limited to arbitrator's and attorney's fees. ELLET reserves the right to refuse to proceed with work at any time based upon an unfavorable Client credit report.

3. CHANGE ORDERS, TERMINATION

3.1 Changes to the Scope of Work, price, or result delivery date may be initiated by ELLET after Sample Delivery Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. ELLET will not proceed with such changes until an agreement with the Client is reached on the amount of any cost, schedule change or technical change to the Scope of Work, and such agreement is documented in writing.

3.2 Changes to the Scope of Work, including but not limited to increasing or decreasing the work, changing test and analysis specification, or acceleration in the performance of the work may be initiated by the Client after Sample Delivery Acceptance. Such change must be documented in writing and may result in a change in cost and turnaround time commitment. ELLET's acceptance of such changes is contingent upon technical feasibility and operational capacity.

3.3 Suspension or termination of all or any part of the work may be initiated by the Client. ELLET will be compensated consistent with Section 2 of these Terms and Conditions. ELLET will complete all work in progress and be paid in full for all work completed.

4. WARRANTIES AND LIABILITY

4.1 Where applicable, ELLET will use appropriate and approved analytical test methods. ELLET has referenced these methods in its Laboratory Quality Manuals and has documented them in Standard Operating Procedures. ELLET reserves the right based on its reasonable judgment to deviate from these methodologies as necessary or appropriate to the extent required by the nature or composition of the sample, which deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or ELLET's Laboratory Quality Manuals. Client may request that ELLET perform according to a mutually agreed Quality Assurance Project Plan (QAPP). If samples arrive prior to agreement on a QAPP, ELLET will proceed with analyses under its standard Quality Manuals then in effect. ELLET will not be responsible for any resampling or other charges if work must be repeated to comply with a subsequently finalized QAPP.

4.2 ELLET shall start preparation and/or analysis within holding times provided that Sample Delivery Acceptance occurs within 48 hours of sampling or 1/2 of the holding time for the test, whichever is less,

unless the Client has specifically requested that ELLET hold the samples without preparation or other processing or pending receipt of a purchase order. Where resolution of inconsistencies leading to Sample Delivery Acceptance does not occur within this period, ELLET will use its best efforts to meet holding times and will proceed with the work provided that, in ELLET's judgment, the chain-of-custody or definition of the Scope of Work provide sufficient guidance. Reanalysis of samples to comply with ELLET's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met.

4.3 ELLET warrants that it possesses and maintains all licenses and certifications that are required to perform services under these Terms and Conditions provided that such requirements are specified in writing to ELLET prior to Sample Delivery Acceptance. ELLET will notify the Client in writing of any decertification or revocation of any license, or notice of either, that affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by ELLET in connection with any services performed by ELLET or any results generated from such services, and ELLET gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representative of ELLET is authorized to give or make any other representation or warranty or modify this warranty in any way.

4.5 Client's sole and exclusive remedy for breach of warranty in connection with any services performed by ELLET will be limited to repeating any services performed, contingent on the Client's providing, at the request of

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ELLET and at the Client's expense, additional sample(s) if necessary. Any reanalysis requested by the Client generating results consistent with the original results will be at the Client's expense. If resampling is necessary, ELLET's liability for resampling costs will be limited to actual cost or one hundred and fifty dollars ($150) per sample, whichever is less.

4.6 ELLET's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services performed or $100,000. All claims, including those for negligence, shall be deemed waived unless suit thereon is filed within one year after ELLET's completion of the services. Under no circumstances, whether arising in contract, tort (including negligence), or otherwise, shall ELLET be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared.

4.7 In no event shall ELLET have any responsibility or liability to the Client for any failure or delay in performance by ELLET that results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of ELLET. Such causes and circumstances include, but are not limited to, acts of God, acts of Client, acts or orders of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown highly contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond ELLET's reasonable control.

5. RESULTS, WORK PRODUCT

5.1 Data or information provided to ELLET or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by ELLET of payment for the entire order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by ELLET for performance of work will be retained by ELLET. Client shall not disclose such information to any third party without ELLET's express prior consent.

5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by ELLET shall be held in confidence
(unless such information is generally available to the public or is in the public domain or Client has failed to pay ELLET for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.

5.3 Should the results delivered by ELLET be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold ELLET's right to independently defend its data.

5.4 ELLET reserves the right to perform the services at any laboratory in the ELLET network. If a Client has requested a particular location for the work, ELLET will inform the Client when operational constraints require the work to be performed at another ELLET location. In addition, ELLET reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in ELLET's sole judgment, it is reasonably necessary, appropriate or advisable to do so. ELLET will in no way be liable for any subcontracted services (outside the ELLET network) except for work performed at laboratories which have been audited and approved by ELLET.

5.5 ELLET will dispose of non-hazardous samples, sample extracts and digestates 30 days after the final analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable federal, state or local requirements. Charges for disposal will be billed to the client. Alternatively, samples can be returned to the client for disposal. Cost of return shipping will be billable to the client. Air samples in Summa canisters and tedlar bags are used and the containers cleaned immediately after testing, such that those samples are not retained. Longer storage periods may be requested and may be accommodated if space allows, and for an additional charge. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at its own expense. ELLET reserves the right to return to the Client any sample or unused portion of a sample that is not within ELLET's permitted capability or the capabilities of ELLET's designated waste disposal vendor(s). ALL DIOXIN, MIXED WASTE, AND RADIOACTIVE SAMPLES WILL BE RETURNED TO THE CLIENT, unless
prior arrangements for disposal are made.

5.6 Unless a different time period is agreed to in an order under these Terms and Conditions, ELLET agrees to retain all records for five (5) years.

5.7 If ELLET is required to respond to legal process related to services for Client, Client agrees to reimburse ELLET for hourly charges for personnel involved in the response and attorney's fees reasonably incurred in

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obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation. Additional consulting beyond that normally associated with lab reports will be billed at ELLET's current published rates.

6. INSURANCE

6.1 During the performance of services under these Terms and Conditions, ELLET shall maintain in force Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over ELLET's employees who are engaged in the performance of the work. ELLET shall also maintain during such period Comprehensive General and Contractual Liability (limit of $1,000,000 per occurrence; $2,000,000 aggregate), Comprehensive Automobile Liability, owned and hired ($1,000,000 combined single limit), Professional Liability Insurance (limit of $5,000,000 per claim/aggregate), and Pollution Liability Insurance (limit of $1,000,000 per claim/aggregate).

7. MISCELLANEOUS PROVISIONS

7.1 These Terms and Conditions, together with any additions or revisions which may be agreed to in writing by ELLET, embody the whole agreement of the parties and provide the only remedies available. There are no promises, terms, conditions, understandings, obligations or agreements other than those contained herein, and these Terms and Conditions shall supersede all previous communications, representations, or agreements, either verbal or written, between the Client and ELLET. These Terms and Conditions, and any transactions or agreements to which they apply, shall be governed both as to interpretation and performance by the laws of the state where ELLET's services are performed.

7.2 The invalitidy or unenforceability, in whole or in part, of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of these Terms and Conditions, the intent of the parties being that the provisions be severable. The section headings of these Terms and Conditions are inteded soley for convenient reference and shall not define, limit or affect in any way these Terms and Conditions or their interpretations. No waiver by either party of any provisions, term or condition hereof or of any obligation of the other party hereunder shall constitute a waiver or any subsequent breach or other obligation.

7.3 The oblitations, liabilities, and remedies of the parties, as provided herein, are exclusive and in lieu of any others available at law or in equity. Indemnifications, releases from liability and limitations of liability shall apply, notwithstanding the fault, negligence or strict liability of the party to be indemnified, released, or whose liability is limited, except to the extent of sole negligence or willful misconduct.

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Liquids

Matrix	Method	Test Description	Analyte	RL	MDL	Units
Water	537 IDA	List of 40 (EPA 1633 Draft Method)	Perfluorobutanoic acid	5.00	2.00	ng/L
			Perfluoropentanoic acid	2.00	0.500	ng/L
			Perfluorohexanoic acid	2.00	0.900	ng/L
			Perfluoroheptanoic acid	2.00	0.500	ng/L
			Perfluorooctanoic acid	2.00	0.500	ng/L
			Perfluorononanoic acid	2.00	0.500	ng/L
			Perfluorodecanoic acid	2.00	0.500	ng/L
			Perfluoroundecanoic acid	2.00	0.500	ng/L
			Perfluorododecanoic acid	2.00	0.500	ng/L
			Perfluorotridecanoic acid	2.00	0.500	ng/L
			Perfluorotetradecanoic acid	2.00	0.500	ng/L
			Perfluorobutanesulfonic acid	2.00	0.500	ng/L
			Perfluoropentanesulfonic acid	2.00	0.500	ng/L
			Perfluorohexanesulfonic acid	2.00	0.500	ng/L
			Perfluoroheptanesulfonic acid	2.00	0.500	ng/L
			Perfluorooctanesulfonic acid	2.00	1.00	ng/L
			Perfluorononanesulfonic acid	2.00	0.500	ng/L
			Perfluorodecanesulfonic acid	2.00	0.500	ng/L
			Perfluorododecanesulfonic acid (PFDoS)	3.00	0.500	ng/L
			1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	2.00	0.500	ng/L
			1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	5.00	4.20	ng/L
			1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	3.00	1.00	ng/L
			Perfluorooctanesulfonamide	2.00	0.700	ng/L
			NMeFOSA	3.00	1.00	ng/L
			N-ethylperfluoro-1-octanesulfonamide	5.00	1.00	ng/L
			NMeFOSAA	2.00	0.600	ng/L
			NEtFOSAA	3.00	0.500	ng/L
			2-(N-methylperfluoro-1-octanesulfonamido) ethanol	3.00	1.00	ng/L
			2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	3.00	1.00	ng/L
			HFPO-DA	3.00	1.00	ng/L
			4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	0.500	ng/L
			PFECA F	2.00	0.200	ng/L
			PFECA A	2.00	0.200	ng/L
			PFECA B	2.00	0.200	ng/L
			9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	2.00	0.500	ng/L

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Liquids

Matrix	Method	Test Description	Analyte	RL	MDL	Units
Continued						
			11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	2.00	0.500	ng/L
			PFEESA	2.00	0.200	ng/L
			3:3 FTCA	2.00	0.300	ng/L
			5:3 FTCA	2.00	0.200	ng/L
			7:3 FTCA	2.00	0.300	ng/L
		Isotope Dilution				
			13C4 PFBA			
			13C5 PFPeA			
			13C5 PFHxA			
			13C4 PFHpA			
			13C8 PFOA			
			13C9 PFNA			
			13C6 PFDA			
			13C7 PFUnA			
			13C2-PFDoDA			
			13C2 PFTeDA			
			13C3 PFBS			
			13C3 PFHxS			
			13C8 PFOS			
			13C8 FOSA			
			d3-NMeFOSAA			
			d5-NEtFOSAA			
			M2-4:2 FTS			
			M2-6:2 FTS			
			M2-8:2 FTS			
			13C3 HFPO-DA			
			d7-N-MeFOSE-M			
			d9-N-EtFOSE-M			
			d5-NEtPFOSA			
			d3-NMePFOSA			
			13C-6:2 FTCA			
Water	ELLE SOP	Total Fluorine	Total Fluorine (TF)	2.00	1.00	ug/L

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Analytical Sample Information

Analysis Method	Matrix	Preservative	Client Sub List Desc Container	Volume Required	Holding Time
Fluorinated Alkyl Substances			List of 40 (EPA 1633 Draft Method)		
PFC_IDA	Water	None	Plastic 250ml - unpreserved	500 mL	28 Days
Total or Organic Fluorine by Combustion Ion Chromatography			Total Fluorine		
CIC_Fluorine	Water	None	Plastic 250ml - unpreserved	500 mL	90 Days

Hold Times listed above represent the minimum allotted time between sampling and lab extraction, prep or analysis.

Multiple analyses may be consolidated into fewer containers. Please contact your Project Manager for clarification when requesting sample containers.

Except for some special tests, all samples should be kept cold at 6 degrees C.

SB158_EGally-MPEN-SOPC_fav (1).pdf
Uploaded by: Eric Gally
Position: FAV

Testimony: SB 158: Pesticide Registration – PFAS Testing – Requirements

Submitted to: The Senate Committee on Education, Energy, and the Environment (EEE)
Submitted by: The Maryland Pesticide Education Network and
The Smart on Pesticides Coalition of 112 organizations and businesses
Position: In Support

February 2, 2023

Dear Chair Feldman, Vice Chair Kagan and Members of the Committee,

The Maryland Pesticide Education Network and its Smart on Pesticides Coalition comprised of 112 organizations and businesses**,** support passage of SB 158 banning all sales and uses of PFAS-containing pesticides in Maryland. We are a non-profit organization dedicated to protecting the public and the environment from toxic pesticides and promoting healthy alternatives.

- **PFAS exposures (*per* and *polyfluoroalkyl substances)* are linked to serious long-term health impacts for all life, even at low levels of exposure.**

- **PFAS are called the "forever chemicals" because like DDT, lead, and ozone** they continue to be alarmingly harmful for extremely prolonged periods and pose serious harm for generations to come — unless PFAS are addressed with long-term strategies to overcome their harmful impacts. PFAS is a class of chemicals and while only 1,000 are used commercially, there over 12,000 that have been identified.
- **Recently, there has been welcome good news regarding the Earth's fragile ozone layer**: Phasing out harmful ozone-depleting chemicals has led to the partial recovery of the ozone hole. And we have reduced lead levels in Maryland, thanks to needed state laws and policies. Problems that once seemed insurmountable are now, due to wise leaders acting, are increasingly becoming success stories. Decades of hard work curbing these harmful chemicals has led to improvements in our environment and hope for better public health.
  - ❖ **We need to tackle PFAS in pesticides with a similar strategy.**

> ***"If the intent was to spread PFAS contamination across the globe there would be few more effective methods than lacing pesticides with PFAS,"*** PEER Science Policy Director Kyla Bennett, and former EPA attorney

Maryland annually registers about 14,000 pesticides for sales and use in our state. To date, we have little knowledge regarding the number of these pesticides which contain PFAS, however increasing scientific evidence suggests that many do.

Consider this:

- **EPA's lifetime safe level for the most notorious PFAS, PFOS, in drinking water is 0.02 parts per trillion (ppt).** New research found extraordinary high levels of this PFAS in common pesticides used on food crops, in the millions parts per trillion; **the crops grown in these fields tested ten thousand times higher than EPA's lifetime drinking water limit of 0.02 parts per trillion**.
  - ❖ This **recent study** in the Journal of Hazardous Materials Letters, found PFAS in 6 out of 10 **tested pesticides at levels ranging from 4 million to 19 million ppt.** Based on the 6 PFAS-contaminated pesticides tested, Maryland registers 346 pesticides products containing these active ingredients, amplifying concern similar products registered in Maryland may also contain PFAS.

- **Other recent research shows dangerous levels of toxic PFAS in freshwater fish**: Eating just one Maryland rockfish could be equivalent to drinking PFAS-tainted water for a month. Keep in mind, these numbers are for a single exposure; we may be eating tainted food every day and it accumulates in our bodies.
- **PFAS are considered "forever chemicals" because they remain in our bodies for years**. Given our ongoing cumulative exposures to PFAS they remain present in our bodies.
- **To date, there is no research on the synergistic effects of combining PFAS with pesticides**. Pesticides and PFAS each are already known to have long-term adverse health impacts which raises serious alarm bell for public health experts.
- **Pesticides do not require PFAS to be effective** as noted by two mosquito control product samples tested by EPA used by the Maryland Dept. of Agriculture (MDA) in Maryland. There are alternative additives to PFAS for increasing delivery impacts of pesticides.

Encouraging news

3M a global chemical manufacturer of PFAS recently announced its plans to terminate production of PFAS by 2025. Market shifts like this are welcome and crucial but must be accompanied by state-level policy changes to protect all life from further harm. While eliminating exposure to PFAS appears to be a daunting task, we can make a difference by eliminating a significant unnecessary source of PFAS exposure in our state and fill the void left by federal regulators who have so far failed to address this crucial issue.

Last year, Maryland legislators wisely took a crucial first step to do so by banning PFAS in firefighting foam, food packaging, carpets, and rugs.

Similar to other toxic chemicals that cause dangerous health impacts such as lead, asbestos, and the pesticide DDT, the first step is identifying the problem. As with these overwhelming issues we have conquered, once identified, the solutions were evasive, and the threat seemed insurmountable. This is where we are with PFAS. The issue and even the solutions have been scientifically clarified. The time is now for addressing the solutions.

Why more PFAS use guardrails are needed

PFAS exposure through pesticides presents a broader risk to Marylanders and our environment than common household items because pesticides are so pervasive. There are 14,000 of pesticides used in Maryland, and they are everywhere.

- Everyone is subjected to pesticides where we work and play – in public spaces, healthcare facilities, schools, and our neighborhoods.
- Scientists in multiple labs have found dangerous levels of PFAS in commonly used pesticides across the country. *A recent study in the Journal of Hazardous Materials Letters, "Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS," found extremely high levels of PFAS) in 6 out of 10 tested*

PFAS in pesticides is an Environmental Justice issue

Maryland's overburdened and underserved communities are at even greater risk from PFAS in pesticides.

- Farmworkers and families in agricultural areas bear greater exposures from pesticides applied in farming.
- Those living in poverty are more likely to fish to supplement protein, yet USGS has reported Maryland fish are testing with PFAS at levels as high as 500,000 parts per trillion.
- People of color are more likely to be harmed; pesticide use against rodent and cockroaches is often higher in lower-income housing due to age of buildings, poor maintenance and often crowded living conditions.

Background on finding PFAS in pesticides used in Maryland

- **In 2021, PFAS were found at notably toxic levels in pesticides used** by the Maryland Department of Agriculture (MDA) **annually for mosquito control in over 2,000 Maryland communities.** One product MDA notes on its program webpage, Mavrik Perimeter, was found by the Massachusetts Dept. of the Environment to contain 16,703 ppt. Once again, compare this number to EPA's *lifetime* exposure for PFAS in drinking water: 0.02 ppt.

- While there is research underway to extract PFAS from water, there is still no way to dispose of the extracted *forever* chemical**.**

These chemicals have made their way into our drinking water, the Chesapeake Bay and its tributaries, the soil, our food, and consequently, our bodies.

Scientists have provided notable evidence that both pesticides and PFAS runoff into Maryland waterways. PFAS-containing pesticides clearly add to this toxic mix from which we and our children swim, eat fish, and drink, as when communities draw their water from Maryland's Potomac and Patuxent rivers.

Human health impacts

- PFAS are linked to serious health impacts even at low levels of exposure. There is strong evidence linking PFAS to kidney, testicular, prostate, and breast cancer, birth defects and developmental damage in infants, childhood obesity, thyroid disease, high cholesterol, non-alcoholic fatty liver disease, and impaired immune function.
- Exposure to PFAS has been associated with increased COVID-19 susceptibility and with an increased risk of more severe outcomes from the disease
- Synthetic pyrethroid pesticides used in our state for mosquito control and PFAS chemicals can both act as endocrine disruptors, meaning they can interfere with people's hormone systems—which can result in serious health complications. This presents a public health threat of serious magnitude. Furthermore, the effects of combining two endocrine disrupting chemicals have yet to be studied.

Other species health impacts

- Science has shown PFAS is causing harm to fish and wildlife, including pollinating bees and birds.
- Maryland has found alarming levels of PFAS in Bay waters, tributaries, and fish. These were so high that the Maryland Department of the Environment issued a warning against eating three fish species caught in Piscataway Creek in Prince Georges County.
  - New research shows dangerous levels of toxic PFAS in freshwater fish. "You'd have to drink an incredible amount of water — we estimate a month of contaminated water — to get the same exposure as you would from a single serving of freshwater fish," – *study co-author David Andrews*

The solution

SB 158 ensures that independent lab testing, considered to be **valid methodologies for testing pesticides for PFAS, by EPA or MDE as is the case with the methods in the bill,** and **paid for by the manufacturer**, will identify pesticides that are PFAS-free for sales and use in Maryland. *All* pesticides, including those considered minimum risk (25B category), must be annually tested. **It is on both the lab and the manufacturer to provide truthful lab-tested evidence**. Scientists, including Drs. Peaslee and Lassee (see their written testimony) have used such tests in their research related to PFAS in pesticides. While in all lab testing, including blood testing done by labs for various health conditions, a result can be a false positive or false negative, we all have the option of redoing testing when findings are unclear. So too, can a manufacturer have a product retested if there is any doubt regarding the results. While we live in an imperfect word, **we must still do our very best to use the tools we** have to protect our babies, bees, and the Bay.

It's time to turn off the tap

- **SB 158 addresses the need to stop the use of pesticide-containing PFAS chemicals** in our communities and is a critical step for states in order to fill the void left by federal regulators. Maine recently banned pesticides containing PFAS and other states are proposing to do so.
- SB158 prohibits all sales and use of pesticides that contain PFAS by 2026 in Maryland.
- Maryland residents need this immediate protection from unnecessary PFAS exposures through pesticides and the food we consume.
- This bill would not cost Maryland—the multi-billion-dollar manufacturers would be responsible for paying for the testing.

We urge a positive report on SB 158.

Smart On Pesticides Coalition Members

The Smart on Pesticides Maryland Campaign is a coalition of 112 concerned Maryland citizens, organizations, groups, and businesses working for better protections and data to keep our families, our waterways, and our wildlife safe from toxic pesticides.

A.I.R. Lawncare & Landscaping Services
Alliance of Nurses for a Healthy Environment
American Academy of Pediatrics – Md. Chapter
American Bird Conservancy
American Public Health Association – Md. Chapter
Anacostia Watershed Society
Annapolis Green
Anne Arundel Beekeepers Association
Arundel Rivers Foundation
Assateague Coastal Trust
Audubon Maryland – DC
Audubon Naturalist Society
Baltimore Backyard Beekeepers Network
Baltimore Bird Club
Bee Friendly Apiary
Beyond Pesticides
Big City Farms
Bowie-Upper Marlboro Beekeepers Association
CATA, Farmworkers Support Committee
Carroll County Beekeepers Association
Cecil Bird Club
Center for Biological Diversity
Center for Food Safety
Central Maryland Beekeepers Association
Central Maryland Ecumenical Council/Ecumenical Leaders Group
Centro de los Derechos del Migrante
Charm City Meadworks
Charles Smith Apiaries
Chesapeake Physicians for Social Responsibility
Children's Environmental Health Network
Clean Bread and Cheese Creek
Clean Water Action
Common Market Co-Op
Conservation Community Consulting
Cottingham Farm
Crossroads Community Food Network
Earth Coalition
Earthjustice
Eastern Shore Food Hub
Environment Maryland
Fair Farms
F&D Apiaries
Farmworker Justice
Food and Water Watch
Fox Haven Farm and Learning Center
Frederick County Beekeepers Association
Friends of Briers Mill Run
Friends of Lower Beaverdam Creek
Friends of Quincy Run
Friends of the Earth
Greenbelt Forest Preserve Butterfly Brigade
Heathcote – School of Living
Hampden Community Council
Hereford Bed & Biscuit
HoneyFlower Foods
Howard County Beekeepers Association
Howard County Bird Club
Interfaith Partners of the Chesapeake
Interfaith Power and Light
Johns Hopkins Center for a Livable Future
Karma.Farm
KW Landscaping
Latino Farmers & Ranchers Association – Md Chapter
League of Women Voters of Maryland
Learning Disabilities Association – Md Chapter
Lower Susquehanna Riverkeeper
Maryland Autism Project
Maryland Bass Nation
Maryland Children's Environmental Health Coalition
Maryland Conservation Council
Maryland Environmental Health Network
Maryland Ethical Cannabis Association
Maryland League of Conservation Voters
Maryland Nurses Association
Maryland Organic Food and Farming Association
Maryland Ornithological Society
Maryland Pesticide Education Network
Maryland Public Interest Research Group
Maryland United for Peace and Justice
Maryland Votes for Animals
McDaniel Honey Farm
Migrant Clinicians Network
Moms Clean Air Force
MOM's Organic Market
Montgomery Countryside Alliance
National Aquarium
Natural Resources Defense Council
Organic Consumers Association
Pearlstone Conference Centera
Perfect Earth Project
Pesticide Action Network – North America
Potomac Riverkeeper
Queen Anne's Conservation Association
Rachel Carson Council
Really Raw Honey Company
Red Top Farm
Rodale Institute
Rosedale Farm
Ruscombe Community Health Center
SafeGrow Montgomery
Safe Minds
Safe Skies Maryland
Sierra Club – Maryland Chapter
Spa Creek Conservancy
The Flower Factory
Towson Estates Association
Trout Unlimited
Washington County Beekeepers Association
Waterkeepers Chesapeake
Westport Farmers Market
Westport Neighborhood Association
Wicomico Environmental Trust

PROTECT MARYLANDERS FROM DANGEROUS PFAS-CONTAINING PESTICIDES

Pass the **Pesticide Registration – PFAS Testing – Requirements Bill (SB 158/ HB 319)** to keep Maryland safe from these dangerous forever chemicals.

Scientists in multiple labs have found dangerous levels of PFAS in several pesticides commonly used throughout the country.[6]

New research[7] found extraordinarily high levels of PFAS in common pesticides used on food crops; the crops grown in these fields tested at 100 times the EPA's lifetime drinking water limit.

Decades ago, when we learned the dangers of lead and asbestos, we took action. Now that we are understanding the dangers of PFAS, we can turn the tide and protect our health by enacting smart, common-sense regulations.

What are PFAS?

PFAS are known as **"forever chemicals"**—and do not break down in the environment. There is also no known way to destroy or safely dispose of PFAS. As a result, these toxic products have already made their way into our water systems, including the Chesapeake Bay[1] and our drinking water, our soil, our food,[2] and consequently, into our bodies.[3]

EVEN LOW EXPOSURE TO PFAS IS LINKED TO A MULTITUDE OF LONG-TERM SERIOUS HEALTH[4] IMPACTS[5], INCLUDING:

- **KIDNEY, TESTICULAR, AND BREAST CANCER**
- **MORE SERIOUS COVID-19 INFECTION OUTCOMES**
- **HIGH CHOLESTEROL**
- **IMPAIRED FUNCTIONING OF THE LIVER, KIDNEYS, AND IMMUNE SYSTEM**
- **DEVELOPMENTAL DAMAGE TO INFANTS**
- **CHILDHOOD OBESITY**
- **BIRTH DEFECTS**
- **THYROID DISEASE**
- **LESS EFFECTIVE RESPONSES TO VACCINES**

Why do we need this legislation?

Millions of pounds of pesticides are applied annually in Maryland—that end up in our air, soil, and the Bay—and we do not know if they contain PFAS. Unfortunately, action to protect public health at the EPA has been blocked by the chemical industry. As a result, the EPA has allowed **more than 12,000 PFAS**[8] on the market with **little oversight**, despite a growing body of data on their hazards. There is no research on the synergistic effects of combining these "forever chemicals" with pesticides that are already known to have acute and long-term adverse health impacts. The PFAS contamination crisis exists across the U.S.—and we must take action at the state level.

What will the bill DO?

Pesticide Registration – PFAS Testing – Requirements Bill (SB 158/HB 319) requires all manufacturers of mosquito control products in the state provide annual independent lab testing and certification to prove the pesticide product is PFAS-free, beginning January 1, 2024. Then by January 1, 2026, manufacturers of all pesticides must provide this same test.

Who will the bill HELP?

Reducing PFAS contaminants in our air, water and soil will make all Marylanders—children and adults, especially pregnant women—safer.

"If the intent was to spread PFAS contamination across the globe there would be few more effective methods than lacing pesticides with PFAS," stated PEER Science Policy Director Kyla Bennett, a scientist and attorney formerly with EPA.

» *TAKE ACTION TODAY!*

SmartOnPesticides.org

FOR MORE INFORMATION, PLEASE EMAIL
raindrop@mdpestnet.org.

SMART on PESTICIDES maryland
For Safe Water & Healthy Kids

[1] https://www.ewg.org/research/national-pfas-testing/
[2] https://www.fda.gov/food/chemical-contaminants-food/testing-food-pfas-and-assessing-dietary-exposure
[3] https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html
[4] https://www.atsdr.cdc.gov/pfas/health-effects/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.atsdr.cdc.gov%2Fpfas%2Fhealth-effects.html
[5] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/
[6] https://civileats.com/2022/11/07/pfas-forever-chemicals-pesticides-pollution-farmland-mosquito-control-epa-inert-ingredients
[7] https://www.sciencedirect.com/science/article/pii/S266691102200020X "*Journal of Hazardous Materials Letters*, "Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS
[8] https://www.northcarolinahealthnews.org/2021/03/09/environmentalists-say-trumps-epa-fell-far-short-in-the-fight-against-pfas/
[9] https://civileats.com/2022/11/07/pfas-forever-chemicals-pesticides-pollution-farmland-mosquito-control-epa-inert-ingredients

Maryland Pesticide Education Network

EVALUATING HEALTH & ENVIRONMENTAL SCIENCE

A Guide for Legislators

Scientific evidence is the underpinning for policy decisions regarding health. This checklist offers guidance for legislators listening to and assessing scientific testimony and scientific arguments on these often difficult questions, as well as help in questioning witnesses during a hearing.

1. What is the purpose, and what is the source of the research being presented?

The goal of a study may influence the outcomes. For instance, studies that a manufacturer must undertake to submit a chemical or drug for federal registration are different from studies performed by independent scientists seeking to understand impacts of chemicals on humans, animals, or the ecosystem.

What you need to know: Are government findings based on industry-provided research? Are they based on a review of all available sources?

Example: In the debate of e-cigarette / vapor product regulation, research reports by the FDA's Division of Pharmaceutical Research was very credible because it reflected totally independent testing.

2. Have the studies been peer-reviewed?

Independent scientific research is subject to review by a panel of "peers"; these are other scientists with no stake in the findings and no conflicts of interest. Peer review ensures accuracy in methodology and statistical significance, as well as proper interpretation of the results. When a study passes peer review, it is usually published in a scientific journal, such as Environmental Health Perspectives or the Journal of the American Medical Association. This is a transparent process, ensuring that rigorous standards are upheld.

What you need to know: Are the studies being cited peer reviewed? If not, consider the source. Blogs and newspaper articles are not peer-reviewed materials, but may link back to a peer-reviewed source.

Peer Reviewed

A panel of independent experts in the same scientific field, who have no connection to the study and no conflicts of interest, have reviewed it and judged it to be valid and worthy of publication.

3. How certain is "certain enough" to act?

Scientists examine facts and complex information and then look for a preponderance of evidence. While scientists routinely disclose elements of uncertainty in their research, they form their conclusions based on the weight of the evidence.

What you need to know: Is there sufficient evidence regarding possible harms that warrants taking action? Is there sufficient evidence of safety to justify inaction?

Example: Based on the preponderance of evidence of likely harm, we passed seat belt laws and prevented children from drinking alcohol.

4. Are the scientists being too cautious?

Scientists are conservative regarding "certainty." They use a "95% confidence test" in order to conclude that two observations that happen together are more than accidental and probably causal. When it comes to taking action,

however, public and environmental health experts recommend action based on sufficient scientific evidence to warrant concern and not on a specific percentage.

What you need to know: What are the risks and what could be the harm if we wait for more research to be conducted before taking action?

Example: Laws limiting human exposure to DDT, lead, tobacco and alcohol were all passed long before a 95% confidence test was met. These laws were based on a preponderance of evidence rather than 95% certainty.

Weight of the Evidence

This term refers to a judgment in the scientific community that most studies to date confirm a particular conclusion. Scientists are always open to new findings, so they may avoid using terms like "certainty", "100%" or "we are sure."

5. Are the findings influenced by funding source, trade secrets, or suppression of data?

The design of a scientific study may be influenced by the source of its funding. This has been well documented by independent observers. It is therefore reasonable and prudent for legislators to ask all scientists and those who cite scientific research about their sources of funding.

What you need to know: What are the sources of funding for the work being cited? Were any data omitted due to trade secret protections or similar reasons?

Example: 1) The source of funding for a study can influence important findings or cause contrary results to be omitted from the study's report. 2) Important data that an industry provides to a federal agency before marketing will not be in the public domain and may not have been subjected to peer review.

6. Has anyone addressed the economic harm associated with inaction?

Policy-makers must weigh not only the cost of taking action but also the cost of inaction. Science offers insight into the costs of inaction.

What You Need to Know: What public and private costs may be incurred if we do not take action on this proposed policy?

Example: A 2015 peer reviewed study estimated the costs to the EU of human exposure to endocrine disruptors at $209 billion annually in medical care and lost productivity. *(Trasande et al J Clin Endocrinol Metab. 2015 Apr; 100(4): 1245–1255.)*

Note: The fiscal note on a bill will not typically assess the costs of inaction. It addresses only the costs of adopting the policy, and usually only the costs to government.

7. Have long term effects been assessed?

Early life exposures can create high risks in later life. An example is the link between lead poisoning and long-term harms to children, or between tobacco and cancer. Over time, human exposures to multiple chemicals will have interactive effects that may be quite different from the effects of a single chemical.

What you need to know: Does the science presented also address the long-term effects of exposure? If not, is that because the research does not exist?

Note: Federal agency review does not establish absolute safety. The US EPA registers chemicals based on "reasonable certainty of no harm" and has yet to address the synergistic effects of chemicals in real life, such as interactions with other chemicals in the environment, medications, and illness.

SB158_GRoss_ACT_FAV.pdf
Uploaded by: Gabrielle Ross
Position: FAV

Assateague Coastal Trust – PO Box 731, Berlin, MD 21811 – 410-629-1538

Testimony in Support of SB 158

<u>This testimony covers these three key points:</u>

1. **Problems with pesticides and how they affect the flora/fauna and water quality**
2. **PFAS are already found in MD waters with fish consumption advisories**
3. **How pesticides affect watermen, hunters, and aquaculture businesses on the shore**

February 2, 2023

Dear Members of the Committee:

Thank you for this opportunity to submit testimony in support SB 158**,** on behalf of Assateague Coastal Trust (ACT), the Waterkeeper program for the lower Eastern Shore of Maryland. ACT protects and defends the health of Delmarva's coastal waters through advocacy, education, science, and the enforcement of just and equitable clean water laws. If enacted, SB 158 will be vital for citizens of the lower Eastern Shore of Maryland.

The severity in which pesticides are affecting our bay and coastal waterways are vast. This legislation, **SB 158 Pesticide Regulation – PFAS Testing – Requirements** will require manufacturers test pesticide products for PFAS by an approved lab and provide lab certification they are PFAS-free, as part of annual pesticide registration in the state. This bill will help protect the health of Maryland residents and the environment amidst an emerging PFAS crisis.

Per- and polyfluoroalkyl substances ("PFAS") are a dangerous class of chemicals linked to cancer and other long-term health impacts. Their strong carbon-fluorine bond makes them unable to break down in the environment and are known as "forever chemicals". There is also no known way to destroy or safely dispose of PFAS. This forever quality and the lack of disposal methods means that these chemicals have already made their way into our water systems, our food, and eventually, our bodies.

These forever chemicals have been found at dangerously toxic levels in pesticides used to grow crops and in pesticides widely used for mosquito control, including the Maryland Department of Agriculture's (MDA) mosquito control program which sprays often weekly in 2,100 Maryland communities. In the case of a study that found 6 of 10 common pesticides containing PFAS in the millions of parts per trillion from Texas Tech University, the results are especially chilling for Maryland's eastern shore, given that millions of pounds of pesticides are applied to Maryland farmland annually.

- **With increasing severity of rain events happening over the past few years, we are seeing an increase in nutrients, pollutants, PFAS, and declines in important species in our coastal waterways from the runoff and over application of these pesticides.** More than three-quarters of the Chesapeake Bay's tidal waters are impaired by chemical contaminants. From the insecticides put on farm fields to the cleaners we use to disinfect our homes and hospitals, contaminants enter the Bay and its tributaries and harm the health of both humans and wildlife.

In October 2021, MDE issued its first fish consumption advisory related to PFAS/PFOS in Prince George's County. MDE collected fish from routine monitoring, or core, stations. MDE also added two fish tissue sample locations in Piscataway Creek. MDE found elevated concentrations of PFOS in redbreast sunfish, yellow bullhead catfish and largemouth bass, leading to the new guidelines. MDE is also expanding sample collection in the larger Potomac area between fall 2021 and fall 2022.While this is not my watershed that I live and work in, the likelihood that this will affect me and other watersheds in the state of Maryland is certain if we do not regulate these forever chemicals better and ban them once and for all in pesticides.

- **Watermen, hunters, and aquaculture businesses are seeing a direct impact on how they make a living.** Pesticides accumulate the tissue of blue crabs and remains there for a long time because it is very difficult for crabs to metabolize.[i] This results in long-term health impacts that may eventually lead to death of the crabs. We are also seeing this in fish, deer, as well as bivalves. Not only does this affect watermen and their ability to make a living but the health of every Marylander who eat these species are greatly impacted by having the pesticides, PFAS/PFOS transfer over to our bodies through the process of biomagnification. Many watermen have even told me that as they were pulling their pots down along the western shores of Chincoteague Bay, they've had spray planes go over top of them and deposit spray on them!

The Time to Act Is Now

Over the years we have seen the misuse, overapplication and misrepresentation of how these pesticides affect the health of Maryland residents, its flora and fauna and ultimately impacts on environment. Our organization has supported several very needed pesticide protections which have passed the Maryland General Assembly to become law, but then experience problems with implementation and enforcement.

Eastern shore residents want to see change and better implementations when it comes to pesticide use. Maryland is far behind on legislation that will ultimately protect its' citizens and it's economic well- being. The state needs to act fast to make the necessary changes that affect our waterways and communities.

We are urging you to please pass this legislation, the SB 158 Pesticide Regulation – PFAS Testing – Requirements, ensuring that no pesticide product containing PFAS is used in the state.

For all these reasons, Assateague Coastal Trust urges a favorable report on SB 158

Sincerely,

Gabrielle Ross
Assateague Coastkeeper, Assateague Coastal Trust

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[i] Horst, *supra* at 124.

https://news.maryland.gov/mde/2021/10/15/department-of-the-environment-issues-first-fish-consumption-advisory-for-pfas/#:~:text=Department%20of%20the%20Environment%20issues%20first%20fish%20consumption%20advisory%20for%20PFAS,- Posted%20by%20japperson&text=BALTIMORE%20(Oct.,per%2D%20and%20polyfluoroalkyl%20substances)MDE issues first fish consumption advisory

SB158_GPeaslee_final_FAV.pdf
Uploaded by: Graham Peaslee
Position: FAV

UNIVERSITY OF
NOTRE DAME
Department of Physics and Astronomy

Testimony in Support of SB 158 Pesticide Regulation – PFAS Testing – Requirements

February 2, 2023
Committee: Education, Energy, and the Environment
Submitted by: Graham Peaslee, Professor of Physics
Position: Favorable

I am Graham Peaslee, a professor at the University of Notre Dame and **I specialize in studying the fate and transport of PFAS in commercial products and in the environment.** I have **expertise in analytical methods used to measure PFAS and total organic fluorine** as a rapid screening method for PFAS. My research has led to over 25 peer-reviewed publications on PFAS and more than 230 total publications in my 35-year career in chemistry and physics. I am a Fellow of the American Chemical Society, and I have active grants from US DoD, US EPA, USGS, and Water Research Foundation to measure PFAS in the environment.

I will first briefly introduce PFAS and why it is essential to restrict them in pesticides (and every other product that releases them directly into our water supply.)

The grave threat posed by PFAS, a class of over 12,000 emerging and dangerous contaminants, cannot be overstated. All PFAS are man-made and share a common feature: they persist in the environment for centuries or even millennia, earning them the nickname "forever chemicals." Alarmingly, many PFAS have already been linked to toxicity at shockingly low levels in drinking water, while the toxicity of the rest remains unknown. Furthermore, many PFAS have a tendency to accumulate in the food we eat (including plants, meat, fish, and eggs), putting future generations at risk. **To tackle this growing problem, we must regulate PFAS as a class, rather than just addressing them one by one** as we do with other toxic chemicals.

PFAS contamination has been called the largest environmental contamination issue in the US, with evidence pointing to it already being present in a majority of our drinking water supplies. This is a problem that demands a committed effort, akin to the response to the ozone hole, as well as regulations to prevent further contamination. And, as media attention continues to rise with the realization that our use of PFAS has surpassed Earth's planetary boundaries, with no water or air untouched, the damage to human health will increase as well. **Unlike the ozone hole, the damage from PFAS will occur wherever they are released, putting pressure on state and local regulators to act.** The EPA is taking action at the national level, but the challenge is compounded by the fact that the profitable PFAS industry is larger than the refrigeration industry that caused the ozone hole. Thus, regulation will necessarily be slow, as seen by the slow progress in formalizing drinking water standards and PFAS analysis methods. **Swift action in Maryland is crucial, as PFAS contamination is already widespread in the US and will continue to affect the health of our communities and the agricultural industry if allowed to spread**. The solution requires state and local regulators to work together for a comprehensive and effective response.

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Phone: 574-631-7554 Email: gpeaslee@nd.edu

I am here today to support this bill that aims to regulate the use of PFAS in pesticides. **It is crucial to understand that PFAS are not necessary components in pesticides,** as most pesticides globally do not contain it as an active ingredient. Despite this, **recent evidence from Dr. Lasee shows that some pesticides in the US contain PFAS as an additive**. Although it is not the primary component, the PFAS in these products still exist at high concentrations of **millions of parts per trillion**. A single gallon of such a pesticide can potentially contaminate tens of millions of gallons of water, exceeding the EPA's health advisory limit of 0.02 parts per trillion of PFOS.

This PFAS threat to our communities is significant and it can be readily stopped by adopting the language contained in this bill. PFAS is not an essential ingredient for these pesticides, as there is a sufficient number of alternative pesticides available without PFAS currently, so it should not be an undue burden to simply require pesticides without PFAS. **As a PFAS measurement expert, I can attest that it is possible to identify pesticides that contain significant amounts of PFAS (in the thousands and millions of parts per trillion) using readily accessible commercial PFAS testing laboratories.** More importantly, there are commercial laboratories and even alternative methods that are able to distinguish those pesticides that don't have any significant concentrations of PFAS.

There is no pesticide-specific method needed for these analyses. Any water-based pesticide can simply be diluted a thousand times with distilled water, and this standard laboratory practice would remove any concern about a matrix, oily or otherwise. The new EPA standard method 1633 or even any routine drinking water EPA method would work quite well on such extractions taken from any commercial pesticide on the market as the sample now resembles drinking water.

In addition, **this bill provides an even quicker and less expensive method to determine that there are no PFAS in a pesticide – the total organic fluorine measurement provision.** If there is no measurable total organic fluorine above 10 ppb, it means there are no PFAS in the product at concentrations of concern. Total organic fluorine screening methods are relatively new, but commercial companies already offer this test at a much lower cost than EPA method 1633. Eurofins USA lists the detection limits of their total organic fluorine test as a part per billion, for example, that would satisfy this bill's requirement easily. Oher companies and total organic fluorine methods with the same sensitivity will be available in the future too. **This is a very practical alternative in this bill that would routinely protect the agricultural communities of Maryland from the contamination of their crops and waters by PFAS.**

Lastly, it's important to note that some pesticides may contain PFAS due to contaminated plastic containers. Our tests have shown that PFAS from the containers can indeed migrate into the pesticides during storage and reach high concentrations in a short period of time, even increasing in hot conditions. This contamination can be detected through EPA method 1633 or total organic fluorine screening just as easily, allowing manufacturers to test their supplies before entering Maryland.

Regardless of its origin, these harmful "forever chemicals" should not be present in pesticides, nor allowed to enter Maryland crops and waters.

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PFAS CPSR student Testimony 2023 V3.pdf
Uploaded by: Gwen DuBois
Position: FAV

Committee: Education, Energy, and the Environment
Testimony on: SB0158/HB0319 – Pesticide Registration - PFAS Testing - Requirements
Position: Favorable
Hearing Date: February 2, 2023

Submitted on behalf of the student chapter of Chesapeake Physicians for Social Responsibility (CPSR). CPSR is a statewide evidence-based organization of over 940 physicians and other health professionals and supporters that addresses existential public health threats: nuclear weapons, the climate crisis, and the issues of pollution and toxic effects on health, as seen through the intersectional lens of environmental, social, and racial justice.

We strongly support SB0158/HB0319, which would prohibit the Secretary of Agriculture from permitting mosquito controlling pesticides in the state of Maryland by January 1, 2024, unless the distributor demonstrates the product has passed certain tests attesting to it being below detectable levels of PFAS or fluorine content. It would prohibit the Secretary of Agriculture from permitting any pesticide containing PFAS beginning January 1, 2026, as defined in the text of the bill.[1]

Per- or poly- fluoroalkyl chemicals (PFAS) comprise thousands of man-made compounds that persist in the environment, contaminate water and soil, and bioaccumulate in humans and animals. The dangerous health effects of these chemicals are summarized below (Table 1).[2] Last year, PFAS were eliminated from firefighting foam, food packaging, rugs, and carpets in Maryland. Eliminating these chemicals in pesticides is a necessary next step, and still only the start to limiting human exposure to these compounds.

Effects of PFAS on Human Health[2]
Altered thyroid hormones
Kidney cancer
Increased total and LDL cholesterol levels
Liver inflammation and fat deposition
Testicular cancer
Reduced response to vaccines
Low birth weight

Recent studies have revealed that from 2015 to 2020, nearly 70% of pesticides in the global market contained PFAS or related chemicals.[3] The use of PFAS in pesticides leads to contaminated crops, and subsequent PFAS exposure affects agricultural workers as well any communities consuming these crops. Bifenthrin, a related compound considered PFAS by some organizations other than EPA, is a fluorinated pesticide that has been found in produce in recent years, including collard greens, eggplants, spinach, cherry tomatoes, sweet potatoes, and peaches, in amounts exceeding EPA safety levels. In addition to harming human health, research has found that PFAS-containing pesticides are also an environmental pollutant, with potential to inflict ecological damage, such as causing increased mortality of honeybees crucial to pollination and agriculture.[4] Given the widespread use of pesticides in our environment and potential for bioaccumulation in humans, it is vital to eliminate PFAS from pesticides.

The continued manufacturing, use, incineration, and landfill disposal of these compounds pose an increasing threat to public and environmental health. It is a step in the right direction to address PFAS as a class of chemicals, rather than individually, as there are thousands of compounds in this class and their collective impact from exposure in-utero to adulthood likely causes the greatest harm to human health. PFAS chemicals have been detected in blood, urine, breast milk, umbilical cord blood, lungs, kidney, liver, and brain tissue.[5]

Before starting medical school, I, Vennela Avula, worked as a scientific researcher examining the effects of various environmental contaminants on human health in the Gillings School of Global Public Health. I specifically studied the effects of PFAS on maternal and child health as well as on national public health and published these findings.[6,7] In this research, we summarized the numerous negative health outcomes PFAS can have on pregnancy and birth outcomes. We also demonstrated, using national data, that PFAS were associated with higher risk of viral and parasitic infections, exhibiting their effect of dysregulating the immune system. The greatest increase in risk was found among adolescents, showing that this may be a vulnerable population. In the paragraphs below, we delve deeper into further research studies that have noted similar findings related to the human health effects of elevated PFAS serum levels.

Immune system dysfunction and infection susceptibility. The U.S National Toxicology Program, the Centers for Disease Control and Prevention, and the Agency for Toxic Substances and Disease Registry have all recognized that PFAS chemicals have the potential to adversely alter the human immune system and increase our risk of developing hypersensitivity disorders (e.g., asthma, eczema) and infectious diseases.[8] In terms of the COVID-19 pandemic, a growing body of science has shown that high levels of PFAS exposure may decrease vaccine efficacy and increase susceptibility to infections in both adults and children. Furthermore, high levels of certain PFAS have been associated with a greater likelihood of hospitalization and progression to intensive care or death due to COVID-19.[9] As we attempt to prevent the spread and severity of COVID-19 as well as future pandemics, protecting the public from further exposure to harmful PFAS chemicals plays an important role.

Health and development of the fetus, infant, newborn and children. Studies have consistently demonstrated that PFAS easily circulates from maternal blood through the placenta to the developing fetus.[10] Particularly concerning is the suggestion of PFAS-induced improper placental development and function, which could negatively impact maternal and fetal acute and latent health outcomes such as hypertensive disorders of pregnancy and low birth weight. In addition, children born to mothers with elevated umbilical cord blood PFAS levels were noted to be at increased risk for infectious diseases such as throat and airway infections and diarrheal illnesses.[11,12]

Cancer susceptibility. PFAS chemicals, particularly perfluorooctanoic acid (PFOA), have been suggested to increase the risk of various cancers. The World Health Organization (WHO) International Agency for Research on Cancer (IARC) has classified PFOA as a possible human carcinogen. A review of multiple research studies found that the increase in cancer risk per 10 ng/mL serum PFOA was 16% for kidney cancer and 3% for testicular cancer.[13] Other studies of individuals with high exposures to PFOA, such as those living near chemical and manufacturing plants, have also found associations between PFOA and testicular, kidney, prostate, and ovarian cancers, as well as non-Hodgkin lymphoma.[14,15] The National Institutes of Health (NIH) is continuing to study the risks posed by PFAS on ovarian, endometrial, prostate, and thyroid cancers, and childhood leukemia.[16] Given the considerable potential for PFAS to be linked to mechanisms underlying the development of cancer, supported by numerous laboratory and epidemiological studies, it is crucial to minimize and ultimately eliminate our exposure to PFAS.

As medical student members of the healthcare community, we strongly support and urge favorable action on SB0158/HB0319 which aims to mitigate the wide-ranging health concerns associated with PFAS exposure, starting with restriction of these harmful chemicals in pesticides. Passage of this bill will protect the health and well-being of all Maryland residents, especially those at highest risk of harm: our agricultural workers, the elderly, and pregnant women, newborns, infants, and children.

Respectfully submitted,

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SB158_GDuBois_Fav.pdf
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Position: FAV

Committee: Education, Energy, and the Environment
Testimony on: SB0158/HB0319 – Pesticide Registration - PFAS Testing - Requirements
Position: Favorable
Hearing Date: February 2, 2023

Chesapeake Physicians for Social Responsibility strongly supports Senate Bill 158
This bill would prohibit Secretary of Agriculture from permitting a mosquito controlling pesticide by January 1, 2024 unless the distributor demonstrates the product has passed certain tests attesting to it being below detectable levels of PFAS or fluorine content. It would prohibit the Secretary of Agriculture from permitting any pesticide beginning January 1, 2026 unless that product has been similarly found to have passed certain tests.
Chesapeake Physicians for Social Responsibility (CPSR) is a statewide evidence-based organization of over 940 physicians and other health professionals and supporters that addresses existential public health threats: nuclear weapons, the climate crisis, and the issues of pollution and toxic effects on health, as seen through the intersectional lens of environmental, racial and social justice.

PFAS is a manmade family of forever fluorinated chemicals called forever because the dense fluorine-carbon bonds are very strong and they are very slow to degrade and therefore bioaccumulate in humans, fish and our environment resulting in serious adverse health effects. Measurable levels of PFAS are in the blood of nearly all who live in the developed countries. [1] There are thousands of chemicals that are in this family making safety testing of each one impossible. In addition, international groups like the Organization for Economic Co-operation and Development (OECD) have a broader definition of PFAS encompassing many more chemicals then does the EPA. Related to this question of what is a pfas, a flood of new fluorinated pesticides has recently entered the market accounting for nearly 70% of the new agricultural related pesticides approved worldwide in the second half of the previous decade.[2]

Human exposure to PFASs occurs through ingestion of contaminated drinking water, fish, and other foods, air, inhalation of indoor air, and contact with other contaminated material.[3] With

[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7906952/
[2] https://doi.org/10.1016/j.envpol.2021.118315
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long biological half-lives as well as environmental persistence, they are detected in the blood of nearly all in the developed world. It crosses the placenta and is present in breast milk.[4] For toddlers and other children, intake is twice that of older groups, and in utero and breast feeding are major routes of their exposure.[5]

Scientists for the Public Employees Environmental Responsibility have found PFAS in several mosquito control pesticide products it has tested.[6] The EPA acknowledged that it found PFAS in some of the plastic containers used to store PFAS though PEER has found PFAS in some products that were stored in metal containers and raise the possibility that the chemicals are from the inert ingredients. [7] A follow up study found that a sample of pesticides had levels of PFAS that were too high to be due to container contamination but likely were PFAS chemicals that were part of the pesticide formulation.[8] One of the pesticides containing PFAS is malathion, one of the most commonly applied insecticides in the world."[9]
This matters because of serious adverse effects health effects of PFAS. The former director of the National Institute of Environmental Health Sciences and the National Toxicology Program has said that impaired immune response, kidney cancer and elevated cholesterol in children and adults are **caused** by PFAS chemicals, after decades of reviewing research on the subject.[10] In a recent review, the authors concluded that high certainty PFAS health effects include: kidney cancer, testicular cancer, liver damage (associated with fatty liver), altered thyroid hormone levels, high cholesterol (increase serum total cholesterol and the fraction we usually associate with heart disease, in adults and children), low birth weight, reduced immune response including a reduced response to vaccines after exposures in utero.[11] A report by the National Academies of Science, Engineering and Medicine attested to the association between PFAS exposure and increased risk of altered immune response, decreased infant and fetal growth, high cholesterol and risk of kidney cancer.[12] A court ordered study, the C8 Health Study as part of a settlement against a Dupont plant that caused water contamination of over 70,000 residents, found a link between one major PFAS chemical and increased cholesterol, kidney cancer, testicular cancer, ulcerative colitis, thyroid disease, and pregnancy -induced

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[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7906952/

[12] https://www.nationalacademies.org/news/2022/07/new-report-calls-for-expanded-pfas-testing-for-people-with-history-of-elevated-exposure-offers-advice-for-clinical-treatment

hypertension.[13] A Harvard School of Public Health study from Denmark linked more serious outcomes for COVID-19 with elevated blood PFAS levels for one of the less common PFAS chemicals known to accumulate in the lungs.[14] In the midst of a pandemic, it is of great concern to raise the possibility of a link between PFAS chemical exposure and impaired immune response. This study underscores why we need to test for what links the group uniquely, the density of fluorine bounds with the carbon atom and testing for fluorine since there are thousands of PFAS chemicals and we cannot test for them all.

For all of these reasons, ***Chesapeake PSR strongly supports SB0158,*** a bill to ensure all pesticides registered for sale and use in Maryland are tested by EPA or MDE by approved labs, paid for by the manufacturer as part of its annual registration. This will begin to ensure we are addressing the harmful ubiquitous, forever family of chemicals known as PFAS so that we no longer can continue to pollute our environment and harm children and adults with PFAS from pesticides. CPSR has always advocated on the principal that it is important to prevent what you cannot cure.

Gwen L. DuBois MD, MPH
President
Chesapeake Physicians for Social Responsibility

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Position: FAV

AMERICAN BIRD CONSERVANCY

Bringing back the birds

SB 158: Pesticide Registration – PFAS Testing – Requirements
Submitted to: The Senate Committee on Education, Energy, and the Environment (EEE)
Submitted by: Hardy Kern, Director of Government Relations, American Bird Conservancy
Position: **FAVORABLE**

February 2, 2023

American Bird Conservancy, which works to conserve birds throughout the Americas, strongly supports SB 158, the Pesticide Registration – PFAS Testing – Requirements Bill. To protect wildlife, ecosystems, and human health, we urge its swift passage through the Maryland legislature.

Per- and polyfluoroalkyl substances ("PFAS") are a class of forever chemicals which have, disconcertingly, achieved ubiquity. Maine was the first state to implement a PFAS ban of any kind, which was promulgated in 2021.[1] Since then, multiple states and the United States Environmental Protection Agency ("EPA") have taken major steps in banning the use of PFAS and, in the case of EPA, have removed PFAS chemicals from lists of active and inert ingredients.

In addition to previously addressed human impacts, environmental risks include potential kills of invertebrates, organ failure in vertebrates, and impaired immune function in non-human animals.[2]

American Bird Conservancy is particularly concerned with potential effects on shorebirds and waterfowl which call Maryland home. The Plovers, Willets, and Gulls which frequent the coast may be at risk from loss of prey species. Ruddy Ducks, Hooded Mergansers, and the omnipresent Mallard may all be at risk from organ failure after ingesting invertebrates or fish which are contaminated. PFAS bioaccumulate in aquatic organisms and are both acutely and chronically toxic.[3]

A study of juvenile seabirds in Massachusetts found that **100% of individuals surveyed (36 total) had elevated levels of PFAS in their liver**.[4] This paper, from 2020, was the first to look at concentrations of PFAS in seabirds and was sparked by a desire to investigate predators of marine invertebrates, which past research has confirmed are biological reservoirs for PFAS. Undoubtedly, the dearth of scientific literature on the subject is not from a lack of effect, but rather a lack of investigation.

The Red Knot, a shoreline wading bird, migrates through Maryland every year on their way to their nesting grounds. The horseshoe crab eggs they eat off the Maryland coast sustain them on their long journey and provide ample opportunities for birders and other tourists to view them.[5] **Horseshoe crabs are extremely susceptible to PFAS, experiencing mortality and**

decreased fecundity from even trace amounts of PFAS in marine environments.[6] Furthermore, the levels of PFAS in marine environments are poorly understood; the effects and devastation are likely more widespread than currently accounted for.

PFAS threats transcend environmental risks and can endanger economic wellbeing; the Maryland Ornithological Society estimates that birdwatching *alone* brings in almost $350 million annually.[7] These estimates were made in 2011, well before the increased domestic ecotourism boom of the late 2020s.

Most concerningly, though, is the new finding that PFAS are found in many common agricultural pesticides including the neonicotinoid imidacloprid and the organophosphate malathion, both of which contain their own haunting and devastating legacies.[8]

The Pesticide Registration – PFAS Testing – Requirements Bill is a commonsense approach to keeping Marylanders and wildlife safe from these harmful chemicals. The first step would be a **phase-out on mosquito-targeting pesticides containing PFAS, which are typically applied as aerial sprays over large aquatic areas**, making exposure particularly likely.

Beginning in 2026, all pesticides must prove that they are free of PFAS before use, giving manufacturers and applicators more than ample time to adjust their pesticide regimens.

This bill has the potential to save the lives of birds and people alike. The legislators of Maryland have the impetus and opportunity to continue leading the country in pesticide regulation.

American Bird Conservancy strongly urges the passage of SB 158 Pesticide Registration – PFAS Testing – Requirements Bill.

For more information, please feel free to contact me at eharydkern@abcbirds.org

Sincerely,

E. Hardy Kern III
Director of Government Relations
American Bird Conservancy
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SB 158 - Supp - to EEE - PFAS registration - Feb 2

Uploaded by: Henry Bogdan

Position: FAV

MARYLAND NONPROFITS
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February 1, 2023

Testimony on Senate Bill 19
Pesticide Registration - PFAS Testing – Requirements
Senate Education, Energy, and the Environment Committee

Position: Support

Maryland Nonprofits is a statewide association of more than 1500 nonprofit organizations and institutions. We strongly urge you to support Senate Bill 158 to improve the protection for all Marylanders from exposure to PFAS 'forever chemicals'.

PFAS do not break down in the environment and there is no known way to safely dispose of these chemicals. We know that they are making their way into water systems, including the Chesapeake Bay, drinking water, soil, food and our bodies, and that they are linked to numerous serious health impacts. Senate Bill 158 seeks to prevent PFAS from continuing to be combined with pesticides, that we know on their own already have acute and long-term adverse health impacts.

We also know that environmental hazards fall more heavily on those living in poorer neighborhoods, most often people of color, and subject to other negative social determinants of health.

Senate Bill 158 will require all manufacturers of mosquito control products in the state to provide annual independent laboratory testing and certification to prove that the pesticide product is PFAS-free, beginning January 1, 2024, and by January 1, 2026 manufacturers of all pesticides to provide this testing.

We urge you to give Senate Bill 158 a favorable report.

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Position: FAV

February 2, 2023
SB 158 Pesticide Registration – PFAS Testing – Requirements
The Senate Committee on Education, Energy, and the Environment (EEE)
Testimony of Jason Davidson, Friends of the Earth
In Support

Chairman Feldman, Vice Chair Kagan and members of the Committee,

On behalf of Friends of the Earth and its more than 30,000 members and supporters in Maryland, I urge the committee to issue a favorable report for SB 158.

SP 158 would prohibit the sale of any pesticides containing PFAS by 2026. Manufacturers would be required to test their products for contamination and submit a report in order to be registered for sale and use in Maryland. **Pesticides containing PFAS would be replaced with tested products shown to be PFAS-free**. Given past findings of contamination, this testing is necessary.

Exposure to PFAS is linked to cancer and other long-term health impacts. Scientists in multiple labs have found PFAS in mosquito control products and common pesticides used in agriculture. A recent study found PFAS contaminated corn, bean and peanut crops grown in fields that were sprayed with 6 commonly used pesticides that had tested in the millions of parts per trillion levels of PFAS. Of great concern is that this study found PFAS contaminates the crops themselves at thousands of times the EPA safe drinking water level of 0.02 ppt, increasing human and animal exposure through consumption of the contaminated food. This continues even after spraying is stopped because of the persistence of PFAS contamination in the soil.

in response to concerns regarding PFAS in pesticides, EPA banned 12 PFAS chemicals for intentional use as inert ingredients in pesticides late last year. However, EPA is not currently requiring ongoing testing of pesticides for unintentional contamination.

PFAS are commonly referred to as “forever chemicals,” due to their inability to break down in the environment. **Inadvertent spraying of these chemicals** through broad mosquito control applications and agricultural use **poses a significant risk to residents, our food supply, as well as local waterways and turf, due to drift.**

These pesticides may have been contaminated by PFAS present in their plastic containers or PFAS may be intentionally added by manufacturers as an inert ingredient; either way, there is evidence that even low-dose container contamination can be very dangerous to humans. While EPA has banned 12 PFAS chemicals for use as inert pesticide ingredients, EPA has also left the door open for their use based on industry testing.

PFAS disrupts the human endocrine system. A January 2022 study in Annual Reviews found that children are particularly vulnerable to endocrine disruption, and that **there are essentially no safe levels of exposure for them.** Earlier studies have produced similar findings.

Protections are necessary at the state level. While the Biden administration has made PFAS regulation a priority, early results have been insufficient. EPA has not taken steps to ensure pesticide manufacturers have to test regularly for possible PFAS contamination, leaving it up to Maryland to eliminate a potentially significant source of PFAS pollution.

PFAS also has significant impacts on wildlife, including honeybees. Meta-analyses have found adverse affects across a number of species and geographies, and have found that PFAS can bioaccumulate at a global scale. Research shows potential adverse affects in species ranging from fish, to birds, to mammals, to honeybees. PFAS has even been found in the honey of bees exposed to the forever chemicals.

Due to these substantial risks, Friends of the Earth strongly urges a favorable report on SB 158

Jason Davidson
Senior Food and Agriculture Campaigner
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SB0158_KSchwarz-MOS_fav.pdf
Uploaded by: Kurt Schwarz
Position: FAV

MARYLAND ORNITHOLOGICAL SOCIETY

Testimony: SB 158: Pesticide Regulation – PFAS Testing – Requirements
Submitted to: The Senate Committee on Education, Energy, and the Environment (EEE)
Submitted by: Kurt Schwarz, Maryland Ornithological Society
Position: In Support

February 2, 2023

The Maryland Ornithological Society (MOS) supports Pesticide Regulation – PFAS Testing—Requirements.

The strong fluorine-carbon bonds of PFAS compounds cause PFAS substances to persist in the environment. Additionally, many PDAS (e.g., PFOA and PFOS) bioaccumulate in the tissues of wildlife, some to levels that could cause overt toxicity. In fact, levels of these substances have been found in the tissues of marine mammals in the Arctic and in many species of birds. These substances have been found in the eggs, blood, and livers of birds across the globe, with concentrations especially pronounced in industrial areas in North America, Europe, and east Asia.[1] PFAS have been shown to reduce hatching success in species of birds such as Double-crested Cormorant[2], and Little Ringed Plover[3]. PFAS has been found in blood of Northern Cardinal in Hawaii, [4] Snow Buntings in Svalbard[5], and American

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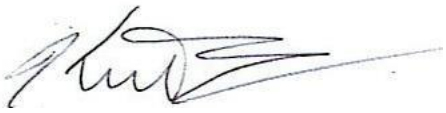
Flamingos on the island of Bonaire in the Caribbean[6], showing how pervasive PFAS is in our environment. That these substances are found in wildlife they are also found in seafood and livestock. PFAS have also been found in the tissues of over 98% of humans.[7]

An estimated 900,000 residents and non-residents enjoy birding in the state. While Marylanders generated $483 million from wildlife-watching activities in 2011, the Total Industrial Output (TIO), which includes, direct, indirect, and induced effects, totaled over $909 million, produced 10,807 full- and part-time jobs, and generated $88.4 million in state and local tax revenue. Nationally, Americans who watch and feed birds contribute $41 billion to the nation's economy every year.[8] Negative impacts on bird populations, which PFAS cause, are of concern to us.

Millions of pounds of pesticides are applied in Maryland every year. And now it is evident that PFAS is inadvertently being applied to the landscape of Maryland as well, unnecessarily contaminating our crops, soil, waterways, pollinators, wildlife, and humans. Named "forever chemicals" for their persistence and ability to bioaccumulate, we strongly urge legislators act to protect our health and that of the environment by passing Pesticide Regulation – PFAS Testing—Requirements.

Sincerely,



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[6] de Vries, Pepijn, et al, The toxic exposure of flamingos to per- and polyfluoroalkyl substances (PFAS) from firefighting foam applications in Bonaire, November 2017, https://www.sciencedirect.com/science/article/abs/pii/S0025326X17305982

[7] NHANES (on-line), National Health and Nutrition Examination Survey, Center for Disease Control, Atlanta, GA

[8] US Fish and Wildlife Service, Economic Impact: Birds, Birdwatching and the U.S. Economy, November 16, 2017

Pesticide Registration - PFAS Testing - Requiremen

Uploaded by: Laura Stewart

Position: FAV

Free State PTA
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Written Testimony Submitted for the Record to the Maryland Senate
Education, Energy, and the Environment Committee
For the Hearing on
Pesticide Registration - PFAS Testing - Requirements (SB0158)
February 2, 2023
SUPPORT

Free State PTA represents over 50,000 volunteer members and families in over 500 public schools. Free State PTA is composed of families, students, teachers, administrators, and business as well as community leaders devoted to the educational success of children and family engagement in Maryland. As the state's premier and largest child advocacy organization, Free State PTA is a powerful voice for all children, a relevant resource for families, schools and communities and a strong advocate for public education. ***Senate Bill 0158, Pesticide Registration - PFAS Testing - Requirements, aligns with Free State PTA's principle for legislative action which states that schools must provide a safe environment where all students, teachers and staff can thrive***.

A founding principle of Free State PTA's (FSPTA) mission is to promote the safety and well-being of all children and youth. Senate Bill 0158 is consistent with this principle in that it requires pesticides to be tested for Poly- and Perfluoroalkyl Substances (PFAS), a group of chemicals that do not break down in the environment and may lead to detrimental effects to children and families according to the Center for Disease Control (CDC)[1] and multiple studies[2]. These effects include increased cholesterol levels, decreased vaccine response in children, changes in liver enzymes, Infant birth weights, increased risk of high blood pressure or pre-eclampsia in pregnant women, small decreases in infant birth weights, and increased risk of kidney or testicular cancer.

Pesticides are used in Maryland schools[3] on a regular basis, inside the building and outside on fields and play areas. We know that pesticides are harmful to children[4] and they are exposed to them throughout their lives. Laws pertaining to Integrated Pest Management and policy attempts by the Maryland State Department of Education exist to limit pesticide exposure to children, but eliminating PFAS from pesticides will be even more protective of children's health. **Therefore, the Free State PTA urges the passage of SB0158.** Ellie Mitchell and Rick Tyler, Maryland Education Coalition, and Hannah Donart, MCCPTA Health and Wellness Committee also join this testimony.

Testimony is presented on the behalf of

Marla Posey-Moss

Marla Posey-Moss, President
mposey-moss@fspta.org

[1]https://www.atsdr.cdc.gov/pfas/health-effects/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.atsdr.cdc.gov%2Fpfas%2Fhealth-effects.html
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/
[3] https://mda.maryland.gov/plants-pests/Pages/Integrated-Pest-Management-(IPM)-in-Schools.aspx
[4]https://www.healthychildren.org/English/safety-prevention/all-around/Pages/Protecting-Children-from-Pesticides-Information-for-Parents.aspx

SB158_LBirnbaum_fav.pdf
Uploaded by: Linda Birnbaum
Position: FAV

Linda S. Birnbaum, Ph.D., D.A.B.T., A.T.S.
Scholar in Residence, Duke University
Scientist Emeritus and
Former Director, National Institute of Environmental Health Sciences (NIEHS)
and National Toxicology Program (NTP)

February 2, 2023

In support of: SB158 Pesticide Registration – PFAS Testing – Requirements
Before the House Health and Government Operations Committee

Dear Chair Feldman, Vice Chair Kagan and members of the committee:

I am a toxicologist and microbiologist by training and as the former director of the National Institute for Environmental Health Sciences, as well as the National Toxicology Program, positions I held from January 2009 until October 2019, I have been one of the scientists sounding the alarm on PFAS—known as the "forever chemicals"—and have been engaged in efforts with other scientists and public health experts to address the serious health concerns related to PFAS. I also worked for the EPA for 19 years prior to my work at NIEHS and NTP, directing the largest division focused on environmental health research. My research has focused on the health impacts of environmental chemicals. I have been granted NIH scientist emeritus status and am a Scholar in Residence At the Nicholas School of the Environment of Duke University.

Many PFAS are fluorinated polymers which can breakdown and release monomer PFAS with unmeasurable half-lives, therefore earning the distinction of being considered forever chemicals. The contaminants known as PFAS cause multiple health problems in people. And I can definitively say "cause" instead of "are linked". While thousands of scholarly articles have linked the chemicals to a plethora of health effects, I believe we can currently say there is sufficient evidence for causation of adverse impacts on our health.

While I was leading the NIEHS, one of the Institutes of the National Institutes of Health, whose mission is to discover how the environment affects people in order to promote healthier lives, I was not allowed to use the word "cause" when referring to the health effects from PFAS or other chemicals. If I was talking about human data or impacts on people, I had to always say there was an association with a laundry list of effects. This was because there are no double-blind, placebo controlled clinical trials for PFAS. It would be unethical to intentionally expose people to chemicals of great concern.

Association, the coincidence of a chemical exposure and disease, and causation, in which a health problem happens *as the result* of the exposure, are different. Because many factors, including chance and genetics and exposures to other substances, can influence the development of disease, the term "cause" is used cautiously in the field of environmental health.

But I have studied PFAS compounds for decades and believe the global contaminants have cleared that high bar. In my mind, PFAS cause health effects because you have the same kind of effects reported in multiple studies in multiple populations. You have longitudinal studies showing the same effects in multiple populations done by multiple investigators and you have animal models showing the same impact.

That is pretty good evidence that PFAS or certain PFAS can cause health effects in people. It is not as strong for every effect, but there are quite many effects where they're strong enough to say "caused," in particular to the relationship between these chemicals and immune system effects, kidney cancer, and elevated cholesterol in humans—the data is very clear.

And given the current ongoing pandemic, it's important to note that PFAS reduces our antibody response to vaccines and that elevated PFAS levels are associated with Covid-19 susceptibility and with an increased risk of a more severe course of COVID-19.

PFAS also increases asthma in children, during pregnancy can impact the health of the mother and her child, can cause poor executive functioning, decreased kidney function, ulcerative colitis, high cholesterol, thyroid disruption, liver malfunction, prostate and ovarian cancer, lower birth weight and size, delayed puberty, early menopause and more.

A striking feature of PFAS is how they can cause harm to so many systems within our bodies as detailed in my written testimony—our livers, our kidneys, our immunity, our metabolism. Other health issues caused by PFAS include elevated cholesterol levels, liver dysfunction, weight gain, reproductive problems, and kidney cancer, which have been shown to increase along with the levels of the chemicals in blood.

You have heard testimony today from Dr. Steven Lasee on his alarming study in the Journal of Hazardous Materials Letters, "Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS," that found PFOS (a legacy PFAS) in 6 out of 10 tested insecticides at levels ranging from 4 million to 19 million parts-per-trillion (ppt). These levels alone are shocking when we consider all the ways we come in contact with pesticides. But more chilling was the discovery that the crops grown in these pesticide-treated USDA fields, where the study took place, also contained PFAS at levels at thousands of times the EPA's current health advisory for PFOS in drinking water is 0.02 ppt). This is a worrying new development for PFAS exposure, because the food we eat everyday may be a cumulative exposure that is our highest exposure source yet. In light of this new information, Maryland lawmakers have a crucial opportunity to act now to protect their constituents from needless continued PFAS ingestion.

Concerns about PFAS have existed since the 1960's

PFAS has been of great concern to me and many other scientists around the globe for decades. PFAS-exposure related health concerns began in the 1960s starting with DuPont raising concerns re: health risks of PFAS in an internal 1962 document—fast forward to 1978 when an unpublished study shows adverse effects of PFOA in monkeys, then in 1980 PFAS was detected in serum of workers, in 1981 concerns arose about birth defects in children born to women workers, in 1987 PFOA was shown to cause cancer in a rat study, and later on in 1998, samples from U.S. blood donors in the general population were shown to contain PFAS.

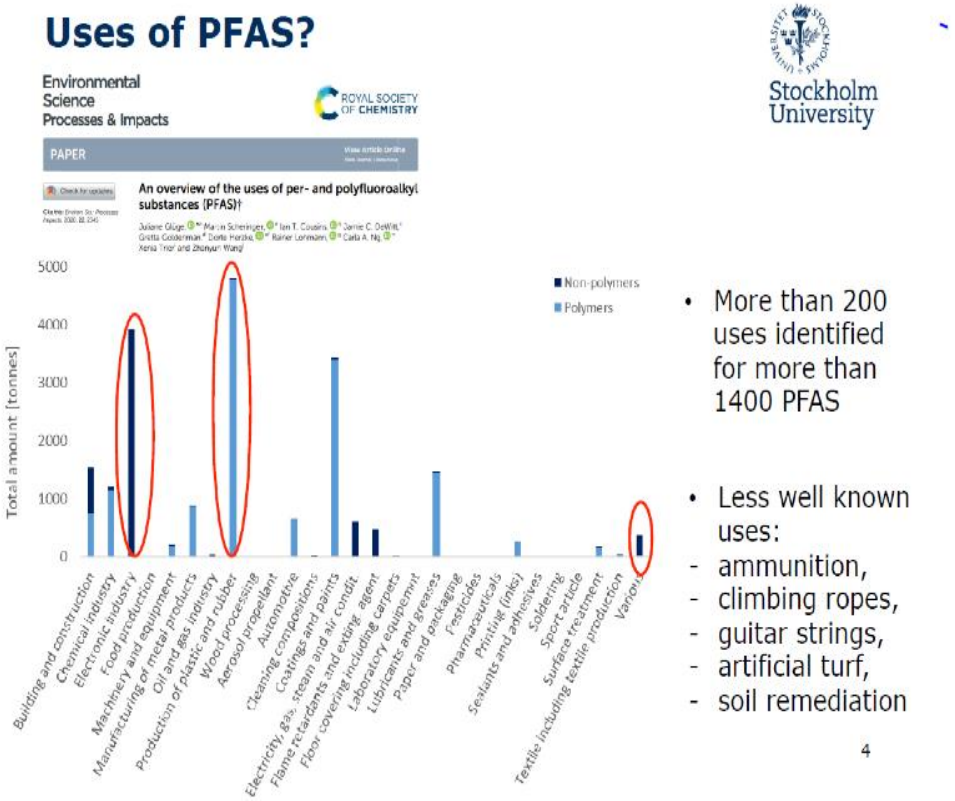
In 2000, PFOA and PFOS were detected in nearly 100% of Americans and 3M announced plans to phase-out PFOA and PFOS. In 2004, DuPont settled a class action suit (>80,000 plaintiffs) for $343 million. In 2006, EPA invited 8 major company producers to phase out PFOA by 2015**.** In 2012, immune system effects related to PFAS were reported in children.

EPA released a statement December 20, 2021 announcing a nationwide monitoring effort for 29 per- and polyfluoroalkyl substances (PFAS) in drinking water. The Fifth Unregulated Contaminant Monitoring Rule (UCMR5) will provide data on the frequency and magnitude at which these chemicals are found in

the nation's drinking water systems and will improve EPA's ability to conduct state and regional assessments of contamination.

As you will also hear from other experts, the current total **number of PFAS is more than 12,000 chemicals—that includes** PFOS, PFOA, PFHxS, PFMOAA, GenX, ADONA, Nafion Byproduct 2, etc.—these compounds are environmentally persistent, mobile, and bio-accumulative.

Production of many products, including certain pesticides, involves the addition of PFAS additives, as either active or inert ingredients. The chart below shows you the diverse range of products found to contain PFAS:



While we need to ultimately turn off the tap on PFAS and find safe alternatives, until that day arrives, we need, at least, to promote safer alternatives and affect changes wherever possible. Given that about 14,000 pesticides are registered in the state of Maryland annually and are used widely across the state, and given a currently unknown percent of them contain or are contaminated with PFAS, it behooves the state to initially address the widely used pesticides applied in a large part of the state on a regular basis for 4-5 months to control mosquito by 2024, and phase in testing on all remaining pesticides registered in the state by 2026.

Testing for PFAS is challenging as there is no one test that can fully assess all 12,000 PFAS which may be in a a pesticide. For example, all PFAS are organofluorine (OF) compounds, but not all OFs are PFAS. So, when a pesticide is tested to assess if it is an OF, then we know it's possible it's a PFAS containing product. This test is a good starting point, since if a product is shown not to contain an OF, it is confirmed to be PFAS-free. A manufacturer can then confidently submit the lab test for having the product registered for sale and use in the state. If it is an OF, then the product can either be replaced with one that tests OF-free or be further tested for specific PFAS. That said, current testing for specific pesticides is expertly explained in Dr. Peaslee's testimony regarding these current two options. Targeted PFAS testing

is still limited to testing for up to 70 PFAS. However, testing for these widely used OF compounds is an important measurement for assessing PFAS in a pesticide. If used together, they can provide critical data.

That said, the reasoning for the specific language in the bill on how testing should be conducted by labs used by the Maryland Dept. of the Environment or EPA, that manufacturers use to assess whether the product contains PFAS, is critical guidance that sets limits on what level of PFAS is currently deemed acceptable and considered PFAS-free. Given new research, the limits could be further lowered tomorrow, but we at least must take these steps now.

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Turning off the tap of PFAS-containing pesticides, is a critical step forward, given how frequently Maryland residents and communities are exposed daily to potentially contaminated food and throughout the year to mosquito control products, lawn care, and agricultural pesticides. To help protect future generations, we urgently need comprehensive state policies to end unnecessary uses of PFAS, as traditionally states tend to do so, prior to EPA setting federal policies. While the EPA is working to address PFAS, we cannot continue to wait for needed federal regulations. States like Maryland need to protect their residents. And states are leading the way… for example, Maine adopted a state law banning all intentionally added PFAS in products unless the use is deemed unavoidable. Pesticides do not necessitate the use of PFAS as either inert or active ingredients.

I urge this committee to take a crucial step in protecting Marylanders by passing SB158.

SB158 ShoreRivers Testimony, Favorable.pdf
Uploaded by: Matt Pluta
Position: FAV

Testimony in Support of Senate Bill 158 – Pesticide Registration - PFAS Testing - Requirements

January 31, 2023

Dear Chairman Feldman and Members of the Committee,

Thank you for this opportunity to submit testimony **in support of SB158,** Pesticide Registration—PFAS Testing Requirements, on behalf of ShoreRivers. ShoreRivers is a river protection group on Maryland's Eastern Shore with more than 2,000 members. Our mission is to protect and restore our Eastern Shore waterways through science-based advocacy, restoration and education.

Pesticide use on the agriculturally-dominated Eastern Shore is among the highest in the state, putting nearby sensitive wildlife and aquatic resources that many Marylanders depend on for fishing, hunting and recreation at risk of contamination. **According to Maryland Department of Agriculture's data from the 2020 Maryland Pesticide Survey Statistics, 898,435 lbs. of pesticides were applied in the nine counties on the Eastern Shore in 2020, making up 57% of the state total.** The delivery of pesticides to local waterways is complex as the different chemicals from pesticides can be transported by leaching to groundwater, overland flow to surface waters, and atmospheric delivery via drift, volatilization, and deposition.

This bill will protect the Eastern Shore environment and its communities by requiring PFAS monitoring of mosquito pesticides first, followed by required monitoring of all pesticides used in the state. If PFAS are detected above the action limit of 100 ppt, use of that pesticide will be prohibited. **PFAS (per- and polyfluoroalkyl substances) are known for their bio-persistent and bio-accumulating characteristics, meaning when they are released into the environment they will remain a hazard as they accumulate in soils, waters, and food sources.** PFAS are known to cause cancer; diseases of the thyroid, liver and kidneys; and development issues in fetuses and infants.

It's incredibly important that we monitor and eliminate the use of PFAS in materials that are applied to our land, food, and water as a means of protecting human health. **As shown in other states like Maine, Minnesota, and New York, the application of PFAS on crop fields leads to high levels of the chemicals in the foods grown on the fields and the wildlife that graze on them**. As Marylanders who take pride in growing and catching locally sourced seafood and wildlife, it's imperative that we protect our communities by protecting those food sources from PFAS. For these reasons and the examples described above, ShoreRivers urges the committee to adopt **Senate Bill 158.**

Sincerely,
Matt Pluta, Choptank Riverkeeper on behalf of:

ShoreRivers
Isabel Hardesty, Executive Director
Annie Richards, Chester Riverkeeper | Matt Pluta, Choptank Riverkeeper | Zack Kelleher, Sassafras Riverkeeper

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SB_158_CBF_FAV.pdf
Uploaded by: Matt Stegman
Position: FAV

CHESAPEAKE BAY FOUNDATION

Environmental Protection and Restoration
Environmental Education

Senate Bill 158
Pesticide Registration - PFAS Testing – Requirements

Date:	February 2, 2023	Position:	Support
To:	Senate Education, Energy, and Environment Committee	From:	Matthew Stegman, Maryland Staff Attorney

Chesapeake Bay Foundation (CBF) **SUPPORTS** SB 158 which would, beginning in 2024, prohibit the Secretary of Agriculture from registering certain pesticides for use against mosquitos unless the distributor provides documentation that the pesticide has passed a laboratory test for the presence of Perfluoroalkyl or polyfluoroalkyl substances, commonly referred to as PFAS. The bill would expand the scope of required PFAS testing to all pesticides beginning in 2026.

PFAS are an urgent public health and environmental issue facing communities across the United States. PFAS are a group of synthetic chemicals that continue to be released into the environment throughout the lifecycle of manufacturing, processing, distribution in commerce, use, and disposal. Each action in this cycle creates environmental contamination and human and ecological exposure. Their persistence in the environment has earned them the label "Forever Chemicals". Their ubiquitous use in many products over the years contributes to the concerns of increasing concentration.

These chemicals have become so much of a concern that EPA has created an expedited action plan to study their effects, reduce or eliminate them from the waste stream and remediate damages.[1] Key findings from Dr. Vicki Blazer, US Geological Survey, who studies wide ranging chemical contaminants in native fish include:

- **USGS utilized archived plasma from adult smallmouth bass from sample locations at 4 sites in Chesapeake Bay watershed collected from 2013 to 2019**.Two sites were in the Potomac drainage (mouth of Antietam Creek and South Branch Potomac near Moorefield) and two were in the Susquehanna (Pine Creek and West Branch Mahantango Creek).
- PFAS compounds were found in every smallmouth bass plasma sample collected, at the four sites with differing land use patterns.
- PFOS was the compound detected at the highest concentrations at all sites.
- Higher concentrations of the 4 PFAS compounds were found in plasma of fish from watersheds with highest proportions of developed and agricultural land. "PFOS and total PFAS were positively correlated with total pesticide application in the immediate catchment (area immediately surrounding the site)…"

[1] Caprio, Paul, P.G., Vice President, Director, Chemicals and Contaminants of Emerging Concern, *EPA PFAS Strategic Roadmap Timeline*, EA Engineering, Science and Technology Inc., October 2021.

- Lymphocyte function in the fish, which produces antibodies, was negatively impacted by PFAS exposure. CBF has received reports of similar concerns through studies in humans, that PFAS exposure negatively impacts the immune and vaccination response.

PFAS chemicals can have an outsized effect on marine life. Lethal effects on some freshwater and marine fish and invertebrates have been documented at concentrations as low as 10 ppm (which equals 10,000,000 ppt)and developmental effects at 1.5 ppm (which equals 1,500,000 ppt). Even lower concentrations can lead to chronic effects such as inhibition of growth and cell function.[2]

Alternative mosquito control pesticides that do not include PFAS are available. This legislation will empower the Department of Agriculture to limit additional, unnecessary exposure to PFAS through routine testing and certification.

CBF urges the Committee's FAVORABLE report on SB 158.

For more information, please contact Matt Stegman, Maryland Staff Attorney, at mstegman@cbf.org.

[2] Summarized from Table 7-1 of the Interstate Technology Regulatory Council PFAS Fact Sheet. ITRC_PFASSection7.2-TablesEcotoxicologydatasummary-Aug2021.xlsx (live.com)

FJ_MCN_Testimony on SB158_02-01-2023.pdf
Uploaded by: Mayra Reiter
Position: FAV

February 1, 2023

The Education, Energy, and the Environment Committee

In Support of SB158: Pesticide Registration - PFAS Testing – Requirements

We write on behalf of Farmworker Justice and Migrant Clinicians Network to urge you to support Senate Bill 158, *Pesticide Registration - PFAS Testing – Requirements*. Farmworker Justice is a nonprofit organization that seeks to empower farmworkers to improve their living and working conditions, health and occupational safety. Migrant Clinicians Network is a nonprofit dedicated to migration health and provides extensive training and technical assistance to clinicians across the country serving farmworkers and rural communities.

SB158 would prohibit the registration for use of pesticides contaminated with perfluoroalkyl and polyfluoroalkyl substances (PFAS), and impose PFAS testing requirements on pesticide distributors. PFAS are known as "forever chemicals" due to their persistence in the environment. Because they are extremely slow to break down, these chemicals bioaccumulate in animals and humans. Scientific evidence indicates that PFAS are endocrine disruptors linked with certain types of cancer.[1] Multiple studies have found associations between PFAS exposure and an alarming array of health effects including reproductive toxicity, preeclampsia, reduced birth weight, altered maternal and neonatal thyroid function, negative impacts on childhood neurodevelopment, non-alcoholic fatty liver disease in children, alterations in pubertal development, diabetes, increased blood cholesterol levels, hypertension, myocardial infarction, decreased kidney function, visual impairment, Crohn's disease, immune system suppression, cerebrovascular diseases, Alzheimer's disease, Parkinson's disease (females), downregulation of certain microRNAs, and cancer of the breast, testicles and kidneys.[2]

[1] Kirk M, Smurthwaite K, Bräunig J, Trevenar S, D'Este C, Lucas R, Lal A, Korda R, Clements A, Mueller J, Armstrong B. *The PFAS Health Study: Systematic Literature Review*. Canberra: The Australian National University. 2018. https://openresearch-repository.anu.edu.au/bitstream/1885/241032/1/PFAS%20Health%20Study%20Systematic%20Review_1.pdf

[2] Chohan A, Petaway H, Rivera-Diaz V, Day A, Colaianni O, Keramati M. Per and polyfluoroalkyl substances scientific literature review: water exposure, impact on human health, and implications for regulatory reform. Rev Environ Health. 2020 Sep 30;36(2):235-259. doi: 10.1515/reveh-2020-0049. PMID: 32990652.

Alarmingly, research published in 2022 found that six out of 10 common agricultural pesticides tested were contaminated with high levels of PFAS ranging from 3.92 to 19.2 parts per million (ppm). The pesticide with the highest concentration, abamectin, contained 19.2 ppm of PFOS (perfluorooctane sulfonic acid, a type of PFAS).[3] For comparison, the U.S. Environmental Protection Agency's (EPA) drinking water health advisory level for PFOS is 0.02 **parts per *trillion*** (ppt). This same study found high concentrations of PFAS in soil and food grown in areas treated with these pesticides.

PFAS contamination in agricultural pesticides poses a significant public health threat, not just to the general public who eat contaminated food, but also to farmworkers. Farmworkers are exposed to PFAS when they handle, mix, load and apply pesticides, as well as when they are exposed to pesticide drift or enter treated fields. Farmworker families, many of whom live on or near the farms, are also exposed when pesticide drift and runoff contaminate the air, soil and water around their homes, and when residues are brought home on contaminated work clothing. The risk is particularly high for pregnant women and children, given that exposure to some PFAS is associated with preeclampsia and other reproductive effects, while exposure in early childhood is associated with decreased immune response and neurodevelopmental impacts, among other health outcomes.[4]

Farmworker communities already face serious health challenges due to their low incomes, lack of health insurance, limited access to health care, and language barriers. They also face a myriad of occupational hazards that include heat stress, musculoskeletal injuries, and exposure to pesticides whose active ingredients are associated with some types of cancer, degenerative neurologic diseases, and immune effects.[5] Substandard housing further contributes to the occupational and environmental health threats they endure. PFAS contamination of pesticides can only add to the already high health burdens faced by this population.

SB 158 is a crucial step in protecting farmworkers, their families and rural communities from PFAS contamination. To ensure that the legislation's testing requirements are effective in preventing PFAS-contaminated pesticides from entering the market, the Maryland Department of Agriculture will need to ensure that pesticide samples tested by distributors are truly representative of the products that will be offered for sale. The EPA suspects that at least some of the PFAS contamination found in pesticides may be due to leaching from the walls of fluorinated pesticide containers. Specifically, the Agency has indicated:

> "On September 8, 2022, EPA released results from its evaluation on the leaching potential of PFAS from the walls of certain fluorinated HDPE containers into the liquids stored in

[3] S. Lasee, McDermett K, Kumar N, Guelfo J, Payton P, Yang Z, Anderson TA. Targeted analysis and Total Oxidizable Precursor assay of several insecticides for PFAS. *J. Hazard. Mater. Lett.* 3 (2022). https://doi.org/10.1016/j.hazl.2022.100067
[4] Chohan et al. (2020). Supra note 2.
[5] McCauley LA, Anger WK, Keifer M, Langley R, Robson MG, Rohlman D. Studying health outcomes in farmworker populations exposed to pesticides. Environ Health Perspect. 2006 Jun;114(6):953-60. doi: 10.1289/ehp.8526. PMID: 16760000; PMCID: PMC1480483.

> those containers. Results from this study indicate that PFAS present in the inside walls of the fluorinated HDPE containers can be readily leached into formulated liquid products, with higher total amounts seen for products formulated in organic solvents such as methanol compared with water-based products. For both solvents tested (methanol and water), the study also shows continued gradual leaching of PFAS over time."[6]

The way in which samples are obtained for testing—and whether they have actually been stored in the same types of containers used for products offered for sale—will determine whether the results are truly representative of PFAS concentrations in pesticide products entering the market.

Farmworkers are one of the most overburdened environmental justice communities in the state. By decisively addressing PFAS contamination in pesticides, the Maryland General Assembly will be ensuring that they are no longer exposed to severe health risks stemming from PFAS exposure. This will benefit farmworkers, rural communities, and every state resident who may be exposed to PFAS in food and the environment. SB158 will protect the health of Marylanders and become a model for states across the nation. Farmworker Justice and MCN urge the committee to support this important public health legislation.

Respectfully submitted,

Mayra Reiter, MPA, MSES

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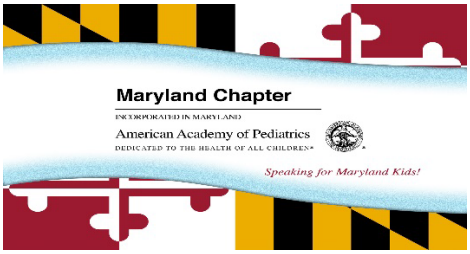
[6] U.S. EPA. *Per- and Polyfluoroalkyl Substances (PFAS) in Pesticide and Other Packaging*. Updated December 14, 2022. https://www.epa.gov/pesticides/pfas-packaging

SB0158_FAV_MDAAP_Pesticide Registration - PFAS Tes
Uploaded by: Mike Ichniowski
Position: FAV



TO: The Honorable Brian J. Feldman, Chair
Members, Senate Education, Energy, and the Environment Committee
The Honorable Shelly Hettleman

FROM: Dr. Michael Ichniowski

DATE: February 2, 2023

RE: **SUPPORT** – Senate Bill 158 – *Pesticide Registration – PFAS Testing – Requirements*

The Maryland Chapter of the American Academy of Pediatrics (MDAAP) is a statewide association representing more than 1,100 pediatricians and allied pediatric and adolescent healthcare practitioners in the State and is a strong and established advocate promoting the health and safety of all the children we serve. On behalf of MDAAP, we submit this letter of **support** for Senate Bill 158.

PFAS (Per- and Poly-Fluoro Alkyl Substances) are known as "forever chemicals" because they do not break down and persist unchanged in the environment. They contain one or more fully fluorinated carbon atoms and have been found in pesticides, including those used for mosquito control. They have been identified as both active and inert ingredients, and they have been suspected as possible contaminants that have leached from the containers in which they are stored or shipped. At present, there are over 12,000 chemicals identified as PFAS.

PFAS have been widely detected in human blood samples and **most commonly enter the body by ingestion of contaminated food or water, or through inhalation of sprayed PFAS or of dust particles contaminated with PFAS.** Once present, they are poorly excreted and persist in the human body, with half-lives often measured in years to decades for some of the PFAS with longer chains of fluorinated carbon; some of these chemicals have also been found to bioaccumulate within tissues in the body. With this environmental and circulatory persistence, the potential for lifetime exposure and accumulation of PFAS is substantial, especially in children, who would have higher levels of exposure relative to their weight over a longer span of years.

Children and fetuses are also uniquely susceptible to the effects of toxic chemicals, **a vulnerability to minimal amounts that contradicts the commonly held misconception that it is the dose that determines the toxicity of a particular substance.** PFAS can cross the placenta and enter the fetal circulation, and the amount to which the fetus is exposed relative to weight is far greater than that of the mother. Toxic exposures during the time of brain and organ formation and of early growth can have long-lasting impacts on an unborn child, interfering with normal neurologic development. Infants and young children also have higher levels of exposure to toxic substances in their environment. They eat and drink more relative to their body weight than adults, and their frequent hand-to-mouth behaviors increase inadvertent non-food ingestions, such as from outdoor soil or contaminated house dust. It is easy to imagine the risk of ingestion for a child playing outdoors on a recently treated yard or play area.

Research has identified the following adverse health effects from exposures to PFAS chemicals:

- Cancer of the kidneys, testicles, ovaries, prostate; non-Hodgkins lymphoma (PFOA, other PFAS)
- Bladder cancer (PFOS)
- Immune suppression: reduced levels of vaccine-induced antibodies (tetanus, diphtheria, rubella, mumps, Hemophilus influenza B, Hepatitis A&B) (PFAS); increased risk of infections in exposed children (PFOS, PFHxS, PFOA, PFNA)
- Increased risk (PFOS, PFOA, total PFAS) and severity (PFBA, a PFAS that accumulates in lung tissue) of COVID-19 infections
- Thyroid disease, primarily hypothyroid, both congenital and acquired (PFAS)
- Low birth weight, decreased birth length and head circumference (PFOA, PFOS)
- Pre-eclampsia (PFOA)
- Increased liver enzymes and non-alcoholic fatty liver disease (PFOS, PFHxS)
- Increased total and LDL cholesterol (PFOA, total PFAS)
- Impaired kidney function (decreased glomerular filtration rate) (PFAS)
- Increased serum uric acid (marker of risk for kidney disease) (PFAS)

Senate Bill 158 would initially prohibit the use of mosquito control products that contain PFAS, beginning in 2024, and then all pesticides that contain PFAS by 2026, which would reduce the risk of exposure to these chemicals for children in Maryland. Our children deserve the opportunity to live and grow in a safe environment, protected from toxic exposures beyond their control.

Because Senate Bill 158 would be expected to reduce such exposures to PFAS and their potential toxicities, MDAAP requests a favorable report on this proposed legislation.

SB158_PElder_fav.pdf
Uploaded by: Patrick Elder
Position: FAV

Testimony: SB 158: Pesticide Registration - PFAS Testing - Requirements

Submitted to: The Senate Committee on Education, Energy, and the Environment (EEE)

Position: In Support

February 2, 2023

Dear Chair Feldman, Vice Chair Kagan, and Members of the Committee:

I'm concerned about the presence of Perfluorooctanoic acid (PFOA) in St. Inigoes Creek in St. Mary's County.

I live in the Rosecroft Community of St. Mary's City, Maryland. It's a beautiful place, the birthplace of Maryland. About 70 homes occupy the Rosecroft peninsula. The neighborhood is steeped in Maryland history. My property is believed to be the site of one of the colony's seaports. We're adjacent to Rosecroft Point, home of the 17th-century British tax collector.

Our property slopes into the sea where slaves loaded tobacco onto ships. The property also serves as the drain for the neighborhood's surface water. There are times during storms when a 3-foot-wide rushing stream flows from culverts under the road through our property into the phragmite and the marsh on the edge of St. Inigoes Creek.

Our community annually participates in the Maryland Department of Agriculture's Mosquito Control Program. The community volunteer for the program informed us that Permanone 30-30 is used for regular applications from spring through early fall. I don't think this is a good idea. I think this is poisonous public policy.

In 2020, a sample of this product was tested by Eurofins lab (an international lab used by EPA for testing for at least three decades to date) and was found to contain high concentrations of PFOA. While other samples provided a few months after by Maryland Department of Agriculture and the manufacturer Bayer were found to be PFAS-free, the jury is out as to why the testing varied from 3,500 parts per trillion (ppt) of PFOA as reported in the initial test by Eurofins lab.

When it rains, it pours. Torrents of rain cleanse the chemically sprayed yards of my neighbors, sending the waters to drain to our sloping property and into the sea.

Using a Freshwater Future water test kit, I discovered 21.7 ppt of PFOA in the creek. The company used the University of Michigan's Biological Station for testing. The water sample was analyzed following the EPA method 537 Rev. 1.1

PFOA has been found in high levels in clams. The compound may become airborne to settle in our lungs and in dust in our homes.

It's amazing to me that many people have still not heard of these disastrous chemicals.

I ask that the Committee vote favorably to pass SB158 to require pesticides be found PFAS-free in Maryland.

Thank you,

Pat Elder, St. Mary's City, MD

Testimony In Support of SB 158 - EEE - Pesticides

Uploaded by: Rich Ceruolo

Position: FAV

February 1, 2023

Maryland's Senate
6 - 11 Bladen St.
Annapolis, MD. 21401

In Support of SB 158: Pesticide Registration – PFAS – Testing Requirement

Good day members of the Senate's Education, Energy and Environment Committee.

We are an organization of military and non-military families with over 1500 members and fully support we am writing to you today as parents and lovers of the environment and to offer our support for SB 158 reducing or eliminating the use and amounts of PFAS across the state of Maryland.

PFAS is a chemical commonly used for many household items already in our homes. This group of chemicals is used in the production of a range of products including; pesticides, lifejackets, non-stick pans, carpeting and firefighting foam chemicals. They do also exist in personal care products like sunscreens, shaving creams and cosmetics like mascara.

PFAS are problematic because they are toxic to humans due to their very slow rate of decay and can remain in the planets ecosystem for decades before they begin to decompose in any way. Studies have shown that these chemicals have already entered the drinking supplies of major cities across the country including New York, and Chicago according to the Centers for Disease Control and many environmental watchdog groups.

Please support this legislation so that we can start the long process of removing this toxic substance from our everyday lives and hopefully work to remove it from our drinking water, waterways and our local ecosystem. Patchwork solutions seldom work well. We need policy that is bold, wide reaching, and can make a positive impact across the state. And maybe help to influence our regional / DELMARVA neighbors, and positively impact their environmental policies.

Please support SB 158 and return a favorable report. Thank you for your time, and for considering our testimony today.

Mr. Richard Ceruolo | richceruolo@gmail.com
Parent, Lead Advocate and Director of Public Policy
Parent Advocacy Consortium | https://www.facebook.com/groups/ParentAdvocacyConsortium

SB 158_Maryland Catholics for Our Common Home_FAV.
Uploaded by: Robert Simon
Position: FAV

Maryland Catholics for Our Common Home

Responding to the cry of the Earth and the cry of the poor.

Hearing before the Senate Education, Energy, and the Environment Committee
Maryland General Assembly
February 2, 2023

Statement of Support (FAVORABLE)
of Maryland Catholics for Our Common Home on
SB 158, Pesticide Registration - PFAS Testing - Requirements

Maryland Catholics for Our Common Home (MCCH) is a lay-led organization of Catholics from parishes in the three Catholic dioceses in Maryland: The Archdiocese of Baltimore, the Archdiocese of Washington, and the Diocese of Wilmington. It engages in education about, and advocacy based on, the teachings of the Catholic Church relating to care for creation. MCCH is a voice for the understanding of Catholic social teaching held by a wide array of Maryland Catholics, but should be distinguished from the Maryland Catholic Conference, which represents the public policy interests of the bishops who lead these three dioceses.

MCCH would like to express its strong support for passage of Senate Bill 158, Pesticide Registration - PFAS Testing - Requirements. As Catholics and environmentalists, we are guided by the call to action of Pope Francis' 2015 encyclical, entitled *Laudato Si': On Care for Our Common Home*.* There, Pope Francis acknowledged that "some forms of pollution are part of people's daily experience. Exposure to atmospheric pollutants produces a broad spectrum of health hazards, especially for the poor, and causes millions of premature deaths. People take sick, for example, from breathing high levels of smoke from fuels used in cooking or heating. There is also pollution that affects everyone, caused by transport, industrial fumes, substances which contribute to the acidification of soil and water, fertilizers, insecticides, fungicides, herbicides and agrotoxins in general. Technology, which, linked to business interests, is presented as the only way of solving these problems, in fact proves incapable of seeing the mysterious network of relations between things and so sometimes solves one problem only to create others." (no. 20)

The aim of Senate Bill 158 is to address the concerns raised by Pope Francis regarding exposure to pesticides and the growing evidence of danger from PFAS (Per- and Poly-fluoroalkyl Substances). Commonly known as forever chemicals—because PFAS do not break down in nature and because these chemicals can easily migrate into the air, dust, food, soil, and water—the depth and reach of their harmful exposure is unconscionable. The strict limitations in Senate Bill 158 on levels of PFAS, first in pesticides against mosquitoes and then in all pesticides, responds to the adverse health impacts that PFAS-containing pesticide formulations inflict on all of the residents of this State. It is for these reasons that we request a **favorable** report on Senate Bill 158. Thank you for your consideration of our views.

* The English text of the encyclical, to which the paragraph number in the parenthesis below refers, can be found at: https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

SB158_MDSierraClub_fav_2Feb23.pdf
Uploaded by: Rosa Hance
Position: FAV

P.O. Box 278
Riverdale, MD 20738

Committee: Education, Energy, and Environment
Testimony on: SB158 Pesticide Registration - PFAS Testing - Requirements
Position: Favorable
Hearing Date: February 2, 2023

The Maryland Chapter of the Sierra Club strongly supports SB158, which would prohibit the Secretary of Agriculture from registering a pesticide for use against mosquitoes in the State unless the distributor of the pesticide submits to the Department test results indicating the pesticide has passed the PFAS test and an affidavit attesting to the legitimacy of the PFAS test results; and prohibiting, beginning January 1, 2026, the Secretary from registering a pesticide for use in the State unless PFAS test results and a certain affidavit are submitted by the distributor.

A recent study of commonly used pesticides has found 6 of 10 to have surprisingly high levels of levels of PFAS chemicals.[1] This is of great concern because PFAS chemicals once applied to the soil can become part of food crops. According to the U.S. Environmental Protection Agency (EPA), PFAS are artificial substances that have been used in thousands of products since the 1940s. PFAS can be found in many household and personal care products, food packaging, even food itself (such as dairy products from cows exposed to PFAS). PFAS can travel easily through the environment and break down extremely slowly. This can lead to PFAS in public water systems and private wells. PFAS can also contaminate soil and water near landfalls, hazardous waste sites, and any manufacturing or chemical production facilities that use or produce PFAS.

Current research suggests that continued exposure to PFAS can lead to numerous harmful health effects. Since PFAS do not break down easily, they can accumulate over time in the human body. PFAS can lead to reproductive issues, delayed development in children, increased risk of certain cancers, increased cholesterol levels, hormonal effects, and immunosuppression. However, because there are thousands of PFAS it is difficult to determine precisely how each one impacts human health.[2]

Maryland must take action to protect our most vulnerable populations (children and pregnant women) from the known and unknown public health impacts of PFAS. There are already 98 PFAS regulations in 20 states.[3] We strongly support a favorable vote in SB 0158.

Sarah Peters
Natural Places Committee
petesa05@gmail.com

Josh Tulkin
Chapter Director
Josh.Tulkin@MDSierra.org

[1] Journal of Hazardous Materials Letters (Sept 2022) https://beyondpesticides.org/dailynewsblog/2022/10/despite-epa-safety-assurances-alarming-levels-of-pfas-found-in-commonly-used-pesticides/
[2] https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas
[3] https://www.saferstates.com/toxic-chemicals/pfas/

SB158_SLynch_fav.pdf
Uploaded by: Sean Lynch
Position: FAV

Position: Supporting SB 158: Pesticide Regulation - PFAS Testing - Requirements Bill
Submitted to: Senate Education, Energy, and the Environment Committee (EEE)
Submitted by: MOM's Organic Market
February 2, 2023

I am Sean Lynch, Environmental Research & Partnership Manager representing MOM's Organic Market. Ten of our twenty-two stores are located in Maryland, serving thousands of Marylanders daily. Our customers demonstrate their concern about pesticide exposure and toxins in the environment by choosing organic. We strongly support the Pesticide Regulation - PFAS Testing - Requirements Bill and ask for your favorable vote.

PFAS introduced through pesticides used in agriculture, mosquito control products, and other uses constitute yet another toxic and unnecessary exposure to dangerous chemicals that have far-reaching harmful effects for all citizens of Maryland. Mosquito control pesticides are applied to Maryland communities, parks, and lawns, exposing families and children to direct harm from PFAS. Children exposed to PFAS will carry these chemicals in their bodies forever. The discovery of PFAS in food grown in fields with commonly used pesticides containing PFAS is an alarming, almost unimaginable public health threat. So too, when DDT, lead paint, and CFCs were found to have overwhelming harm on wildlife, our children, and the ozone layer. Yet, by our leaders taking concrete steps to eliminate these threats, what was once perceived as insurmountable became achievable. Positive reports on the repair of our ozone layer are a recent example of what we need to do to turn off the tap of PFAS in pesticides, which is contaminating our food, our bodies, soil, and waterways.

Maryland must protect its residents and our environment from this hazard. The first crucial step to turning off this tap is for this EEE Committee to pass **SB 158**.

MOM's Purpose is *to protect and restore the environment*. Since 2014, we have held an annual "Save the Dandelions" campaign to help raise awareness of the effects that toxic pesticides and herbicides have on our environment, wildlife, pollinators, and health. In past and current legislative sessions, we have advocated for bills that ban PFAS in food and wellness products. This bill is a part of the work we have been passionate about for years and will continue to advocate for.

PFAS, or "forever chemicals," are harmful man-made chemicals that do not break down in our natural environment. They are introduced into our environment through food, wellness, agriculture, and other products and make their way into our soils, waterways, and bodies. They are linked to cancer, developmental issues, congenital disabilities, thyroid disease, liver and kidney impairment, more severe Covid-19 infection, and much more.

In addition to advocating for the regulation of pesticides and PFAS, we consider it our responsibility to educate our consumers - many of whom are mothers of children - about the harms of these substances. PFAS are still a relatively obscure topic to the average citizen, which has helped manufacturers fly under the radar of state regulations and environmental departments. PFAS have gone unregulated for far too long.

Now is the time to regulate pesticides and PFAS. We call on Maryland Legislators to ensure there are no PFAS in mosquito control products and pesticides in the state.

SB 158
Uploaded by: Senator Hettleman
Position: FAV

SHELLY HETTLEMAN
Legislative District 11
Baltimore County

Judicial Proceedings Committee

Joint Committee on Children, Youth, and Families

Joint Committee on the Chesapeake and Atlantic Coastal Bays Critical Area

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The Senate of Maryland
ANNAPOLIS, MARYLAND 21401

TESTIMONY OF SENATOR SHELLY HETTLEMAN
SB158 PESTICIDE REGISTRATION - PFAS TESTING REQUIREMENTS

Polyfluoralkyl substances (PFAS) are man-made "forever" chemicals that have been given that name because there is no known safe way to dispose of them and they do not break down in the environment. They exist in our air, land, and water. Why is this a problem? Because many, many studies have demonstrated that exposure to PFAS is linked to cancer, kidney disease, birth defects, an impaired immune system and other serious long term health consequences.

Last year, we recognized the harm in PFAS and stepped in to prohibit their sale in rugs and carpets, food packaging, fire-fighting foams and personal protective equipment.

Unfortunately, Maryland has found alarming levels of PFAS in our Chesapeake Bay and its tributaries, as well as in fish. In fact, the Maryland Department of the Environment issued a warning in October, 2021 against eating three kinds of fish caught in Piscataway Creek in Prince George's County.

Permanone 30-30 is a pesticide for mosquito control that was sprayed by the Maryland Department of Agriculture (MDA) in 2,100 communities each year and was found by an EPA-approved lab to contain two PFAS chemicals. Another insecticide, Mavrik, which is listed by MDA as an option for mosquito control, was found by the Massachusetts Department of Environmental Protection to be contaminated with PFAS. Other chemicals are used by private companies around homes, schools, and businesses, and sink into our crops and food system. It is extremely difficult to control one's exposure to these chemicals with the reality that they are being sprayed ubiquitously throughout the state. How does this bill address these issues?

SB158 will protect Marylanders and our air, earth, and water by requiring manufacturers of mosquito control products in the state to provide annual independent lab testing and certification to document that the pesticide is PFAS-free beginning in January, 2024. And, as of January, 2026, manufacturers of all pesticides must provide this same testing to demonstrate the pesticide is PFAS-free. These labs are accessible and testing is inexpensive.

Today you will hear from experts on why we need to turn off the tap on PFAS in mosquito-control products and other pesticides. I want to stress and assure you that there are still products that MDA and others have that they can employ. We <u>should not</u> be spraying Marylanders inadvertently with PFAS, and it should be the manufacturers that test for safety. I urge your support for SB158. Thank you

HB158_SLasee_fav.pdf
Uploaded by: Steven Lasee
Position: FAV

LASEE
RESEARCH & CONSULTING

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SB 158: Pesticide Regulation - PFAS Testing - Requirements Bill

Submitted to: Senate Education, Energy and Environment Committee

Submitted by: Steven Lasee, MS, PhD (Independent Scientist, Lasee Research and Consulting)

Position: Supporting

February 2, 2023

Hello, I am Dr. Steven Lasee. I have a masters and doctoral degree in Environmental Toxicology from Texas Tech University. **The primary focus of my research for nearly 10 years has been per and poly-fluoroalkyl substances (PFAS) exposure, particularly through consumption of food and drink.** Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are the two most well-known members of this chemical group and the two of highest regulatory concern. PFAS and PFOS are two very similar terms that can get confusing. PFAS is the chemical group, and PFOS is a chemical that is part of that group.

In summary, these are the major points from this testimony:

- 98% of Americans' PFAS exposure is through their mouths. Exposure to PFAS is associated with numerous serious health effects.
- As noted in my peer-reviewed research, I observed PFAS in 6 out of 10 common insecticides we tested.
- PFAS were also observed in corn, green beans, peanuts, and soil collected from the test site.
- PFOS concentration in the corn, green beans, and peanuts were thousands of times higher (323 ppt, 426 ppt, and 41 ppt) than the EPA's interim health advisory level for PFOS in drinking water (0.02 ppt).
- PFAS concentrations found in soils treated with the tested insecticides will result in concerning PFAS concentrations in the food grown in it for many years to come.
- Additional PFAS, other than PFOS, found in plant and soil samples at the site suggest additional unknown sources of PFAS impacting the site (ie. other applied products, degradation of other PFAS, environmental transport from elsewhere).

I'm giving testimony because I am an expert in PFAS exposure and, primarily, because **I recently published a peer-reviewed study where I found PFAS concentrations (PFOS in particular) in 6 out of 10 tested insecticides** (*Lasee et al. 2022* [1]). I observed PFOS concentrations ranging from 3.9 – 19.2 million parts per trillion (ppt) in the insecticide samples I tested**. The PFOS I observed was not a listed component of the products.** Possible explanations for this PFOS could be: proprietary "inert" ingredients not required in labeling by the EPA, contamination during manufacturing, or post manufacturing contamination (ie. containers, application equipment). Regardless of how the PFOS got into the insecticides, it will end up on anything they are applied to, including our food.

EPA scientists have estimated that 98% of the average American's exposure to PFAS happens through their mouth (oral consumption of food, water, and, to a much lesser extent, dust containing PFAS *(Egeghy and Lorber 2011* [2]*; Lorber and Egeghy 2011* [3])). Many PFAS have incredibly long biological half-lives in humans (some as high as 10+ years) making any exposure to these chemicals a lifelong ordeal. PFAS blood concentrations are associated with reduced birth weight and head size, weakened immune system, endocrine disruption, weight gain, and certain types of cancer.

As I stated earlier, the majority of exposure to PFAS occurs through food and water consumption. In my study, **I tested crops grown at the site (a USDA crop genetics research center) to see if the PFOS concentrations I found in the insecticides were reflected in the crops**. PFOS was not the only PFAS I found. Corn, green beans, and peanut samples collected from the site had PFOS concentrations of 323 ppt, 426 ppt, and 41 ppt. The EPA is currently in the process of developing new exposure guidelines for PFOS, but their interim health advisory level for PFOS in drinking water is 0.02 parts per trillion (ppt). When I went searching for control (non-contaminated) crops near the site, all fields I sampled within two miles were similarly contaminated with PFAS, suggesting the PFAS contamination I observed could be more pervasive and impact numerous different crops meant for both human and animal consumption.

These numbers aren't directly translatable, but a single serving (100 grams, about a cup) of the vegetables I tested would result in a PFOS exposure equivalent to consuming 1,100 (corn), 1,400 (beans), and 140 (peanuts) years of PFOS-contaminated water at the EPA's interim health advisory level. I know that sounds ridiculous, 1400 years of exposure from a cup of beans? **But the interim health advisory level set up by the EPA was done under the idea that no exposure to PFOS (and PFOA) is really "safe" over a lifetime.**

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[1] Lasee S, McDermett K, Kumar N, Guelfo J, Payton P, Yang Z, et al. 2022. Targeted analysis and Total Oxidizable Precursor assay of several insecticides for PFAS. J Hazard Mater Lett 3:100067

[2] Egeghy PP, Lorber M. 2011. An assessment of the exposure of Americans to perfluorooctane sulfonate: A comparison of estimated intake with values inferred from NHANES data. J Expo Sci Environ Epidemiol 21:150–168

[3] Lorber M, Egeghy PP. 2011. Simple intake and pharmacokinetic modeling to characterize exposure of Americans to perfluoroctanoic acid, PFOA. Environ Sci Technol 45:8006–8014

PFAS are notoriously resistant to degradation. Most PFAS of toxicological concern essentially do not break down in the environment, and, those that do break down, tend to break down into other PFAS. PFAS that make their way into soils tend to stay there and are available for uptake by plants. I tested the soil at the site and found concentrations of several PFAS. PFOS was the highest at 1720 ppt, which is not surprising considering the source could be the insecticides I tested. This soil PFOS could contribute 397 ppt PFOS to the shoot and 387 ppt to the root tissues of plants grow in the soil (Using equations developed from *Lasee et al. 2020* [4]). **This PFAS in the soil will continue to pose consumptive risk through plant uptake essentially indefinitely.**

Reduction of sources of PFAS in our food system through SB 158's protection from PFAS in pesticides will ultimately reduce human exposure to PFAS. Therefore, I urge a favorable report from this committee on SB 158. Thank you for your time. Please contact me if you have any questions.

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[4] Lasee S, Subbiah S, Deb S, Karnjanapiboonwong A, Payton P, Anderson TA. 2020. The Effects of Soil Organic Carbon Content on Plant Uptake of Soil Perfluoro Alkyl Acids (PFAAs) and the Potential Regulatory Implications. Environ Toxicol Chem 00:1–14

PFAS in Pesticides Testimony - Senate.docx.pdf
Uploaded by: Taylor Smith-Hams
Position: FAV

February 2, 2023

Pesticide Registration - PFAS Testing - Requirements (SB0158)
Position: FAVORABLE

Dear Chairperson Feldman and Members of the Education, Energy, and the Environment Committee,

Blue Water Baltimore is a nonprofit organization with a mission to restore the quality of Baltimore's rivers, streams, and Harbor to foster a healthy environment, a strong economy, and thriving communities. **We write today in support of Pesticide Registration - PFAS Testing - Requirements (SB0158).**

Per- and polyfluoroalkyl substances (PFAS) do not break down in the environment, and there is no known way to destroy or safely dispose of them. These "forever chemicals" have made their way into our drinking water,[1] the Chesapeake Bay and its tributaries,[2] our soil, our food,[3] and consequently, our bodies.[4]

Testing pesticide products for PFAS contamination would protect the health of Maryland residents and the environment amidst an emerging PFAS crisis. The federal Environmental Protection Agency (EPA) is not addressing PFAS with the urgency this critical issue demands. We must take action in Maryland to fill this void.

This bill would prohibit all sales and use of pesticides that contain PFAS by 2026 in Maryland. After that date, only pesticides that are tested and proven to be PFAS-free will be permitted in Maryland. This legislation will help "turn off the tap" for new PFAS entering Maryland's agricultural and food systems, from which it contaminates our waterways and our communities.

Pesticides do not require PFAS to be effective. And this bill will not burden taxpayers; instead, it will put the costs of testing on the responsible party: multi-billion-dollar pesticide manufacturers. Marylanders need this immediate protection from unnecessary PFAS exposures through pesticides and the food we consume. This critical step will help turn off the tap of dangerous PFAS-containing products and unnecessary PFAS contamination.

We urge a favorable report on SB0158.

Sincerely,

Taylor Smith-Hams

Taylor Smith-Hams
Advocacy & Outreach Senior Manager

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[1] Sydney Evans, et al. (2020). PFAS Contamination of Drinking Water Far More Prevalent Than Previously Reported. Environmental Working Group.
[2] Betsy Nicholas. (2022). Monitoring PFAS in Bay Waters. Presented at the Pesticides & the Chesapeake Bay Watershed Project Conference.
[3] U.S. Food & Drug Administration. (2022). Testing Food for PFAS and Assessing Dietary Exposure.
[4] Centers for Disease Control & Prevention. (2022). Per- and Polyfluorinated Substances (PFAS) Factsheet.

SB158_VRuiz-MFFWP_fav.pdf
Uploaded by: Virginia Ruiz
Position: FAV

Testimony in Support of SB 158 Pesticide Regulation – PFAS Testing – Requirements

February 2, 2023
Committee: Education, Energy, and the Environment
Submitted by: Virginia Ruiz, Marylanders for Food and Farm Worker Protection Coalition
Position: Favorable

Thank you for this opportunity to submit testimony in support SB 158**,** on behalf of Marylanders for Food & Farm Worker Protection (MFFWP). MFFWP is a broad diverse coalition of organizations and labor law experts that advocates to improve health and safety rights and protections for the poultry workers, crab pickers, and field workers in Maryland. If enacted, SB 158 will provide essential health and safety protections for vulnerable communities living and working in rural Maryland.

MFFWP testimony covers these key points:

1. The burden of hazardous chemical exposure in recognized Environmental Justice communities is a public health and environmental issue. Both the overburdened and underserved need better protection from known and avoidable environmental and public health hazards.
2. Maryland's farmworkers, poultry, and seafood workers, predominantly people of color, are crucial members of our communities who we rely on for our food - yet they lack basic safety and health protections.
3. Food and farmworkers are already routinely exposed to high levels of pesticides in the fields where they work and in the communities where they live.
4. SB 158 is essential to prevent exposures to PFAS in the already overburdened rural communities who live and work on the front lines of pesticide applications.

Maryland is home to thousands of essential workers in the state's agricultural and food processing industries. Workers in these industries are predominantly from communities of color – most are either immigrants or from foreign countries here on temporary work visas. They work long hours in hazardous conditions for low wages. We rely on them to provide the meat, fruits and vegetables that are vital to our food supply and to Maryland's economy – including watermelons, tomatoes, crab meat and poultry. Maryland's farmworkers, poultry, and seafood workers are crucial members of our communities - yet this underserved population lacks basic safety and health protections.

- Agricultural pesticides pose great risks to human health and the environment, and food and farmworkers are routinely exposed to high levels of pesticides in the fields where they work, in disinfectants used in the food processing plants, and in worker housing. Pesticide exposure causes these workers to suffer more chemical-related injuries and illnesses than any other workforce in the nation. Each year, thousands of food and farmworkers experience the effects of acute pesticide poisoning, including headaches, nausea, shortness of breath, or seizures. Workers and their families have an increased risk for certain cancers and other diseases, which may be associated with pesticide exposure. Research shows

> that children of workers who come into contact with pesticides are at higher risks of birth defects, childhood cancer and leukemia, for example. Despite these risks, Maryland's food and farmworkers often lack access to preventive care, medical assistance, health insurance and medical treatment.

The alarmingly high levels of PFAS found in pesticides commonly used in Maryland is concerning for all citizens, but especially for the already overburdened communities who live and work on the front lines of pesticide applications. Like pesticides, PFAS have been linked to acute and long-term adverse health impacts, including immune system failures, metabolic disorders, cancer, and fetal development issues. But there are no studies on the synergistic effects of combining these "forever chemicals" with pesticides. Exposure to PFAS-containing pesticides is an egregious added assault to a population that already suffers from significant inequity and lack of environmental justice. We must act quickly to stop any further harm to these overburdened communities from exposure to PFAS in pesticides.

SB 158 provides a commonsense approach to eliminate a recognized source of contamination, and reduces the cumulative impacts, effects, and exposure to PFAS in these sensitive communities and ensures safer food, air, and water for all. MFFWP urges you to support passage of SB 158 banning all sales and uses of PFAS-containing pesticides in Maryland. Thank you.

SB 0158_IndivisibleHoCoMD_FAV_VirginiaSmith.pdf
Uploaded by: Virginia Smith
Position: FAV

SB0158 – Pesticide Registration – PFAS Testing – Requirements

Testimony before

Senate Education, Energy, and the Environment Committee

February 2, 2023

Position: Favorable

Mr. Chair, Mdm. Vice Chair and members of the committee, my name is Virginia Smith, and I represent the 750+ members of Indivisible Howard County. We are providing written testimony today in ***support of SB0158,*** which would set up a timeline for the removal of PFAS from pesticides. We appreciate the leadership of Senator Hettleman in sponsoring this important legislation.

It has been found that exposure to PFAS chemicals at high levels can cause thyroid disease, higher cholesterol levels, kidney and testicular cancer, ulcerative colitis, pregnancy-induced hypertension, liver damage, and kidney disease. At lower levels, it has been found to reduce the immune system's response, but research is continuing that could show even low-level exposure could cause much more severe concerns. Due to the fact that we are exposed to PFAS chemicals every day from a variety of sources, it is imperative that we try to remove as many as possible. This would hopefully limit the potentially deadly impacts of exposure. This bill will continue that process by ensuring that PFAS chemicals are removed from all pesticides by January 1, 2026 (sooner for pesticides targeting mosquitos).

For these reasons, we support SB0158.

Thank you for your consideration of this important legislation.

We respectfully urge a favorable report.

Virginia Smith
Columbia, MD 21044

ACC Comments on SB 158 2_2_23.pdf
Uploaded by: Anastasia Swearingen
Position: UNF

February 2, 2023

Testimony of Anastasia Swearingen, Executive Director, American Chemistry Council Center for Biocide Chemistries

RE: Maryland Senate Bill 158, Pesticide Registration—PFAS Testing—Requirements

The American Chemistry Council appreciates the opportunity to provide testimony on Senate Bill 158, which creates annual PFAS testing requirements for the registration of all pesticides in Maryland. ACC's Center for Biocide Chemistries represents manufacturers of antimicrobial pesticides, including preservatives, disinfectants, industrial biocides, and antifouling paints. These antimicrobial products are critical for protecting public health, increasing the sustainability of everyday products and construction materials, and preventing contamination in industrial processes. This legislation risks the availability of these important products to Maryland consumers, hospitals, schools, and businesses.

ACC is opposed to this legislation as drafted. Antimicrobial registrants submit significant amounts of data to the U.S. Environmental Protection Agency and state pesticide regulatory authorities before any registration is approved. These include environmental and human health toxicity data, exposure information, and any required efficacy data against public health pathogens. Registrants must also disclose all ingredients in their formulations to regulatory authorities. These important reviews help ensure that the antimicrobial products on the market in Maryland and across the U.S. are safe to use as directed.

Requiring registrants to submit annual PFAS testing results will pose a significant burden on antimicrobial registrants. **There are no approved test methods for testing the presence or levels of PFAS in antimicrobial product**s, which come in a variety of forms from wipes to granules to liquids. We also note that the proposed PFAS levels are extremely low and do not have toxicological significance. Further, the presence of fluorine is not necessarily indicative of the presence of PFAS, and therefore would be an inappropriate test standard.

Even if appropriate test methods for the presence of PFAS in antimicrobial substances were developed, the bill requires that the test occur in an EPA or Maryland Department of Environment-approved laboratory. Lab capacity would need to expand exponentially to allow for annual testing of not just antimicrobials, but all registered pesticides in Maryland. Likely, there would be a significant backlog of testing, which could result in critical antimicrobial products used in hospitals, schools, industrial facilities, and homes being pulled from the Maryland market. No other state requires such testing for pesticides.

This new testing requirement will particularly impact small businesses, especially those with

only one or two products registered in Maryland. Rather than comply with the additional testing burden, costs, and associated delays, it is likely that many registrants decline to sell these products in Maryland. For larger companies, they may choose to reduce the amount of variety in antimicrobial products registered in Maryland.

Further, we are not aware of existing concerns with PFAS in antimicrobial pesticides. Rather, this bill could significantly hamper the availability of antimicrobials to kill germs, keep factories running smoothly, and ensure the sustainability of products. We urge the committee members to oppose this legislation.

Oppose SB 158 - Pesticide Registration - PFAS Test

Uploaded by: Colby Ferguson

Position: UNF

Maryland Farm Bureau, Inc.

3358 Davidsonville Road • Davidsonville, MD 21035 • (410) 922-3426

February 2, 2023

To: Senate Education, Energy & the Environment Committee

From: Maryland Farm Bureau, Inc.

Re: **Oppose SB 158 – Pesticide Registration – PFAS Testing - Requirements**

On behalf of our Farm Bureau member families in Maryland, I submit this written testimony in opposition of SB 158. This bill, beginning January 1, 2024, would prohibit the Secretary of Agriculture from registering a pesticide for use against mosquitoes in the State unless the distributor of the pesticide submits to the Department test results indicating the pesticide has passed the PFAS test and an affidavit attesting to the legitimacy of the PFAS test results. Additionally, the bill, beginning January 1, 2026, would prohibit the Secretary from registering any pesticide for use in the State unless PFAS test results and a certain affidavit are submitted by the distributor.

Currently, there are no PFAS tests available for accurately testing pesticides. The bill allows for the use of drinking water tests and these tests are proven to be inaccurate on pesticides as they generate many false positives and negatives.

Until there are tests created to accurately test pesticides for PFAS and those tests be made available to the manufactures, there is no way for them to achieve the requirement proposed in this bill and would systematically remove the use of all pesticides in Maryland. This would make it impossible for farmers to continue to produce crops in the state.

MARYLAND FARM BUREAU RESPECTFULLY OPPOSES SB 158

Colby Ferguson
Director of Government Relations
For more information contact Colby Ferguson at (240) 578-0396

Maryland Senate Bill 0158.pdf
Uploaded by: Eric David
Position: UNF

Mid-Atlantic Chapter
GCSAA
Golf Course Superintendents Association of America

Education, Energy, and the Environment Committee:
Maryland State Senate
In reference to Senate Bill 0158
January 31, 2023

Dear Committee Members,

The Mid-Atlantic Association of Golf Course Superintendents opposes Senate Bill 0158. We believe all pesticides registration and review should go through the proper regulatory bodies created specifically for this purpose. The EPA has created a 2021-2024 strategic road map to address PFAS chemicals and how they affect our environment. This government entity was created to regulate the pesticide industry and should be the ultimate decision maker on the use and regulation of all pesticides in the United States.

The legislation created could not be enforced because there is no EPA validated testing method for PFAS. Testing labs would not test for the substance since there is no validated testing available. This bill is essentially a pesticide ban in the state of Maryland because the compliance requirements for registration are unattainable.

This is legislative overreach into an area that is already sufficiently state regulated by the Maryland Department of Agriculture and federally regulated by the Environmental Protection Agency. We need to allow the scientists to do their jobs and regulate the chemicals as driven by the science. That is why the Mid-Atlantic Association of Golf Course Superintendents will continue to oppose Senate Bill 0158.

Chris Sandels
MAAGCS President

Mid-Atlantic Association of Golf Course Superintendents
15 Quail Run Drive, Manakin-Sabot, VA 23103

AHI Written Testimony_MD SB 158 .pdf
Uploaded by: Ginny Siller
Position: UNF

February 2, 2023

Senator Brian J. Feldman
Chair, Senate Education, Energy & Environment Committee
2 West
Miller Senate Office Building
Annapolis, MD 21401

Senator Cheryl C. Kagan
Vice Chair, Senate Education, Energy & Environment Committee
2 West
Miller Senate Office Building
Annapolis, MD 21401

Dear Chair Feldman and Vice Chair Kagan:

On behalf of the Animal Health Institute (AHI), we respectfully oppose SB 158 related to the registration of pesticides in the state and new PFAS testing requirements, unless amended to exempt animal products approved and regulated by the U.S. Environmental Protection Agency (EPA).

The Animal Health Institute (AHI) is the national trade association representing the companies that make the animal medicines, vaccines and parasiticides, including flea and tick products, that keep animals and humans healthy.

While we believe the intent of the bill is to address mosquito pesticides that are a mass application, the bill language does not take into consideration the individually applied products, like those for companion or food animals. The PFAS in these important products are the actual active ingredient that are regulated by EPA and have gone through rigorous testing and analysis as a condition of approval for use. These products would likely be banned if subjected to these PFAS tests outlined in the bill, despite the rigorous EPA analysis that shows them to be effective and suitable for their intended use.

Many households rely on these affordable products to keep pets free from disease and, in some cases, these illnesses are zoonotic, or able to infect humans. These products allow pet owners to live in close proximity with their pets without fear of pest infestation or illnesses. Placing unnecessary requirements on these products would ultimately make it difficult for animal health companies to provide access to these products to veterinarians, food producers and pet owners which in turn would be detrimental to the health of Maryland residents and pets.

For these reasons, we ask that animal health products approved by the EPA not be subject to the requirements of this bill and offer this possible exemption language:

> *Pesticide products used to treat, or administered to, animals, approved and regulated under the United States Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 136 et seq.).*

This bill may lead to a situation where Maryland residents do not have access to safe and effective flea and tick medicines for their pets. These animal health products are fully regulated by the EPA, including in the area of PFAS, and new state requirements, such as those proposed here, would impede delivering these essential products.

We urge you to oppose SB 158 unless amended with exemption language for animal health products. Thank you for your consideration.

Sincerely,

Ginny S. Siller
Director, Government Affairs

1325 G Street, NW ■ Suite 700 ■ Washington, D.C. 20005-3104
Telephone (202) 637-2440 ■ Fax (202) 393-1667
www.ahi.org

SB 158 - Pesticide Registration and PFAS Testing.p
Uploaded by: Holly Porter
Position: UNF

Educate. Advocate. Innovate.

Date: February 2, 2023
To: Members of the Senate Committee on Education, Energy, and the Environment
From: Holly Porter, Executive Director
Re: SB 0158 – Pesticide Registration – PFAS Testing - Requirements - **OPPOSE**

Delmarva Chicken Association (DCA) the 1,600-member trade association representing the meat-chicken growers, processing companies, and allied business members on the Eastern Shore of Maryland, the Eastern Shore of Virginia, and Delaware opposes SB 0158 and urges an unfavorable committee report.

SB 0158 would prohibit the Maryland Department of Agriculture from registering any pesticide for use for mosquitos by 2024 and for any other pesticide by 2026 unless the distributor of the pesticide submits testing of PFAS to the department.

Currently the United States Environmental Protection Agency (EPA) is researching and discussing various testing strategies related to PFAS. This strategy was just released in June of 2022 and is stated by EPA that "most of the hundreds of PFAS currently in commerce have limited or no toxicity data, and if EPA attempts to research them one at a time, it will be impossible for EPA to expeditiously understand, let alone address, the risks these substances may pose to human health and the environment." That's why EPA is looking to first understand the data gaps and develop required testing.

This means currently there is no approved methods for testing and this legislation does not offer that. Once those methods are approved, then the next concern would be lab capacity to handle all of the thousands of registered pesticides in the state of Maryland.

This could effectively ban all pesticides from being registered in Maryland. This would have a detrimental impact on all aspects of agriculture, as pesticides are used in all production methods, including organic.

And more concerning is the number of disinfectants that are also registered pesticides in the state of Maryland. Disinfectants are pesticides as they kill pests – viruses and germs. So everything from common households names like Clorox, Lysol, Arm & Hammer, Ajax to commercial grade disinfectants, could no longer be registered. These disinfectants are critical in protecting our food supply as they are used every day in our harvesting plants. There are very few alternatives for disinfectants that would meet USDA guidelines for food safety. There is currently 56 pages of just those disinfectants that are registered with the pesticide database.

And disinfectants are used for worker safety as well. Long before COVID, hand sanitizers and disinfectants were part of the every-day use of processing workers, and since 2020 have become even more paramount for worker protection.

Educate. Advocate. Innovate.

We appreciate the importance of understanding and addressing concerns around PFAS. However it must be done in a scientific manner that offers research, funding and ways to address data gaps – most likely at the national level, not by the state.

We urge an **unfavorable** vote on SB 0158.

Should you have any additional questions, please feel free to contact me at porter@dcachicken.com or 302-222-4069 or Grayson Middleton at middleton@dcahicken.com or 410-490-3329.

Sincerely,

Holly Porter
Executive Director

23 DMAA SB158.pdf
Uploaded by: Jenna Massoni
Position: UNF

DELAWARE-MARYLAND AGRIBUSINESS ASSOCIATION
210 Fallen Horse Cir, Suite 100, Queenstown, MD 21617
www.demdagribusiness.org
443-262-8491

Date: February 2, 2023

Senate Bill 158 - Pesticide Registration - PFAS Testing - Requirements
Committee: Education, Energy and Environment
DMAA Position: **OPPOSED**

Delaware-Maryland Agribusiness Association represents agricultural retailers and manufacturers operating in Maryland. DMAA opposes Senate Bill 158 which would require testing for PFAS with results below certain thresholds and an affidavit attesting to the legitimacy of the PFAS test results for product registration in Maryland.

Addressing per- and polyfluoroalkyl substances (PFAS) contamination has been a priority for the U.S. Environmental Protection Agency (EPA). In 2021, EPA published a Strategic Roadmap to addressing PFAS contamination. The first step in the roadmap is research: "Invest in research, development, and innovation to increase understanding of PFAS exposures and toxicities, human health and ecological effects, and effective interventions that incorporate the best available science." While we can agree and appreciate the need to address PFAS contamination, doing so needs to be based on science and the science to investigate PFAS in pesticides is not yet fully developed.

There are no validated testing methods for PFAS in pesticides. The EPA interim standard 1633 cited in the bill is validated for wastewater, ground water, surface water, landfill leachates, biosolids, sediments, soils, fish (low and high fat), oysters, clams, and crab; NOT pesticides. The Maryland Department of Health Division of Environmental Sciences Laboratory participated in the validation of this method and does not use Method 1633 for pesticides.

Further, not all fluorinated polymers are PFAS of concern. The total organic fluorine analysis cited in the bill does not distinguish between fluorinated polymers which are not of biological concern and PFAS of concern therefore, not yielding a true PFAS concentration in a substance.

In 2021, lab tests ordered by advocacy organizations claimed to find levels of PFAS in pesticides exceeding the EPA interim drinking water standard. Upon further investigation, the test used was EPA method 1633 which is not validated for pesticides. EPA and the Maryland Department of Agriculture submitted samples of the same products to a lab at Fort Meade using the oily-matrix method and EPA released a statement **confirming no detection of PFAS contamination in multiple samples.** The oily-matrix method however is not applicable for testing of all pesticide formulations. The testing methodology has to be specific to the substance being tested so even a validated method for one pesticide will not be applicable to all pesticide formulations.

The bill also requires an affidavit attesting to the legitimacy of the PFAS test. No commercial lab, nor manufacturer, will attest to the legitimacy of test results derived from a testing method not validated for the substance being tested.

The investment in testing methodology is costly and validation takes time. Validation of the EPA 1633 method took almost two years. Then, investment in commercial lab equipment by testing facilities must be made.

This bill would result in no pesticides being registered in Maryland not due to PFAS contamination but due to the inability of manufacturers to comply with the requirements for testing.

DMAA asks for your unfavorable report on Senate Bill 158.

SCPA Comments Maryland SB158 PFAS 2.23.pdf
Uploaded by: John Campbell
Position: UNF

SOUTHERN CROP PRODUCTION ASSOCIATION

P.O. Box 1410
Wetumpka, AL 36092
Tel. (478) 456-7200
scpa@southcrop.org

February 1, 2023

To: Chair Feldman, Vice Chair Kagan, and Distinguished Members of the Education, Energy, and the Environment Committee

Re: Senate Bill 158, Pesticide Registration – PFAS Testing – Requirements

Thank you for the opportunity to provide written testimony regarding SB 158. This bill seeks to require new and additional testing for pesticide products regulated by the state of Maryland and by the United States Environmental Protection Agency (EPA). **We respectfully oppose this legislation and request an unfavorable vote**.

Southern Crop Production Association (SCPA) is a regional not-for-profit trade association representing pesticide registrants, agricultural retailers and distributors who supply farmers and ranchers with products and services. SCPA's membership is comprised of over 50 member companies involved in the research and development, manufacturing, and sale of agricultural inputs including crop protection products, seeds, traits and biotechnology, seed treatments and biologics in sixteen southern states. SCPA is recognized by industry, state and federal agencies, and legislative bodies as the principal regional spokesperson for the crop production industry and related trades in the southern United States.

SB 158 is not necessary due to existing rigorous federal testing requirements for pesticides. SB 158's requirement for pesticide products to "pass a PFAS test" is not necessary to protect the public and it is unclear what purpose this "PFAS testing requirement" seeks to achieve. All pesticides, including those formulated with fluorinated chemistry, must already be registered by U.S. EPA prior to applying for and receiving state registration in Maryland. Before pesticides even enter commerce in Maryland, they must already be deemed safe by EPA. To approve a new pesticide product, EPA must determine based on data that the pesticide will not, when used in accordance with the label, and with widespread and commonly recognized practice, cause unreasonable adverse effects on the environment[1] and provides reasonable certainty of no harm to human health. EPA subjects all new pesticide products to rigorous human health and environmental review and testing requirements to satisfy these standards for registration. These testing requirements include, depending on the type of pesticide, the following:

- Product chemistry
- Physical and chemical properties
- Acute toxicity
- Efficacy testing (for public health uses)
- Ecological effects
- Environmental fate
- Applicator exposure
- Residue chemistry (for food use pesticides)

[1] 7 U.S.C. §136a(c)(5).

These tests take months and years to complete and represent an investment of millions of dollars by pesticide companies in the science that supports all products available to Maryland residents, professional applicators, and growers. EPA expends significant resources to review and approve the testing data during a rigorous process. It can take more than 11 years before a new product is registered for sale due to the rigorous registration process. Further, EPA, must periodically review each registered pesticide active ingredient to ensure it continues to meet this robust safety standard. Pesticides are unique, with more scientific data available about them than for any other products available in commerce today.

The test method suggested in the bill cannot adequately test for the presence of PFAS in pesticide products. Compliance with SB 158 would be impossible for pesticide registrants and distributors because they cannot adequately test for the presence of all PFAS in pesticides (particularly at the parts per trillion or parts per billion level). The test methods referenced in the legislation are EPA's PFAS test methods for wastewater, surface water, groundwater, soil, biosolids, sediment, landfill leachate and fish tissue—not pesticides.[2] EPA has only one internally validated method for the detection of PFAS compounds in oily matrices, such as pesticides. This method can only detect 28 PFAS.[3] It is important to note that when this validated test method was used, PFAS that were previously detected with other methods, were not found in the samples.[4] Thus ensuring an appropriate method is used is critical, otherwise results obtained from the suggested method will be inconsistent and inaccurate. We also note that the presence of fluorine is not necessarily indicative of the presence of PFAS, and therefore would be an inappropriate test standard.

Even if a valid test method existed for the full diversity of pesticide products, the laboratories in the United States capable of performing PFAS testing would be overwhelmed by test requests from hundreds of pesticide registrants wanting to ensure they comply with Maryland's requirements. Commercial labs lack the capacity to handle the volume of pesticides that would need to be tested in order to be registered and sold in the state. Maryland should not impose an infeasible and highly burdensome requirement on pesticide companies that is not necessary.

The extraordinarily low levels required for a pesticide to "pass a PFAS test" does not provide additional public health protections. The state of Maryland has not demonstrated that the presence of PFAS at extremely low levels in a pesticide (100 ppt or 10 ppb) presents any unreasonable adverse effects on human health or the environment. The state has not presented any exposure data showing whether people are even exposed to PFAS in using registered pesticides in accordance with their directions for use. There is no evidence that this is a growing or widespread public health concern for pesticide users. Pesticide registrants are required to report adverse effects to EPA, and we are not aware of reports of adverse effects from the use of pesticides due to PFAS being present in the products in the ppb or ppt level. EPA monitors this information to ensure that pesticides are safe for use.

Levels of PFAS this low in pesticides are not toxicologically significant. To illustrate how miniscule this threshold is, 1 ppb is equivilant to 1 drop added to a large tanker truck and 1 ppt is equivilant to 10 drops added to the Rose Bowl stadium. Before banning pesticides that contain microscopic amounts of PFAS, the state of Maryland should demonstrate that the pesticides would present unreasonable adverse effects to the environment or impact the reasonable certainty of no harm standards for human health standards. EPA has approved fluorinated pesticide products and has not indicated it plans to take any action to withdraw approvals of these products. Maryland should not take action at this time or, at the very least, defer until EPA completes the evaluations necessary to determine whether restricting PFAS in pesticides is necessary.

SB 158 will disadvantage Maryland residents and growers because they will likely lose access to critical pest protection products. Pesticides provide critical protection against harmful, invasive species that can be detrimental to human health and our environment. Consumers rely on household pesticides to control pests and protect their families and their personal property. Insects, rodents, and weeds can threaten the health and well-being of our communities. Pesticides protect us from diseases carried by insects such as West Nile virus and Lyme disease, illnesses caused by contact with rodent and cockroach droppings, urine, or dander, or caused by poison ivy or oak and ragweed.

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[2] See Summary of EPA Method 1633: https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas. See also EPA Methods for determining PFAS is drinking water by liquid chromatography/tandem mass spectrometry: https://www.epa.gov/pfas/epa-pfas-drinking-water-laboratory-methods.

[3] See https://www.epa.gov/pesticides/updates-epa-efforts-address-pfas-pesticide-packaging.

[4] See https://www.epa.gov/system/files/documents/2021-09/epa-pfas-mda-report_0.pdf. LC-MS/MS analyses led to a false positive that likely resulted from matrix interference.

SB 158 may jeopardize Maryland residents' access to pesticides currently registered for sale in the state. The new stringent testing requirements may result in a de facto ban on these important pesticide products–even if the products do not contain any PFAS. Companies will be forced to make difficult business decisions, which may result in diverting their products to other states due to the massive costs and burdens associated with creating and conducting tests as required by SB 158. All this could be avoided by relying on the rigorous testing already done by EPA. This would ensure that Maryland residents have access to pesticides for their own critical uses.

Maryland residents and growers will have no protections from pests, invasive species, and non-native pest species. SB 158 will seriously disadvantage Maryland residents and the state itself from lost access to critical pesticides used to protect people and animals from mosquito-borne diseases through the activities of Maryland's public health officials as well as use of topical mosquito repellent sprays and lotions. Because they are public health tools, mosquito control pesticides are supported by additional scientific study requirements as part of the federal registration process. It would be impossible to manage mosquito populations in the state without pesticides.

Essential products for protecting against termites, bedbugs, cockroaches, mice, and rats at home, in schools, in restaurants, in commercial buildings, and in public places would not be registered. Natural resource, utility, and transportation managers would no longer have the pesticide tools necessary for keeping rights of way clear, creating fire breaks in forests, and managing invasive insect and aquatic species that impact Maryland's environment and economy. The state's agricultural producers would not have access to products available to competitors in neighboring states or have the ability to manage unique pest pressures in Maryland crops. Access to veterinary health products would also be impacted, putting family pets, companion animals, livestock, and poultry at risk from disease and nuisance pests.

We respectfully oppose this legislation as it is not necessary due to existing federal testing requirements, as the test method cannot adequately test for the presence of PFAS, as the extraordinarily low levels required does not provide additional public health protections, as it will disadvantage Maryland residents and growers with no protections from pests, invasive species, and non-native pest species. Thank you for the opportunity to provide our perspective on SB 158. We urge you to vote no on SB 158.

Sincerely,

John G. Campbell
State Affairs Director

23 MGPA, SB158 PFAS.pdf
Uploaded by: Lindsay Thompson
Position: UNF

Maryland Grain Producers Association
210 Fallen Horse Circle, Suite 100, Queenstown, MD 21658
Lindsay.mdag@gmail.com (p) 443-262-8491
www.marylandgrain.com

Date: February 2, 2023

Senate Bill 158 - Pesticide Registration - PFAS Testing - Requirements

Committee: Education, Energy and Environment

MGPA Position: OPPOSED

The Maryland Grain Producers Association (MGPA) serves as the voice of grain farmers growing corn, wheat, barley and sorghum across the state. MGPA opposes Senate Bill 158 which would require testing for PFAS with results below certain thresholds and an affidavit attesting to the legitimacy of the PFAS test results for product registration in Maryland.

Pesticide regulation is a function of the U.S. Environmental Protection Agency (EPA) where a pesticide must undergo full disclosure of ingredients as well as a human health and environmental risk assessment prior to being registered. EPA has release a workplan in their Strategic Roadmap to addressing PFAS contamination by 2024. EPA has already taken several actions on PFAS in pesticides as it relates to fluorinated containers and inert ingredients. We believe addressing potential PFAS in pesticides is a function of EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and will be done when the science is advanced, and testing is available.

This bill would essentially ban pesticides in Maryland because the provisions of the bill for registration cannot be met by the manufacturers. SB 158 requires testing of all pesticides for PFAS. There are no validated methods for detecting PFAS in pesticides. Using methods not validated for the substance being tested can result in false positives or negatives, as seen in the testing of mosquito control pesticides by Maryland environmental advocacy organizations in 2021 which were later deemed inaccurate by EPA.

We fear this bill would lead to no manufacturers being able to meet the requirements for registration or willing to take the risk of registering pesticides in Maryland due to the lack of validated testing methods.

Farmers are stewards of our land and the original environmentalists. We understand and appreciate the need to avoid contributing unnecessary PFAS to the environment. However, this bill would put Maryland farmers at an unfair disadvantage. Without pesticides, many Maryland farmers would be unable to grow crops efficiently or implement certain conservation practices such as cover crops or no-till.

MGPA respectfully requests your unfavorable report on SB 158.

SB158 2023 PFAS Testimony.pdf
Uploaded by: Mark Schlossberg
Position: UNF

M.A.G.I.
Maryland Association of Green Industries, Inc.

February 2, 2023

Mr. Chairman and Members of the Education, Energy, and the Environment Committee.

My name is Mark Schlossberg and I am president of The Maryland Association of Green Industries, Inc. (MAGI). **We oppose SB158.** Our group consists of Green Industry companies and organizations including lawn care companies, the Eastern Shore and Mid-Atlantic Associations of Golf Course Superintendents, the Maryland State Golf Association, the Maryland State Pest Control Association, and some Industry suppliers.

The immediate effect of this bill is that many of our members perform mosquito control services for their clients or on their properties and they would potentially lose many effective control products that have been allowed to be used by EPA based on their protocols. Mosquito control IS a public health issue. Many of the products we use serve a public health purpose and would most likely not be able to be used in Maryland over the next few years should this legislation pass.

We believe all pesticides registration and review should go through the proper regulatory bodies created specifically for this purpose. The EPA has created a Strategic Roadmap to address PFAS chemicals and how they affect our environment. EPA was created to regulate the pesticide industry and should be the ultimate decision maker on the use and regulation of all pesticides in the United States. They have already removed several PFAS from the presently approved list.

The legislation created could not be enforced because there is no EPA validated testing method for PFAS. As we understand it, the testing labs results are valid for testing drinking water and may give false positive results for pesticide testing. This bill is just a way for the anti-pesticide groups to start the process to essentially ban pesticides in the state of Maryland because the compliance requirements for registration are unattainable. We need to allow the scientists to do their jobs and regulate the chemicals as driven by the science. We kindly request an **UNFAVORABLE REPORT** FOR SB158.

1406 Shoemaker Road, Baltimore, MD 21209 * 410-825-8873

RISE-CLA Testimony Maryland SB158.pdf
Uploaded by: Megan Provost
Position: UNF

February 2, 2023

Testimony of Megan J. Provost, President, RISE (Responsible Industry for a Sound Environment) on behalf of RISE and CropLife America

RE: Maryland Senate Bill 158, Pesticide Registration – PFAS Testing – Requirements

Chair Feldman, Vice Chair Kagan, and Distinguished Members of the Education, Energy, and the Environment Committee,

Thank you for the opportunity to provide testimony about SB 158, which would require new and additional testing for pesticide products regulated by the state of Maryland and by the United States Environmental Protection Agency (EPA). We respectfully oppose this legislation and request an unfavorable vote.

SB 158 is not necessary due to existing rigorous federal testing requirements for pesticides. SB 158's requirement for pesticide products to "pass a PFAS test" is not necessary to protect the public and it is unclear what purpose this "PFAS testing requirement" seeks to achieve. All pesticides, including those formulated with fluorinated chemistry, must already be registered by U.S. EPA prior to applying for and receiving state registration in Maryland. Before pesticides even enter commerce in Maryland, they must already be deemed safe by EPA. To approve a new pesticide product, EPA must determine based on data that the pesticide will not, when used in accordance with the label, and with widespread and commonly recognized practice, cause unreasonable adverse effects on the environment[1] and provides reasonable certainty of no harm to human health. EPA subjects all new pesticide products to rigorous human health and environmental review and testing requirements to satisfy these standards for registration. These testing requirements include, depending on the type of pesticide, the following:

- Product chemistry
- Physical and chemical properties
- Acute toxicity
- Efficacy testing (for public health uses)
- Ecological effects
- Environmental fate
- Applicator exposure
- Residue chemistry (for food use pesticides)

These tests take months and years to complete and represent an investment of millions of dollars by pesticide companies in the science that supports all products available to Maryland residents, professional applicators, and growers. EPA expends significant resources to review and approve the testing data during a rigorous process. It can take more than 11 years before a new product is registered for sale due to the rigorous registration process. Further, EPA, must periodically review each registered pesticide active ingredient to ensure it continues to meet this robust safety

[1] 7 U.S.C. §136a(c)(5).

standard. Pesticides are unique, with more scientific data available about them than for any other products available in commerce today.

The test method suggested in the bill cannot adequately test for the presence of PFAS in pesticide products. Compliance with SB 158 would be impossible for pesticide registrants and distributors because they cannot adequately test for the presence of all PFAS in pesticides (particularly at the parts per trillion or parts per billion level). The test methods referenced in the legislation are EPA's PFAS test methods for wastewater, surface water, groundwater, soil, biosolids, sediment, landfill leachate and fish tissue—not pesticides.[2] EPA has only one internally validated method for the detection of PFAS compounds in oily matrices, such as pesticides. This method can only detect 28 PFAS.[3] It is important to note that when this validated test method was used, PFAS that were previously detected with other methods, were not found in the samples.[4] Thus ensuring an appropriate method is used is critical, otherwise results obtained from the suggested method will be inconsistent and inaccurate. We also note that the presence of fluorine is not necessarily indicative of the presence of PFAS, and therefore would be an inappropriate test standard.

Even if a valid test method existed for the full diversity of pesticide products, the laboratories in the United States capable of performing PFAS testing would be overwhelmed by test requests from hundreds of pesticide registrants wanting to ensure they comply with Maryland's requirements. Commercial labs lack the capacity to handle the volume of pesticides that would need to be tested in order to be registered and sold in the state. Maryland should not impose an infeasible and highly burdensome requirement on pesticide companies that is not necessary.

The extraordinarily low levels required for a pesticide to "pass a PFAS test" does not provide additional public health protections. The state of Maryland has not demonstrated that the presence of PFAS at extremely low levels in a pesticide (100 ppt or 10 ppb) presents any unreasonable adverse effects on human health or the environment. The state has not presented any exposure data showing whether people are even exposed to PFAS in using registered pesticides in accordance with their directions for use. There is no evidence that this is a growing or widespread public health concern for pesticide users. Pesticide registrants are required to report adverse effects to EPA, and we are not aware of reports of adverse effects from the use of pesticides due to PFAS being present in the products in the ppb or ppt level. EPA monitors this information to ensure that pesticides are safe for use.

Levels of PFAS this low in pesticides are not toxicologically significant. To illustrate how miniscule this threshold is, 1 ppb is equivilant to 1 drop added to a large tanker truck and 1 ppt is equivilant to 10 drops added to the Rose Bowl stadium. Before banning pesticides that contain microscopic amounts of PFAS, the state of Maryland should demonstrate that the pesticides would present unreasonable adverse effects to the environment or impact the reasonable certainty of no harm standards for human health. EPA has approved fluorinated pesticide products and has

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[2] See Summary of EPA Method 1633: https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas. See also EPA Methods for determining PFAS in drinking water by liquid chromatography/tandem mass spectrometry: https://www.epa.gov/pfas/epa-pfas-drinking-water-laboratory-methods.

[3] See https://www.epa.gov/pesticides/updates-epa-efforts-address-pfas-pesticide-packaging.

[4] See https://www.epa.gov/system/files/documents/2021-09/epa-pfas-mda-report_0.pdf. LC-MS/MS analyses led to a false positive that likely resulted from matrix interference.

not indicated it plans to take any action to withdraw approvals of these products. Maryland should not take action at this time or, at the very least, defer until EPA completes the evaluations necessary to determine whether restricting PFAS in pesticides is necessary.

SB 158 will disadvantage Maryland residents and growers because they will likely lose access to critical pest protection products. Pesticides provide critical protection against harmful, invasive species that can be detrimental to human health and our environment. Consumers rely on household pesticides to control pests and protect their families and their personal property. Insects, rodents, and weeds can threaten the health and well-being of our communities. Pesticides protect us from diseases carried by insects such as West Nile virus and Lyme disease, illnesses caused by contact with rodent and cockroach droppings, urine, or dander, or caused by poison ivy or oak and ragweed.

SB 158 may jeopardize Maryland residents' access to pesticides currently registered for sale in the state. The new stringent testing requirements may result in a de facto ban on these important pesticide products–even if the products do not contain any PFAS. Companies will be forced to make difficult business decisions, which may result in diverting their products to other states due to the massive costs and burdens associated with creating and conducting tests as required by SB 158. All this could be avoided by relying on the rigorous testing already done by EPA. This would ensure that Maryland residents have access to pesticides for their own critical uses.

Maryland residents and growers will have no protections from pests, invasive species, and non-native pest species. SB 158 will seriously disadvantage Maryland residents and the state itself from lost access to critical pesticides used to protect people and animals from mosquito-borne diseases through the activities of Maryland's public health officials as well as use of topical mosquito repellent sprays and lotions. Because they are public health tools, mosquito control pesticides are supported by additional scientific study requirements as part of the federal registration process. It would be impossible to manage mosquito populations in the state without pesticides.

Essential products for protecting against termites, bedbugs, cockroaches, mice, and rats at home, in schools, in restaurants, in commercial buildings, and in public places would not be registered. Natural resource, utility, and transportation managers would no longer have the pesticide tools necessary for keeping rights of way clear, creating fire breaks in forests, and managing invasive insect and aquatic species that impact Maryland's environment and economy. The state's agricultural producers would not have access to products available to competitors in neighboring states or have the ability to manage unique pest pressures in Maryland crops. Access to veterinary health products would also be impacted, putting family pets, companion animals, livestock, and poultry at risk from disease and nuisance pests.

We respectfully oppose this legislation as it is not necessary due to existing federal testing requirements, as the test method cannot adequately test for the presence of PFAS, as the extraordinarily low levels required does not provide additional public health protections, as it will disadvantage Maryland residents and growers with no protections from pests, invasive species, and non-native pest species. Thank you for the opportunity to provide our perspective on SB 158. We urge you to vote no on SB 158.

RISE (Responsible Industry for a Sound Environment) is the national trade association representing manufacturers, formulators, distributors and other industry leaders engaged with specialty pesticides and fertilizers used by professionals and consumers. Learn more at www.pestfacts.org.

CropLife America (CLA) represents the manufacturers, formulators and distributors of crop protection products in the United States. CLA member companies produce, sell and distribute virtually all the crop protection products used by American farmers. Learn more at www.croplifeamerica.org.

SB158_Household and Commercial Products Assoc_unf.
Uploaded by: Michael Gruber
Position: UNF

February 2, 2023

Testimony: Michael Gruber, Senior Vice President Government Relations & Public Policy, Household & Commercial Products Association

RE: Maryland Senate Bill 158, Pesticide Registration – PFAS Testing – Requirements

Chair Feldman, Vice Chair Kagan, and Distinguished Members of the Education, Energy, and the Environment Committee,

On behalf of The Household and Commercial Products Association (HCPA)[1], we submit the following testimony regarding SB 158 (HB 319), which seeks to establish a requirement for Perfluoroalkyl and polyfluoroalkyl (PFAS) testing as a condition for pesticide registration in Maryland. **We respectfully oppose this legislation and request an unfavorable report**.

HCPA members manufacture a variety of products including household cleaning products, air care products, aerosol products, floor polishes and waxes, automotive maintenance and appearance products, and consumer pesticides which includes disinfectants and sanitizers. These products are essential tools for a wide variety of functions necessary to maintain clean and healthy homes and institutional facilities. Many products represented by HCPA, including disinfectants, sanitizers, pet care and home pest products, are registered under state and federal pesticide regulations. Thus, our industry has a direct pecuniary interest in discussion and development of requirements for registration of products in the state. We would appreciate consideration of the following key issues warranting an unfavorable report on SB 158.

Redundant Regulations:
It is important to note that the federal and state regulation of pesticide distribution, sale, and use, as well as stringent safety standards and enforcement are already established under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Maryland Department of Agriculture's Pesticide Regulation section. These statutes are designed to evolve as science advances, to support product innovation, and to provide for robust stakeholder and public input into pesticide regulations. The laws not only mandate comprehensive data package and rigorous risk assessment, but they also require review of the most current scientific data on health and environmental impacts before registration for all pesticide products. Importantly, registered pesticide products are also required to undergo periodic registration review to ensure that the health and environmental impacts of the use of the product continue to rely upon the most current science. We believe the additional information collection proposed by SB 158 adds zero value to current regulatory structures.

PFAS Information:
Within the requirements for registration, applicants are required to disclose the presence of *any* intentionally added PFAS, either on the label for an active ingredient or on the Confidential

[1] The Household & Commercial Products Association (HCPA) is the premier trade association representing companies that manufacture and sell $180 billion annually of trusted and familiar products used for cleaning, protecting, maintaining, and disinfecting homes and commercial environments. HCPA member companies employ 200,000 people in the U.S. whose work helps consumers and workers to create cleaner, healthier and more productive lives.

Statement of Formulation (CSF) as a condition of registration. Note Maryland already receives the CSF from registrants as a condition of registration. Correspondingly, if any level of PFAS (or any other contaminant) is known to be present, the registrant is required to submit an Incident Report under FIFRA 6(a)(2), or the product is "misbranded" and subject to enforcement and/or cancellation. The need for an affidavit attesting to the presence of PFAS is unclear given that Maryland already receives information from producers if a product contains PFAS.

Capacity and Costs:
In its current form, the bill would require PFAS analysis of all pesticides in a laboratory either "Identified by the Department of the Environment as capable of testing for PFAS" or "Used by the U.S. Environmental Protection Agency for PFAS Testing." Currently, there are no laboratories certified by the EPA for determining PFAS in pesticide formulations. This would impose a cost upon the pesticide manufacturers to outsource this analysis to a private laboratory, if one eventually becomes certified, and would disproportionally affect small business owners operating in the state.

The Maryland Department of Health is the only lab in the state which has the technical capability to meet the criterion within the bill. Given the sheer number of pesticides registered in the state of Maryland — over 12,000 — the lab would quickly be overwhelmed with testing.

PFAS Nomenclature:
PFAS substances are a large, diverse group of over 1,000 chemical compounds. PFAS properties vary widely as do uses and applications. For this reason, it is important to distinguish between PFAS categories, use, function, and chemical properties as opposed to treating the substance as a single regulatory group. Chemical and structural differences among different types of PFAS may create physical chemical properties that underline legitimate concerns over potential health and environmental risks associated with some substances—this most certainly does not apply to all PFAS chemicals and applications. For this reason, PFAS should not be considered as a single group or class, especially given it is possible to scientifically define distinct categories of PFAS based on shared properties. It is not scientifically accurate nor appropriate to group all of these substances together, which is essentially how SB 158 reflects PFAS.

Conclusion:
The safety of human health and the environment is a top priority for HCPA and our member companies. HCPA supports sensible regulation to control the release of PFAS into the environment; however, we respectfully oppose the broad and technically inaccurate approach proposed SB 158. This legislation does not incorporate an evidence-based methodology to regulation and instead would impose unachievable, and unnecessary, requirements on manufacturers and distributors of products.

HCPA urges an unfavorable report on SB 158.

RJR-(MTC.MASFMA) - SB158.HB319 (Letter of Oppositi

Uploaded by: Robert Navolis

Position: UNF

Senate Education, Energy & the Environment (EEE) Committee
Senate Bill 158 / House Bill 319:
Pesticide Registration - PFAS Testing – Requirements

Position: OPPOSE

February 2nd, 2023

Dear Chairman Feldman and the Members of the Senate EEE Committee:

On behalf of the Mid-Atlantic Field Manager Association (MASFMA) (*formerly known as MASTMA*) and the Maryland Turfgrass Council (MTC), we write this letter in opposition to Senate Bill 158/HB 319, entitled: Pesticide Registration – PFAS Testing – Requirements.

As written, SB158/HB319, prohibits the Secretary of Agriculture from registering a pesticide for use against mosquitoes in the State unless the distributor of the pesticide submits to the Department test results indicating the pesticide has passed the PFAS test and an affidavit attesting to the legitimacy of the PFAS test results beginning next January. By 2026, the bill would expand its prohibitions on pesticides for any/all use in the State of Maryland, unless PFAS test results and a certain affidavit are submitted by the distributor.

The Mid-Atlantic Sports Field Manager Association (MASFMA) is a non-profit organization that is composed of sports turf field managers and workers from Maryland, Delaware, Washington D.C., and Northern Virginia. As MASFMA members, we partner together to promote education, teamwork, networking, and best practices among our peers and within the Sports Turf Management Industry.

We have partnered with Maryland Turfgrass Council (MTC) this year to bring a more unified front from all aspects of our industry. MTC, a non-profit organization, represents all areas of the turf industry including golf, sports-turf, sod producers, landscape, lawncare and commercial vendors and suppliers.

At the present time, **there is no single test method that is developed and proven to work in identifying PFAS in pesticide formulations**. As a result, should this bill become law, it would require multiple testing methods to be developed and then somehow validated.

Pesticides with chlorinated solvents need to be in fluorinated packages because the solvents can weaken the packaging. But the ultimate issue is, "*How do we effectively test to see if the pesticides contain PFAS if we have no actual means for analysis?*"

This bill could ultimately end up impacting IPM programs at schools, hospitals (with disinfectants) etc. and could actually end up affecting food issues related to packaging. Overall, this legislation would affect every aspect of life in the State of Maryland.

Simply put, there are no validated tests and therefore it is virtually impossible for the registrant to provide a "validated" affidavit.

This bill is far reaching in what it will do. Moreover, this legislation fails to provide a means of assisting companies that use PFAs. The economic impact on our industry could be substantial if there is no plan in place or products in place that could replace them in a timely manner.

In our opinion, we believe until there is an accurate way to test for PFAS, the Maryland General Assembly should, indefinitely, abstain from passing any such legislation. However, should the legislature wish to further examine this issue, we would like to extend our expertise in helping to find a reasonable and equitable solution.

It is for these reasons; we respectfully request this committee to provide an **UNFAVORABLE** report on SB158/ HB 319.

Should you have any questions or concerns, please don't hesitate to contact our organizations at any time.

Sincerely,

Robert Navolis

Rob Navolis
Mid-Atlantic Sports Field Managers Assoc. (MASFMA)

Patrick Coakley

Patrick Coakley, Vice *President*
Maryland Turfgrass Council (MTC)

CPDA Letter - Senate Bill 0158 0202.23.pdf
Uploaded by: Scott Rawlins
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Council of
Producers and Distributors
of Agrotechnology

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Written Testimony of the Council of Producers & Distributors of Agrotechnology on Senate Bill 0158 Pesticide Registration – PFAS Testing – Requirements Before the Energy, Education and the Environment Committee February 2, 2023

The Council of Producers & Distributors of Agrotechnology (CPDA), based in Washington DC, is the premier advocate for agricultural adjuvant and inert ingredient suppliers. CPDA members produce and sell tank-mix adjuvants, inert ingredients, pesticides and other agrotechnology products across the United States and range in size from small businesses to large, publicly traded companies. Approximately 80% of the adjuvant and inert ingredients used in agricultural production products throughout the U.S. are provided by CPDA members.

We appreciate the opportunity to comment on Senate Bill 0158: "Pesticide Registration – PFAS Testing – Requirements."

SB 158 raises a number of critical questions that the public needs to have answers to before this proceeds to any legislative vote.

Public Health Pesticides: The new law would prohibit the Maryland Secretary of Agriculture from registering a pesticide for use in the State unless the distributor of the pesticide submits data that proves that the product has "passed the Per- and Polyfluoroalkyl Substances (PFAS) test," which means that the sum of the concentrations of analytes in a pesticide total less than 100 parts per trillion. Testing would be required for pesticides used against mosquitoes beginning on January 1, 2024.

Has analysis been done to determine:

- Which vector control products would be affected?
- How this new requirement affects the incidence of vector spread diseases like encephalitis as well as other viral, bacterial, and parasitic infections?
- The severity of potential outbreaks and their effect on various subpopulations and disadvantaged communities?

Agricultural Pesticides and Other Products: Testing for all other pesticides, including agricultural pesticides, homeowner products like termiticides, and surface disinfectants would be required beginning on January 1, 2026. Has analysis been done to determine:

- Which agricultural products would be affected and how this would impact Maryland's farmers? How many farms will be affected? Are some crops affected more than others? If so, where are the greatest impacts?
- Will biopesticides used in organic farming be affected? If so, what will be the impact?
- Can consumers expect that prices for Maryland-grown products will rise? If so, how much or will consumers substitute Maryland products for food grown in other states and countries?
- Surface disinfectants used by hospitals and in homes are registered and regulated by the U.S. Environmental Protection Agency as pesticides. Which disinfectants will be affected by the new law? How will this impact public health?

Until there are answers to these questions, CPDA urges Senators to vote "no" on SB 0158.

MDA SB 158 LOI.docx (1).pdf
Uploaded by: Steven Connelly
Position: INFO

Maryland
Department of Agriculture
Office of the Secretary

Wes Moore, Governor
Aruna Miller, Lt. Governor
Kevin Atticks, Acting Secretary
Steven A. Connelly, Deputy Secretary

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Agriculture | Maryland's Leading Industry

Maryland Department of Agriculture

Legislative Comment

Date: February 2, 2023

BILL NUMBER: SENATE BILL 158

SHORT TITLE: PESTICIDES REGISTRATION- PFAS TESTING- REQUIREMENTS

MDA POSITION: INFORMATION

SB 158 would require the Secretary of the Maryland Department of Agriculture (MDA) to prohibit the registration of mosquito products starting in 2024 unless the distributor of the pesticide submits PFAS test results and an affidavit, with the remainder of the pesticide products registration prohibition beginning in 2026.

This legislation would have a tremendous impact on the pesticide industry, requiring the analysis of approximately 1,056 mosquito control products (average of FY 2010 – FY 2022) that are registered in the state of Maryland in 2024. Additionally, this legislation would require all pesticides to be tested and reported in 2026. The Pesticide Regulation Section (PRS) currently has 12,526 pesticides registered (average of FY 2010 – FY 2022). The number of packets of information would be overwhelming ultimately causing significant registration and renewal delays.

This legislation would also affect the Pesticide Data Survey, a survey of farmers and other professionals done every two years. If registrations drop, as seen in the agency statement of impact, this will lower revenues which in turn lowers the funding for the survey. This would cause the survey to go to a three year cycle from a two year cycle. Associated costs are also outlined in the impact document.

In addition, the legislation would affect several other programs in the Department. PRS, which licenses applicators and businesses, would be tasked with performing additional enforcement duties to ensure no one is selling or using products that contain PFAS or have been pulled from registration. Invasive species control would be affected as well. There are several invasive species that Plant Protection and Weed Management, and Forest Pest Management work to combat. Examples of these invasives include spotted lantern fly, palmer amaranth, emerald ash

borer, spongy moths, fire ants (come from imported plants from the south) and hemlock woolly adelgid. Also affected would be the nursery industry and Mosquito Control, who would face potential elimination of tools in the toolkit to combat vectors of human disease organisms.

The legislation also mentions that the analysis for the contaminant be performed in a laboratory "approved" by the U.S. Environmental Protection Agency (EPA) or MDE. Currently, there are no laboratories certified by the EPA for determining PFAS in pesticide formulations. No list could be found on MDE's website. This would impose a cost upon the pesticide manufacturers to outsource this analysis to a private laboratory if one eventually becomes certified. Methods would need to be developed for a large variety of pesticide formulations as an all-in-one method will not work for all pesticides that are registered.

EPA Method 1633 is a draft method for aqueous, solid (soil, biosolids, sediment) and tissue samples. It is currently undergoing revision to include the final quality control acceptance criteria for all aqueous matrices (surface water, ground water, and wastewater) with anticipated completion by the early 2023. The final version will include all matrices and should be completed later this year. This method would have to be radically modified to be able to analyze pesticide formulations. The instrument used in the development of the method is a UPLC-MS/MS (ultra-pressure liquid chromatography mass spectrometry-mass spectrometry). This is a low-resolution instrument and cannot differentiate between molecules that have similar weights. The needed instrument is one that can distinguish between weights to over 5 decimal places.

This legislation allows the use of a total organic fluorine result in lieu of a more advanced and specific instrumental method. There is currently no validated total organic fluorine method for these types of products. If a product contains a fluorinated pesticide, it will fail the limit test of 100 ppt.

If you have additional questions, please contact Steve Connelly, MDA Deputy Secretary at steve.connelly@maryland.gov or 410-841-5881.