John Nygren

WISCONSIN STATE REPRESENTATIVE ★ 89TH ASSEMBLY DISTRICT

Co-Chair, Joint Committee on Finance

Rep. John Nygren Testimony in Support of SB 310
Senate Committee on Natural Resources and Energy
September 3, 2019

Chairman Cowles and Members of the Senate Committee on Natural Resources and Energy,

Thank you for the opportunity to testify in support of Senate Bill 310.

PFAS contamination of ground and drinking water is an emerging and serious issue in Northeastern Wisconsin in my hometown of Marinette, Peshtigo, and in an increasing number of other locations around the state.

PFAS are found in an extensive array of products we have all used, including non-stick cook wear, stain-resistant carpet and fabric, water-resistant apparel, food packaging, paints, waxes, and more.

The reason I am before you today is because PFAS are also found in certain "Class B" aqueous film forming foams (AFFF) used in fighting flammable liquid fires. When mixed with water, these foams have low surface tension and spread easily. AFFF foam was used in Superior last year in the wake of the explosion at the Husky Energy oil refinery. Branches of the military use these foams to put out fuel fires and as a result there is PFAS contamination near the state's major airports, especially in Madison. A major business in my district makes this foam and used to test it on an outdoor training field. Water containing PFAS flowed off their property over many years of foam testing and contaminated groundwater and ditches in Marinette and Peshtigo.

Class B foams containing PFAS are products developed and tested with the best intentions. There is little doubt their use in emergencies has saved lives and property. However, the testing of these foams without proper precautions in place has caused serious hardship for residents of my district. It is one of the largest sources of PFAS contamination in our state and this bill seeks to correct this problem.

SB 310 would place limits on the usage of AFFF foam containing added PFAS with the goal of reducing the negative impact these chemicals have on residents of our state and the environment moving forward. Under the bill, the use of Class B foams containing intentionally-added PFAS would be prohibited, with two exceptions. These foams could still be used in emergency firefighting or fire prevention operations. The foams could also be tested, but only if proper containment, treatment, and disposal measures, as approved by the Department of Natural Resources, are in place.

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We believe this bill creates a better balance between reducing the dangers to human health and negative environmental footprint these chemicals pose, while also preserving the ability of first responders to use an extremely effective tool to fight flammable liquid fires.

Members of this committee who also sit on the Speaker's Task Force on Water Quality will remember this bill being discussed at the hearing in Marinette last week. Thank you for traveling to my district to learn about the water issues facing Northeastern Wisconsin. The DNR included this bill in their recommendations for curbing the PFAS contamination issue and it also received support from members of the public.

Based on constituent input, we plan to amend this legislation to clarify that "proper containment, treatment, and disposal measures" may not include flushing PFAS foam down the drain or sanitary sewer.

Thanks again for the opportunity to testify in support of SB 310, and we would appreciate your support.

STANDING COMMITTEES:
Natural Resources & Energy, Chair
Transportation, Veterans, & Military Affairs

ROBERT L. COWLES
Wisconsin State Senator
2nd Senate District

JOINT COMMITTEES:
Audit Committee, Co-Chair

Testimony on 2019 Senate Bill 310

Senator Robert Cowles

Senate Committee on Natural Resources and Energy – September 3, 2019

Thank you, committee members, for allowing me to testify on 2019 Senate Bill 310. This bill would place limits on the usage of a Class B firefighting foam, which is used to fight flammable liquid fires, that contains intentionally added per- and polyfluoroalkyl substances by banning the use of this foam for training and regulating its use in testing.

Per- and polyfluoroalkyl compounds, also known as PFAS, are a family of chemicals found in an array of products including non-stick cookwear, stain-resistant carpet, water-resistant apparel, food packaging, paints, waxes, and firefighting foam. PFAS contamination of groundwater used for drinking is an issue in an increasing number of locations around the state due to decades of unconfined production, use, and disposal of these chemicals. One of the substances that contains PFAS, Class B firefighting foam, has been used by first responders to fight flammable liquid fires for decades. The type of emergencies that require Class B firefighting foams are not a common occurrence for many first responders, but firefighters still must train with these foams to prepare for one of these emergencies if it were to occur on a highway or runway, at a factory, or elsewhere.

Class B firefighting foams that contains PFAS are lifesaving products and are developed and tested with good intentions. However, water contamination caused by the unconfined use of these foams that contain PFAS has created difficulties for some Wisconsin residents. Senate Bill 310 would place limits on the usage of a Class B firefighting foam that contains intentionally added PFAS by banning its use for training. Instead, firefighters would substitute Class B foam with PFAS for a training foam, which is already commercially available, that does not contain PFAS. This legislation would also require that Class B foam that contains intentionally added PFAS be tested with proper containment, treatment, and disposal measures as determined by the DNR.

Senate Bill 310 would not impact the manufacture, sale, or distribution of a Class B firefighting foam that contains PFAS, nor would it ban the use of Class B firefighting foam that contains PFAS for use in emergency firefighting or fire prevention operations. As such, this bill creates the necessary balance between reducing the dangers to human health and the negative environmental footprint these chemicals pose while also preserving the ability of first responders to use an extremely effective tool to fight flammable liquid fires.

Training foam without intentionally added PFAS can still prepare our first responders for the dangerous circumstances that can arise from flammable liquid fires, but Class B firefighting foam that contains PFAS is significantly more effective and must remain available for true emergencies.

Senate Bill 310 is part of an effort taking place in states throughout the county with backing from industry, public health, and environmental groups. Some states, including Georgia, Kentucky, and Virginia, have already passed legislation similar to this, and other states, including Colorado, Minnesota, and North Carolina, are considering similar legislation in their statehouses this session.

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STATE REPRESENTATIVE
MELISSA SARGENT

WISCONSIN STATE ASSEMBLY

48th DISTRICT

September 03, 2019

Thank you Chairman Cowles and members of the Committee on Natural Resources and Energy for allowing me to speak before you on Senate Bill 310.

Access to clean water is a fundamental human right that is crucial for the health and wellbeing of our communities. Right here in the 48th Assembly District, we have seen the closing of Well-15, a crucial source of drinking water for our community, among countless other incidents of elevated PFAS levels across Wisconsin. As public servants, we have an obligation to support policies that lift up all people in our state, which starts with ensuring the right to safe and clean drinking water.

When I listen to the voices of constituents in my district, one of the top concerns I hear is the issue of water contamination and ensuring and preserving clean water for generations to come. PFAS, although not the only dangerous containment threatening clean water here in Wisconsin, are a more recently discovered threat that prove to be detrimental to human health, as well as being environmentally destructive. We need to be doing everything we can to protect our communities' invaluable natural resources and health.

Senate Bill 310 works to address an important part of the larger PFAS contamination issue. This bill will work to ensure that firefighting foam, a key source of the dangerous PFAS substances, are used only in emergency situations and with proper containment efforts. While many areas who use these firefighting foams, such as here in Madison at Truax Field Air National Guard Base, have already taken important steps to limit the use of these hazardous foams and mitigate its impacts, this bill is essential in codifying these efforts across our state.

As elected officials, we must prioritize the well-being of all Wisconsinites and take meaningful steps to prevent and mitigate the dangerous impacts PFAS have on our state. I am proud co-author this bipartisan bill that works to do just that, and I appreciate the committee's consideration on this important issue.

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Senate Committee on Natural Resources and Energy

2019 Senate Bill 310

Regulating fire-fighting foam that contains certain contaminants and granting rule-making authority

September 3, 2019

Good morning, Chairperson Cowles and members of the Committee. My name is Darsi Foss and I am the Environmental Management Division Administrator with the Wisconsin DNR of Natural Resources. Thank you for the opportunity to testify for informational purposes on Senate Bill 310 (SB 310), which deals with regulating firefighting foam that contains certain contaminants and granting rulemaking authority.

SB 310 prohibits testing and training with firefighting foams that contain intentionally added perfluoroalkyl or polyfluoroalkyl substances (PFAS) on a flammable liquid fire unless used in emergency firefighting or fire prevention operations. The bill does allow the use of PFAS-containing Class B firefighting foam for testing purposes if the testing facility has implemented appropriate containment, treatment and disposal measures to prevent the discharge of the foam to the environment. The DNR would anticipate rulemaking under the authority of this bill to define and implement an approval process for testing facility plans to meet these requirements. Once that rulemaking process begins, it will likely take the DNR 30 months to have those requirements become effective to address the concerns in this bill.

PFAS are an emerging contaminant of concern that are not known to degrade in the environment and can impact human health and wildlife even at very low concentrations. There are over 3,000 PFAS with the most widely studied being perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). Evidence suggests that exposure to PFAS, not just PFOA and PFOS, can lead to adverse human health effects including thyroid disease, decreased fertility, complications in pregnancy, low birth weights, decreased immune response, increased cholesterol, and cancer.

This bill would prevent or try to minimize *new discharges* of PFAS-containing fire-fighting foams (FFF) from negatively impacting communities, businesses and citizens *in the future*. This is a good thing. However, for decades, this foam has been used with no regulation throughout the state. We know that the state has communities that have already been negatively impacted by the testing, training and emergency use of PFAS-containing FFF. Municipal wells have been impacted and wells have been shut down in the cities of Madison, La Crosse and Rhinelander due to FFF. Private wells have been contaminated in the town of Peshtigo. Biosolids in the cities of Peshtigo and Marinette have significant levels of PFAS from FFF that present costly disposal challenges. The Husky Refinery fire in Superior presented unique challenges during and after the fire to contain the PFAS-containing waste water and contaminated soil.

Recommendations to Strengthen the State's Authority to Minimize Future Discharges of PFAS-containing Fire-fighting Foams:

The DNR would like to offer the following suggestions to address the legislature's concerns about future discharges of FFF containing PFAS.

1. Recommend amending bill to regulate "PFAS-containing fire-fighting foam", not just Class B foam.

We make this recommendation based upon the DNR's recent experience with two fire events. One event occurred at a Madison Gas & Electric property involving equipment owned by the American Transmission Company and another event occurred in Beaver Dam; firefighting foams were utilized at both by local fire DNRs. Following the Madison fire event, the fire DNR informed the DNR that the firefighting foam used contained no PFAS – based on their understanding from the manufacturer. The foam used is classified as dual action "Class A and B." After review of the safety data sheet, DNR determined that the foam contained one, "short-chain" PFAS (i.e., six-carbon chain lengths or shorter) that subsequently entered the environment. Test results of the contaminated water recovered from the storm sewer contained more than a dozen PFAS compounds. In the recent incident in Beaver Dam, the DNR determined that the same "Class A and B" foam was used to put out a transformer fire involving a school. PFAS was detected in the soil contaminated by the emergency actions.

2. Require Manufacturers to Provide Clear Labeling of Fire Fighting Foams

Based on this recent experience and actions by other states, it would be prudent to require labeling of ***all*** firefighting foam content as to the type of PFAS compounds (not just PFOA or PFOS) and percentage of those PFAS substances. Since the Madison fire, the DNR is being asked by local fire DNR how they can best determine what is in the products they are using – and how to avoid PFAS FFF. Even Michigan, a leader in responding to the PFAS challenge, is struggling with this issue, as stated on their web site:

> "It may not be easy to tell if the foam you have contains PFAS. These chemicals are not required to be reported on any Safety Data Sheets, as they are not considered a hazardous substance. PFAS may not be listed under any active ingredients list, either. A good indicator that the foam contains PFAS is if it mentions "fluorinated surfactant." However, not all fluorinated surfactants are made of PFAS. The best thing to do is to note the brand and manufacturer of the foam and contact the manufacturer to see if PFAS is used in its production."

The DNR recommends that the legislature require clear labeling of all PFAS-containing FFF containers, specifying the types and percentages of PFAS substances. Further, DNR recommends that all Safety Data Sheets clearly identify all PFAS substances individually and by percentage and be provided with all products – not just upon request by the consumer or regulatory agency. (See State of Washington bill.)

3. Require Those Using PFAS-containing FFF During an Emergency to Take Preventative and Mitigation Actions.

The DNR recognizes that the primary mission of fire DNRs is the protection of human safety and preservation of property. The DNR also believes that, during emergency events in which PFAS containing firefighting foams are used, early steps taken to contain the discharge of foam would reduce the environmental impact and reduce the cost to clean up a site after an emergency event. The DNR has additional, related technical comments on this topic in Appendix A. Halting or preventing further migration of the FFF will save businesses and tax payers money, and protect public health and the environment from unnecessary exposure.

4. Include a PFAS-containing FFF Clean Sweep Program

The legislature may also wish to consider supporting a clean sweep and disposal program for existing PFAS-containing fire fighting foams from fire DNRs across the state to remove the potential for these materials entering the environment. AFFF has a shelf life of 20 years, and many fire DNRs may have this material in its inventory, especially historic FFF containing PFOA and PFOS. Many states have already taken this step.

5. Recommend that this Bill Apply to Testing and Training Facilities

DNR recommends that all the requirements in this bill apply to testing facilities, training facilities, or where locations where both of those activities occur. Presently, the DNR interprets the bill to require the treatment, containment and disposal rules that would only apply to testing facilities, and not training facilities. One of the largest PFAS contamination sites in the state is a result of an FFF training facility.

6. Rules will take Several Years to Provide Safeguards.

The bill directs the DNR to enact rules to implement the bill, including development of appropriate containment, treatment and disposal measures for testing facilities (not training). Those safeguards that would prevent discharges or environmental pollution will take years to become effective, and only apply to FFF; but not to other industries that use PFAS in their production.

Recommendations to Strengthen State's Authority to Address Discharges of PFAS-containing Fire-fighting Foams and PFAS Contamination that Have Already Harmed Wisconsin Communities:

The DNR has the following comments on the bill:

1. PFAS Is More than a Fire-fighting Foam Issue. While this bill takes a needed step forward to prevent future discharges of PFAS from one known source – fire-fighting foam – it does not address the concerns over all the other hundreds of possible sources of PFAS contamination that may occur in the future.

2. State Needs Clear Authority to Address Existing PFAS Contamination. We know that the state is at the beginning of a long process to identify PFAS-impacted sites and communities. And from Michigan's and other states' experiences, we know that we will find more historic and ongoing PFAS contamination from many sources, not just FFF. While this bill draft would

require development of containment, treatment and disposal measures for FFF testing facilities, there is an equal or greater need for the legislature to:

a. Provide DNR clear authority to develop those same safeguards for other industries and businesses that use PFAS, not just FFF testing facilities.
b. Support clear standards to regulate municipal and industrial discharges of PFAS substances to the air, land and waters of this state.
c. Address the need to put in place standards immediately to provide certainty to impacted communities, businesses and citizens, such establishing an enforceable standard no for groundwater, while rulemaking is undertaken.
d. Provide clear regulatory standards to ensure the safe handling of contaminated bio-solids, soil, surface water, groundwater, and sediments that are handled as a result of an environmental cleanup, a redevelopment project or everyday business activity.
e. Ensure that companies that have contaminated groundwater, surface water, and other contaminated media have the financial wherewithal to pay for the cleanups.
f. Provide the comprehensive set of tools that the state needs to address the historic and future challenges that we are facing the state due to PFAS contamination.
g. Provide the state agencies the resources they need to respond to these national and statewide challenge.

There is a bill draft that does all of that – it is the CLEAR act –SB 302 and AB 321. The CLEAR act provides this state with the tools it needs to move forward to comprehensively address this issue, and in a manner that puts systems and standards in place in a timely manner – not years from now.
The DNR is offering to meet with any legislator interested in the tools the DNR needs to address the needs of our citizens, businesses, communities, and the impacted environment.

On behalf of the DNR of Natural Resources, I would like to thank you for your time today. I would be happy to answer any questions you may have.

Attachment: Appendix 1

Appendix 1: Technical Recommendations for Consideration:

- Section 1. 299.48 (2) Prohibition. Please clarify the term "intentionally added PFAS."
- Section 1. 299.48 (3) (a). Consider cross-referencing 292.11(9)(b), that currently specifies that any discharge of fire-fighting foam (FFF) containing a hazardous substance requires the notification to the DNR as a hazardous substance discharge, well as a response under 292.11. This is true for use of FFF to fight fires or for an accidental spill.
- Section 1. 299.48 (3) (b) – Would the definition of "testing purposes" also include training. This legislation should apply equally to testing, training or both types of facilities.
- Section 1. 299.48 (3) (b) – Consider replacing the term "releases" with the term "discharges" to be consistent with 292.01 (3). These words have two separate meanings in ch. 292, Stats.

FluoroCouncil
Global Industry Council
for FluoroTechnology

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FluoroCouncil Testimony on SB 310

Introduction

- FluoroCouncil[1] represents major manufacturers of products based on today's per- and polyfluoroalkyl substances or "PFAS." Today's PFAS provide unique performance benefits to enable industries and products which are critical to modern life.

Support of SB 310

- With regards to SB 310, we respectfully support this bill.

Aqueous film forming foams (AFFF) are the most effective foams currently available to fight high-hazard flammable liquid fires (Class B) in military, industrial, chemical, fuel depot/storage, aviation and other applications.

- AFFF have proven effectiveness in large scale tank fires, fuel-in-depth fires and other high hazard Class B fires. Their unique film-forming and fuel repellency properties provide rapid extinguishment, critical burnback resistance and protection against vapor release, which help to prevent re-ignition and protect fire fighters working as part of rescue and recovery operations.
- Fluorine-free foams can and do provide an alternative to fluorinated foams in some applications such as spill fires and smaller tank fires. However, they are not currently able to provide the same level of fire suppression capability, efficiency, flexibility, and scope of usage.
- Fire test results presented at international fire protection conferences in 2011, 2013, 2015 and 2016, including some performed by the Naval Research Labs (NRL), all show that fluorinated foams are significantly more effective at extinguishing flammable liquid fires than fluorine-free foams. In a recent trade publication (Jan'19), an NRL scientist said fluorinated foams "outperform fluorine-free foams by a factor or four to five" by containing the fire and suppressing vapors that can reignite.

Today's PFAS, including those used in current AFFF formulations, are supported by a robust body of data.

- While concerns have been raised regarding environmental contamination issues related to certain PFAS (namely PFOA, PFOS and PFHxS), these chemicals are neither used to manufacture nor used in the formulation of the current Fluorotelomer C6-based PFAS fluorosurfactants used in class B firefighting foams. The C6-based products have been available and used since the 1970's with full conversion to all C6 products by the end of 2015.
    - Today's PFAS are generally short-chains, and they have significantly improved hazard profiles compared to the legacy long-chain products. There have also been substantial advances in the processes by which today's PFAS are manufactured and supporting stewardship efforts, leading to minimized

[1] The FluoroCouncil represents the world's leading manufacturers of fluoropolymers, fluorotelomers, and other fluorinated surfactants and surface property modification agents. FluoroCouncil's member companies are AGC Inc., Daikin Industries, Ltd., Solvay Specialty Polymers, The Chemours Company LLC, Archroma Management LLC (associate), Dynax Corporation (associate), and Tyco Fire Products, LP (associate).

emissions. Today's PFAS are critical and continue to enable a myriad of applications vital to the U.S. (and global) economy.
    - The manufacture and commercial use of today's PFAS are subject to review by regulatory bodies around the world. They are well-studied and the evidence shows these chemistries meet relevant regulatory standards for the protection of human health and the environment.

AFFF helps to protect life and property in large scale high hazard class B fires and should be used responsibly.

- Legacy contamination from the use of firefighting foams is largely the result of past practices where foam was discharged to the environment during training as well as the testing and calibration of foam equipment. Current best practice calls for the containment and treatment of foam discharges and the use of non-fluorinated fluids and methods for testing, training and calibration. This bill would create statutory requirements for these best practices.
    - Industry voluntarily started working with EPA in the early 2000s to phase out long-chain PFAS substances, including virtually eliminating facility emissions and long-chain PFAS product content. Those long-chains are no longer produced in the U.S., Europe, or Japan. These efforts have led to substantial declines in the blood levels of PFOA and PFOS in the general U.S. population.
- As large scale high hazard Class B fires are actually rare, requiring best management practices for all foam users has the potential to significantly reduce discharges of PFAS to the environment from foam. Similar legislation has been passed in other states, banning the release of PFAS-based foams to the environment except in the case of emergencies. We believe that this a responsible and sound approach that protects society from catastrophic fires while at the same minimizing the environmental impact from foam use.
- This bill allows for the use of PFAS-based foams in high-hazard fire emergencies, ensuring important facilities in Wisconsin have adequate life and property safety and fire protection.

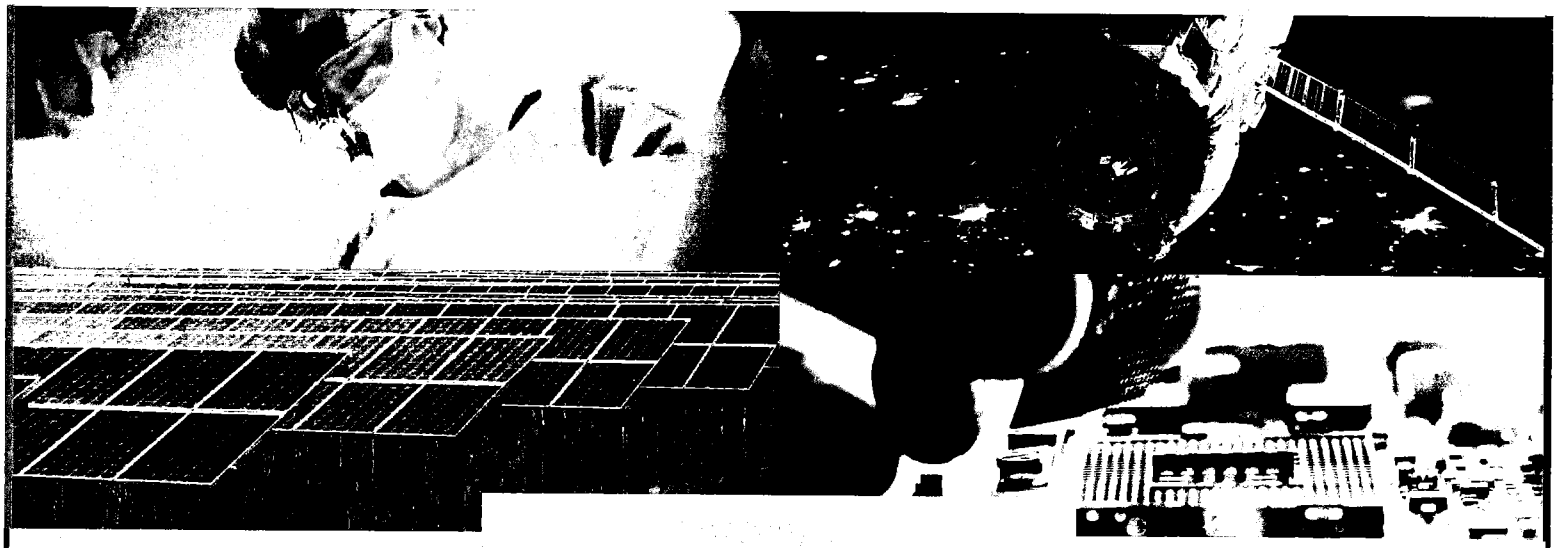
Conclusion

- In conclusion, we ask you to support SB 310.

FluoroCouncil
Global Industry Council
for FluoroTechnology

Societal Benefits of FluoroTechnology

Evan Laganis,[1,2] Steve Korzeniowski,[1,3] Jessica Bowman[1]
[1]FluoroCouncil, [2]AGC Inc., [3]BeachEdge Consulting
www.fluorocouncil.com



Per- and polyfluoroalkyl substances (PFAS) encompass many classes of chemistry that vary significantly in their physical and chemical properties, hazard profiles, and uses. Because of this variation, it is inappropriate to discuss PFAS as a single class of chemistry.

Only a limited number of the many types of PFAS or FluoroTechnology have a commercial use, most likely in the hundreds rather than thousands.

FluoroTechnology enables the safe and reliable function of a broad range of industrial and consumer products that are essential to modern living.

One type of PFAS, fluoropolymers, provide dynamic properties of strength, durability, heat and chemical-resistance, flexibility and high-performance electrical capabilities to deliver a wide-array of societal benefits. The unique properties of fluoropolymers make them critical to enabling innovation across a broad spectrum of industries, allowing for improved life-saving medical applications, safe and reliable transportation and manufacturing processes, environmental benefits, and durability and performance.

Fluoropolymers are high molecular weight polymers that are extremely stable, inert, not bioavailable, and not water soluble. Fluoropolymers that meet international criteria for "polymers of low concern" do not present significant toxicity concerns and cannot degrade into other PFAS.

SETAC North America Focused Topic Meeting: Environmental Risk Assessment of PFAS, Durham, North Carolina, USA, August 2019

Life-Saving Medical Applications

Critical Devices

- Wire insulators that maintain high signal integrity critical to the proper function of electronics in defibrillators, pacemakers and CRT, PET and MRI imaging devices
- Membrane technology used in life-saving vascular grafts, endovascular and interventional devices and surgical meshes to improve the lives and longevity of patients

Diagnostic Procedures

- Low-friction and hemocompatible coatings for catheters, stents and needles improve patient comfort and safety

Disease Control

- Additives to make durable wall coatings resistant to aggressive use of biocides for cleaning to help prevent infections and transmission of diseases in hospitals

Safety & Reliability

Transportation

- Ultra-high frequency wire and cable insulation necessary for navigation, fly-by-wire control and aircraft communications
- High and low temperature brake and hydraulic fluids used in aircraft control systems and brakes
- Wire coatings that increase reliability of engine compartment wiring and gauges that improve auto safety and reduce engine compartment fires
- Chemical and heat-resistant gaskets and O-rings that improve reliability and reduce maintenance frequency and service

Industrial Processes

- Fuel system seals and hoses, O-rings downhole and field equipment gaskets used in oil and gas recovery that improve reliability and safety by resisting extreme heat and harsh chemicals
- Pipes, tanks, valve linings and hoses that provide resistance to high heat and chemical attack in the manufacture, transport and handling of pharmaceuticals and chemicals
- Critical to the ultra-pure semiconductor manufacturing environment which utilizes highly-reactive chemicals and very expensive corrosion resistant equipment

Environmental & Public Health Benefits

Alternative Energy

- Efficient electrolytic ionic migration, allowing for smaller, more efficient lithium batteries critical to all types of modern electronics, including cell phones
- Chemical resistant membranes and dividers in fuel cells
- Superior weatherability, high transparency and flexibility find utility in films used in photovoltaics

Emission Reductions

- Automobile cylinder head coatings and hoses increase fuel efficiency and reduce fugitive gasoline vapor emissions
- Particle and gas filtration that eliminates flue gas emissions from power generation facilities

Drinking Water Sanitation

- Ion exchange membranes replacing the use of asbestos and mercury cells in the production of chlorine used for drinking water purification

Durability & Performance

High Performance Electronics

- Transmission of high frequency signals on which most modern electronics rely
- Improved insulation, weatherability, transparency and water resistance for many valuable electronic products
- Smooth and smudge resistant touch screens

Infrastructure

- Architectural membrane fabrics used in roofs provide weatherability, durability, energy-efficiency and appealing aesthetics, such as for sports stadiums
- Wire and cable coatings which provide high temperature endurance and resistance to fire, chemicals and stress cracking
- Weather resistant industrial coatings which extend the life and aesthetics of outdoor structures, including bridges

Composite Fabrication

- High-temperature, low permeability, non-stick and chemically durable release films and vacuum bag used in very demanding manufacturing processes, including that of aerospace components

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Vicki Quint,
Brookfield, WI
September 3, 2019

99% of United States citizens have PFAS levels in their blood and 100% have not given their consent. Unlike normal cancer carcinogens, PFAS bind with the blood and go to target organs in the bodies' system. They impact every system in the human body. C6, according to Dr. Linda Birnbaum of the NIH, may be even more toxic although in the body a shorter period of time. It was not a good replacement decision.

I was honored last year an Arizona fire service professional, an industrial hygienist, asked me to write a chapter for her new book, Exposed. It was on firefighter exposures. My late chief's story is one of the chapters and PFAS is covered. Not only Class B foams contain fluorine but Class A and wetting agents do as well. Class B foams can be used as Class A foams but just in a lesser percentage. Firefighters are heavily exposed to PFAS by their bunker gear and through firefighting foams.

PFAS are a hazardous material and highly toxic to humans. There is nothing emerging about them. For decades, the US citizen has carried the liability for these products while corporations profited. If firefighting foam is used in a municipality, the city must sign off and assume the liability: which is also known as the taxpayer.

Firefighters using PFAS products have been shown to have greater exposures than the general public. Industry efforts to replace long chain compounds with shorter chain C6 chemicals was not a good solution for anyone but corporate profit lines. Firefighters haven't been told about PFAS in their gear or firefighting foams. According to the ATSDR, firefighters are expected to have occupational exposure to PFAS. No one has told them or their families.

The DNR informed me earlier this year that they cannot be involved in firefighter PFAS issues. Our state fire marshal has no authority because of state statute limitations. They can only investigate arson fires by law. Last August, I began writing our 750 Wisconsin fire chiefs about PFAS. The first ones I wrote were the 106 fire departments that had

been involved in the Watertown tire fire through mutual aid in July 2005. Ten tons of a "wetting agent" was used. I finished up my fire chief letters last April. I was also told to contact the Governor's office, which I did.

Professor Graham Peaslee from the University of Notre Dame in Notre Dame, Indiana began testing firefighter bunker gear last year. It is highly contaminated and should be handled as hazardous material. He tested gear over a 20 year time span including new old gear, old gear and brand new "new" gear. The fluorinated chemicals tested on the firefighting bunker gear are much more than what is required in the National Fire Protection Association (NFPA) standard.

My late chief's firefighting helmet still had a fabric liner and sweat bands in it. The chemically treated fabric is to protect them from heat and has water repellency. It covered his ears and the back of his neck. It was very difficult to remove so my local firefighting department took the liner out for me. I told the firefighter that industry has stated the equipment is perfectly fine. His response was: "We know they are lying to us!" The helmet liner tested extremely high in perfluorinated chemical compounds.

Old, used contaminated firefighting bunker gear is put into landfills which makes its way into the water supplies. We have around 17,500 firefighters in Wisconsin and 1.056 million in the United States. According to Professor Peaslee, one set of bunker gear can contaminate a large lake.

Fire stations are continuing to clean foam gear in the driveways of their fire departments. Vehicular fires are continuing to be extinguished with foam which is then washed off the side of the roads. Some fire departments are using foam products as a matter of protocol on all structure fires. Or, in barns on hayloft fires.

According to the Centers for Disease Control (CDC), 1 in 3 firefighters will die of cancer. In my world it is 100%. We want PFAS exposures in our water supplies and to our firefighters stopped.

LEAGUE OF WOMEN VOTERS®
OF WISCONSIN

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September 3, 2019

To: Senate Committee on Natural Resources & Energy

Re: The League of Women Voters of Wisconsin Opposes Senate Bill 310

The League of Women Voters of Wisconsin supports the preservation of the physical, chemical and biological integrity of the ecosystem and maximum protection of public health and the environment. Specifically, the League supports the regulation of pollution sources by control and penalties, by inspection and monitoring, and by using vigorous enforcement mechanisms. SB 310 regulates the use of fire fighting foams that contain intentionally added PFAS and grants rule-making authority.

PFAS are a family of artificially created chemicals that are easily moved by water from locations where they are manufactured or used. Ground, surface, and drinking water are already being contaminated at various locations around the state. PFAS build up in the body and have serious health effects.

The League of Women Voters of Wisconsin opposes SB 310. Although the bill begins by stating that such foams are prohibited,

- the numerous exceptions provided for in this bill make much of the use of such foams in fact legal
- the bill also states: "Nothing in this section shall be construed as prohibiting the manufacture, sale, or distribution of a class B fire fighting foam that contains intentionally added PFAS"
- the bill does authorize the Wisconsin Department of Natural Resources to adopt rules on containment, treatment, and disposal measures but such rules would apply only to testing facilities, which is only one of many situations where PFAS has already been identified in Wisconsin

The League of Women Voters encourages a rapid transition to alternative fire fighting foams that do not include PFAS. Furthermore, the League directs your attention to SB 302, the CLEAR Act. That bill, which the League supports, provides a more comprehensive regulatory framework for a direct and consistent treatment of PFAS.

Thank you for considering our testimony.

Had this been the law twenty years ago, none of the PFAS well contamination from the Tyco Fire Technology Center would have happened. AFFF fighter fighting foam containing PFAS was used for training purposes and testing of the foam mixtures was done without proper containment measures to ensure it did not enter the environment and groundwater.

Additionally, we have requested and Rep. Nygren has agreed to introduce an amendment that would prohibit the disposal of fire fighting foam containing PFAS through sanitary sewers which would affect future biosolid contaminations in wastewater treatment facilities across Wisconsin.

We strongly support this bill with this amendment and thank our Rep. John Nygren, and Senator Cowles for their sponsorship of it.

STOP POISONING OUR WATER

The PFAS Contamination Crisis In Marinette County

Doug Oitzinger and Jeff Lamont

S.O.H2O
STOP POISONING OUR WATER

POISONING

" A substance that causes injury, illness, or death, especially by chemical means"

The American Heritage Dictionary

PFAS = POISON

WHAT ARE PFAS?
(Pronounced "P- FAS")

- Per- and polyfluoroalkyl substances (PFAS) are a group of **man-made chemicals** that don't occur naturally in the environment. There are thousands of different PFAS compounds including PFOA, PFOS , and "GenX" formulations. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. The EPA has determined that some PFAS compounds are "Toxic."

"FOREVER CHEMICALS"

- PFAS compounds don't break down in the environment and are often called the **"forever chemicals."** Once they enter our bloodstream their presence can be detected for decades.
- PFAS are also **Bioaccumulators.** Bioaccumulation occurs when an organism absorbs a substance at a rate faster than that at which the substance is lost. Even relatively small amounts can build up over time in the human body.

PFAS CAN BE FOUND IN

- Food packaged in PFAS-containing materials, processed with equipment that used PFAS (microwave popcorn bags for example)
- Commercial household products, including stain- and water-repellent fabrics, nonstick products (e.g., Teflon), polishes, waxes, paints, cleaning products,
- **Fire-Fighting Foams** (a major source of groundwater contamination at airports and military bases where firefighting training occurs).

PFAS HEALTH RISKS

- affect growth, learning, and behavior of infants and older children
- lower a woman's chance of getting pregnant
- interfere with the body's natural hormones
- increase cholesterol levels
- affect the immune system
- increase the risk of cancer(for (PFOA)
- thyroid hormone disruption (for PFOS)
- testicular cancer

WATER INGESTION

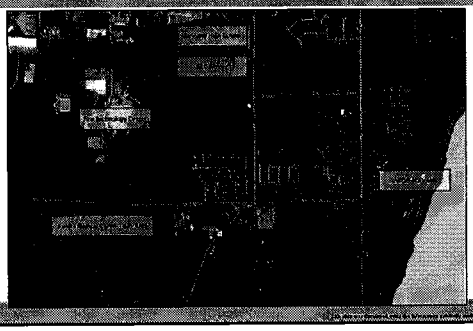
- ***Drinking water*** **is a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility. (Tyco)**

FOOD INGESTION

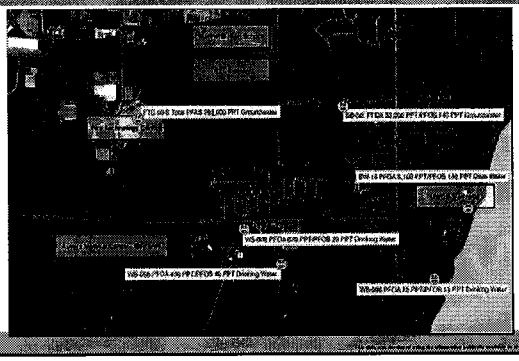
People can be exposed to low levels of PFAS through *food*, which can become contaminated through:

- Eating Fish living in Contaminated Water (Tyco)
- Eating Food grown in Contaminated soil or watered with Contaminated water(Tyco)
- Food packaging containing PFAS
- Equipment that used PFAS during food processing.

AFFF PFAS CONTAMINATION SOURCE #1 TYCO/JOHNSON CONTROLS FIRE TECHNOLOGY CENTER



CONTAMINATION EXAMPLES



BIOSOLIDS

- A bi-product of the Wastewater Treatment are biosolids or sludge. This sludge has been tested and found to have significant PFAS concentrations of **210,000 PPT PFOS, and 10,000 PPT PFOA.** This sludge which would normally be removed and spread on agricultural land but is now being held at the plant at the request of the DNR.

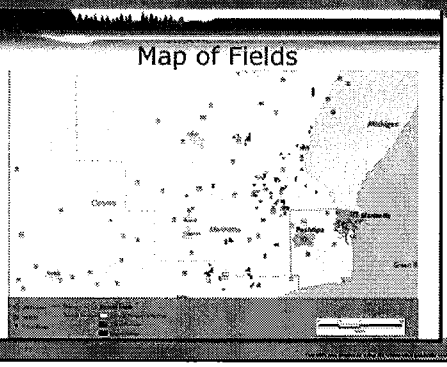
BIOSOLIDS CONTAMINATION SOURCE #2

- For over 20 years, Tyco has flushed AFFF foam down the sanitary sewers at both the FTC location and the manufacturing plant at Stanton Street. This was done routinely as foam was tested as part of its manufacturing process inside these plants. PFAS contamination in the sewer has also come from ChemDesign on Stanton Street.

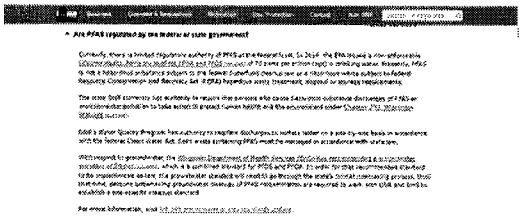
THE BIOSOLIDS NIGHTMARE

- The sludge from the Marinette Plant has been spread on local agricultural fields for well over 20 years at 72 different locations. None of these fields have been tested for PFAS contamination nor have any of the private wells on those properties. The Biosolids from the Marinette Plant will never be allowed to be spread again on agricultural fields until all PFAS has been eliminated from the plant.

BIOSOLIDS DISPOSAL LOCATIONS



PFAS IS NOT REGULATED



AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

The ATSDR CDC issued a 2018 draft report that states the current EPA HAL 70 PPT may be too high by as much as a factor of ten and suggests an appropriate HAL could be as low as:

- **7 PPT for PFOS**
- **10 PPT for PFOA**

VERMONT'S HAL

- Vermont's health advisory level for the sum of five PFAS should not exceed **20 PPT (parts per trillion)** in drinking water. The five PFAS chemicals are:
- PFOA (perfluorooctanoic acid)
- PFOS (perfluorooctane sulfonate)
- PFHxS (perfluorohexane sulfonic acid)
- PFHpA (perfluoroheptanoic acid)
- PFNA (perfluorononanoic acid)
- "If your water has been tested and the total sum of the five PFAS is more than 20 PPT, ***we recommend not using your water for drinking, food preparation, cooking, brushing teeth, preparing baby formula, or any other manner of ingestion.*** Use bottled water instead or water from a known safe source. ***Do not use water containing the five PFAS over 20 PPT to water your garden. The PFAS could be taken up by the vegetables."***

MICHIGAN

- **Michigan has just set a new drinking water standard of:**
  - **PFOA 9 PPT**
  - **PFOS 8 PPT**
  - PFNA 9 PPT
  - PFHxS 84 PPT
  - PFBS 1,000 PPT
- **Surface Water discharging into rivers & lakes (Wastewater Treatment facilities included)**
  - PFOS 11 PPT (waters protected as drinking water source)
  - PFOS 12 PPT (waters protected as non-drinking water source)
  - PFOA 420 PPT (waters protected as drinking water source)
  - PFOA 12,000 PPT (waters protected as non-drinking water source)

WISCONSIN

- Wisconsin Department of Health has recommended a combined 20 PPT PFOA/PFOS for Groundwater
- For comparison, the allowable limits for Arsenic in in drinking water is 500 times higher than PFAS. In other words, drinking small amounts of rat poison is safer than drinking extremely smaller amounts of PFAS.

PFAS MYTH #1

- *"DHS & DNR are recommending a mandatory 2 PPT clean-up standard."* **NO THEY ARE NOT.** The 2 PPT Preventative Action Limit (PAL) is a trigger causing the DNR to review different options, including further monitoring or no action at all. **Triggering the PAL does not require the site to take remedial action.**

PFAS MYTH #2

- *"PFOA and PFOS are no longer manufactured in the United States therefore the contamination being found is just legacy pollution."* **NOT TRUE.** There are thousands and thousands of gallons of biosolids being held at the Marinette Wastewater Treatment Plant that are highly contaminated with PFOA and PFOS collected in the last 18 months. That's not legacy pollution. Shorter chain compounds have been found to be unstable and transition to other forms of PFAS such as PFOA and PFOS. Products containing PFOA and PFOS are still being imported into the country.

PFAS MYTH #3

- *"Only PFOA and PFOS are a health concern."*
  - The lack of studies on the GenX and other PFAS compounds are not "proof" of their safety but represent the opposite: "no proof" of their safety
  - Vermont for example, already includes some GenX compounds in their combined HAL of 20 PPT
  - North Carolina recently won a $12 million settlement against the Chemours Fayetteville Works Plant for GenX contamination of the City's water supply

AB 923/SB 310:
AN ACT to create 299.48 of the statutes; relating to: regulating fire fighting foam that contains certain contaminants and granting rule-making authority.

Had this been the law twenty years ago, none of the PFAS well contamination from the Tyco Fire Technology Center would have happened. AFFF fighter fighting foam containing PFAS was used for training purposes and testing of the foam mixtures was done without proper containment measures to ensure it did not enter the environment and groundwater.

Additionally, we have requested and Rep. Nygren has agreed to introduce an amendment that would prohibit the disposal of fire fighting foam containing PFAS through sanitary sewers which would affect future biosolid contaminations in wastewater treatment facilities across Wisconsin.

We strongly support this bill with this amendment and thank our Rep. John Nygren, and Senator Cowles for their sponsorship of it.

AB 921/SB 302:
AN ACT to amend 292.31 (1) (d) (intro.); and to create 20.370 (4) (ba), 20.370 (4) (ab), 20.370 (4) (ad), 20.370 (4) (ae), 20.370 (4) (ak), 160.07 (4) (f), 160.07 (7), 160.15 (4), 281.17 (8) (c), 285.27 (2) (bm), 292.31 (1) (d) 1m., 292.74 and 299.15 (2m) of the statutes; relating to: setting standards for certain contaminants; providing information relating to off-site disposal of certain waste; extending the time limit for emergency rule procedures; providing an exemption from emergency rule procedures; granting rule-making authority; and making an appropriation.

There are no Federal or State Regulations to protect our drinking water, groundwater, or surface water from PFAS contamination. The Town of Peshtigo residents were shocked and angered as they learned that there were no rules and no limits on the poison that had contaminated their wells and drinking water. PFAS is the water quality challenge of the 21st Century because it does not break down in the environment and it will take all of the rest of this Century to clean it up. We must start by setting the rules so industry and municipal utilities can begin the process to protect our residents.

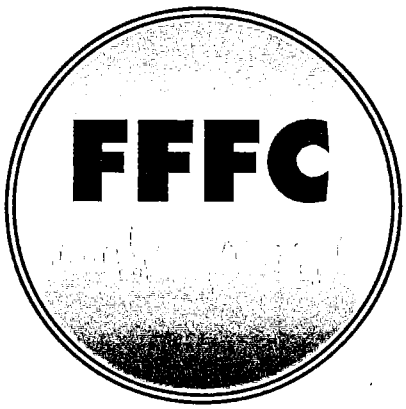
We strongly support this bill and thank our Senator Dave Hansen and Senator Miller and Rep. Gruszynski for their sponsorship of it.

COST vs BENEFIT ANALYSIS

- What cost is too high to protect expecting mothers from miscarriages?
- What cost is too high to protect young children from life-long immune deficiencies, learning disabilities, and behavioral problems?
- How much poison should your family be forced to consume so industry can avoid the costs of regulation?
- How much property value loss is acceptable to avoid regulation of PFAS exposure?

WISCONSIN

There are 5.8 Million Stakeholders in Wisconsin on the issue of water quality. Please make sure you do everything you can to protect our health and safety. Please pass legislation to protect our drinking water, our agricultural resources, our food, our environment, and our property values from the scourge of PFAS contamination.



Fire Fighting Foam Coalition

Best Practice Guidance for Use of Class B Fire Fighting Foams

March 2016

1001 19th Street North • Suite 1200 • Arlington, VA 22209 • 571-384-7915 • www.fffc.org

Summary

Class B firefighting foams serve a vital role in protection against flammable liquid fires. At the same time these foams contain ingredients such as fluorosurfactants that can impact the environment. Following is a list of steps that should be taken to protect the environment when using fluorinated Class B firefighting foams (AFFF, AR-AFFF, FFFP, AR-FFFP, FP, FPAR):

- Fluorinated Class B foams should only be used in situations that present a significant flammable liquid hazard, where their superior performance and unique film-forming properties are required.
- Before deciding to use fluorinated Class B foam for a specific hazard, investigate whether other non-fluorinated techniques can achieve the required extinguishment and burnback resistance. Be aware of the shortfalls of these alternative methods including no film formation, potential for longer extinguishments and reduced after-fire protection.
- Alternative techniques and agents must be evaluated well in advance of an emergency situation that requires urgent response.
- Use training foams that do not contain fluorosurfactants for training purposes.
- Use surrogate liquid test methods that do not contain fluorosurfactants for testing fixed system and vehicle foam proportioning systems.
- Provide for containment, treatment, and proper disposal of foam solution – do not release directly to the environment. Develop firewater runoff collection plans for the use of fluorinated Class B foam.
- Follow applicable industry standards for design, installation, maintenance, and testing of foam systems. Obtain and follow manufacturers' recommendations for foam concentrate and equipment. Give due consideration to products with third party approvals.
- Use foam, equipment and best practices that will safely and successfully handle the incident in the most efficient way. This includes but is not limited to education, training, preplanning and actions at an incident.
- Develop plans for dealing with unplanned releases of foam concentrate or foam solution so as to minimize the environmental impact.
- Minimize foam releases from fixed systems as a result of accidental discharges by using approved detection/control systems and proper maintenance of the system. Always close foam injection valves when the fire control panel or detection devices are being inspected and tested.
- Plan system testing so as to properly contain and dispose of foam solution effluent generated by the tests.
- With a live fire there are an unlimited number of circumstances, therefore, any and all actions should consider fire fighter and public safety first.

Introduction

Firefighting foams serve a vital role in fire protection throughout the world. Their use has proven to be essential for the control of flammable liquid fire threats. The ability of foam to rapidly extinguish flammable liquid spill fires has undoubtedly saved many lives, reduced property loss, and helped minimize the global pollution that can result from the uncontrolled burning of flammable liquids.

However, with ever-increasing environmental awareness, recent concern has focused on the potential adverse environmental impact of foam solution discharges. The primary concerns are toxicity, biodegradability, persistence, mobility, treatability in wastewater treatment plants, and nutrient loading. All of these are of concern when the end-use foam solutions reach natural or domestic water systems.

It should be emphasized that it is not the intent of this guidance document to limit or restrict the use of firefighting foam. The fire safety advantages of using foam are greater than the risks of potential environmental problems. The ultimate goal of this guidance document is to foster use of foam in an environmentally responsible manner so as to minimize risk from its use.

Scope

The information provided in this guidance document covers only foams for Class B combustible and flammable liquid fuel fires. Although other types of foams may be used for this purpose, the primary emphasis of this document relates to aqueous film-forming foam (AFFF), alcohol resistant aqueous film-forming foam (AR-AFFF), film-forming fluoroprotein foam (FFFP), alcohol resistant film-forming fluoroprotein foam (AR-FFFP), and fluoroprotein foam (FP, FPAR). The use of the term "Class B foam" will be understood to refer to all of the products listed above.

Foam Selection

Class B foams are the most effective agents currently available to fight flammable liquid fires. These foams contain fluorosurfactants that provide fuel repellency, heat stability and the required low surface tension and positive spreading coefficient that enables formation of an aqueous film on the surface of hydrocarbon fuels. It is the combination of this film formation capability and fuel repellency that gives most Class B foams their effectiveness against flammable liquid fires. Class B foams provide rapid extinguishment, burn-back resistance, and protection against vapor release, which help to prevent re-ignition and protect firefighters working in the area as part of the rescue and recovery operations.

Multipurpose AR-AFFF or AR-FFFP foams allow one agent to effectively work on both hydrocarbons and polar solvents fires. This allows a single agent to be effective on any flammable liquid fire. This attribute helps reduce foam stocks for mixed fuel facilities or response services from having two agents to only stocking a single agent for Class B fires. It also avoids the incorrect agent selection at a scene that could disperse an ineffective agent.

In order to minimize the environmental impact of Class B foams, their use should be limited to situations that present a significant flammable liquid hazard such as airport operations, storage tanks, terminals and petroleum/chemical processing, highway and rail transportation, marine and military applications, industrial facilities, and some power generating facilities.

The use of Class B foam is not recommended for Class A (wood) or Class C (electrical) hazards where there is minimal or no flammable liquid threat. If a flammable liquid threat exists, Class C applications must be de-energized since foam contains water that can conduct electricity. Examples of situations where Class B foams are not required include but are not limited to forest fires, residential and structural fires, computer rooms and telecommunications facilities, restaurants and commercial kitchens, and general facilities protection. In addition Class B foams may not be necessary for small flammable liquid threats such as automobile fires without a significant fuel spill where a large water application rate or dry chemical extinguisher can be used.

Eliminating Foam Discharge

Class B foams contain fluorosurfactants that are persistent in the environment and are not removed by passage through a wastewater treatment plant. As a result the only way to ensure that fluorosurfactants from Class B foams are not released to the environment is to eliminate foam discharge altogether. Obviously this is not possible or desirable in the case of emergency firefighting or fixed system fire suppression, and may not be possible in other scenarios such as accidental release. Fortunately there are alternative fluids and methods currently available that make it possible in many cases to eliminate the use of Class B foam for training and testing of foam systems and equipment, which represent the majority of foam use.

Training

There are specially designed training foams available from most foam manufacturers that simulate Class B foam during live training and do not contain fluorosurfactants. These foams are normally biodegradable and usually with advanced approval can be safely sent for treatment to the local wastewater treatment plant. Because they do not contain fluorosurfactants, training foams produce no film thereby allowing for more repeat fire training sessions and a more challenging training environment. During training evolutions fire fighters must be aware of the trade off in performance with training foams resulting in longer extinguishments and little burnback protection compared with Class B foams. Firefighters and other foam users should work with the Authority Having Jurisdiction (AHJ) to ensure that the use of training foams meets all local and application-specific live training requirements. In some cases training foams can also be used as a substitute for Class B foams in vehicle and equipment testing.

Training should be conducted under conditions conducive to the collection of spent foam. Training facility design should include a containment system. Some fire training facilities have elaborate systems designed and constructed to collect foam solution, separate it from the fuel, treat it, and in some cases re-use the treated water. In general, advanced training and education on the products, hazards and applications are critical. This alone will significantly contribute to the most efficient and safe use of Class B firefighting foams.

Foam System Testing

Many AHJs and third-party approval organizations require periodic testing of installed foam fire protection systems to assure reliable performance in an actual fire event. Typically these tests involve full discharge of the system usually through fire hose lines connected to test outlets that are part of the system installation. Testing primarily involves engineered, fixed foam fire-extinguishing systems. Two types of tests are conducted on foam systems: acceptance tests, conducted pursuant to installation of the system; and maintenance tests, usually conducted annually to ensure the operability of the system.

Surrogate Liquid Test Methods

The major focus when evaluating foam system performance is to confirm proper function of the foam proportioning system. This is done by conducting a foam injection rate test. This testing can now be done using surrogate non-foaming environmentally acceptable test liquids in lieu of Class B foam if the AHJ permits such substitutions. The surrogate test liquids are specifically formulated to simulate the flow behavior (viscosity characteristics) and approximate conductivity or refractive index of the foam concentrate used in the system. If these alternatives are used, users must put in place proper procedures to guarantee the systems can be returned to emergency ready status without issue. A common mistake can be not opening the main foam supply valve after testing.

When foam must be used for acceptance or maintenance tests, only a small amount of foam concentrate should be discharged to verify the correct concentration of foam in the foam water solution. Designated foam solution (foam and water mixture) test outlets should be designed into the piping system so that the discharge of foam solution can be directed to a controlled location. The controlled location can consist of a portable tank that would be transported to an approved disposal site by a licensed contractor. Containment, transportation, and disposal of the foam solution as well as foam concentrate replacement can be costly. Portions of the acceptance and ongoing maintenance testing do not require the proportioning system to operate and those parts can be accomplished by discharging only water.

Water Equivalency Method

In some cases water can be used as a surrogate liquid in place of foam. This is generally called the "water equivalency method" since a correction factor (to account for viscosity differences between foam and water) is applied to the water flow rate to make it equivalent to the foam concentrate flow rate. When using this method, flow meter measurements on the water and foam concentrate sides of the system are compared to determine the injection rate. The simulated foam concentrate (using water in place of foam) flow rate is multiplied by a correction factor to account for the flow rate difference between foam concentrate and water. This corrected flow rate is divided by the total system flow rate to determine the foam injection rate percentage. While this practice may work on some systems, water equivalency is not accurate when representing the viscosity characteristics of most alcohol resistant (AR) foam concentrates due to their thixotropic nature. Users should consult with the foam manufacturer to determine if they have appropriate test data to support the water equivalency testing method.

Firefighting Vehicle Tests

Aircraft rescue and firefighting (ARFF) and municipal fire fighting vehicles are required to go through periodic foam nozzle discharge tests to ensure proper function of their foam proportioning system. Traditionally, these tests have been done by discharging foam solution with all of the associated issues involved in containment and disposal. Technology is available to enable testing these vehicles using water or a water-based surrogate liquid containing an environmentally benign biodegradable dye. The dye in the surrogate test liquid can be detected in the proportioned solution stream by means of colorimeter instrumentation. When water is used as the surrogate test liquid a flow meter system measures the water injection rate (with correction factors applied).

Since firefighting vehicles are mobile foam systems, the previously discussed surrogate foam liquids, training foams and water equivalency options can also be employed. The same appropriate care and control instructions would apply. Additional consideration should be given to the total emergency vehicle out of service time, ease of placement back to ready status and any required back up coverage.

Containing Foam Discharge

Fires, fuel spills and evolving emergencies occur in many types of locations and under many different circumstances, often at unpredictable times. In some cases it is possible to collect the firewater runoff and in others it is not. However, for sites where there is a significant flammable liquid hazard such as fuel farms and petroleum/chemical processing, airport operations, specific rail transportation, marine and military storages, and industrial facilities, it is recommended that a firewater runoff collection plan be developed. This plan aims at listing and making available the required (permanent or temporary) equipment that will capture the runoff water and place this water in a contained area or tank allowing later treatment. The goal of the plan is to minimize the volume of non-collected runoff firewater. From this preparation work, in the case of a full-scale fire, intervention teams will install the firewater runoff collection equipment at the same time as they install and activate the foam extinguishment equipment. Spill and containment equipment should be on-site and additional resources identified in any plan. Education and training should include expected and unpredicted runoff containment.

The total foam water solution that has been used in firefighting operations will probably be heavily contaminated with the fuel or fuels involved in the fire as well as solids and other residues. It is also likely to have been diluted with water discharged for cooling purposes. The finished foam solution will usually contain about 1- 6% foam concentrate depending on the type of foam used.

Manual Firefighting Operations

In some cases, the foam solution used during fire department operations can be collected or minimized. However, it is not always possible to control or contain the foam due to the hazards presented during an emergency operation. This can be a consequence of the location of the incident or the circumstances surrounding it. Event-initiated conservation efforts and manual containment measures are usually executed by the responding fire department to reduce and/or contain the flow of foam water solution when conditions and manpower permit. These operations include the following measures:

- Blocking sewer drains - This is a common practice used to prevent contaminated runoff firewater from entering the sewer system unchecked. It is then diverted to an area suitable for containment.
- Portable dikes - These are generally used for land-based operations. They can be set up by the fire department personnel during or after extinguishment to collect run-off.
- Portable booms - These are used for marine-based operations, which are set up to contain foam in a defined area. These generally involve the use of floating booms within a natural body of water.

Fixed System Releases

This type of release is generally uncontrolled, whether the result of a fire incident or accidental release. The foam solution discharge in this type of scenario can be dealt with by event-initiated operations or by engineered containment systems. Event-initiated operations encompass the same temporary measures that would be taken during fire department operations: portable dikes, floating booms, etc. Engineered containment would be based mainly on the location and type of facility, and would consist of holding tanks, dykes/bunds or areas where the contaminated foam water solution would be collected, treated, and sent to an appropriate disposal facility.

It is recommended that the design of new fixed systems based on Class B foams also integrate the collection of runoff water.

Firewater Disposal

As explained above, runoff firewater is a complex fluid to handle after its collection. It potentially contains residual hydrocarbons or polar solvents from the burning fuel, combustion products, hydrocarbon surfactants, water-soluble polymers, hydrolyzed proteins, co-solvents, anti-freezing agents and fluorinated surfactants. This type of runoff firewater can also potentially foam. Incineration in appropriate equipment is a recognized way to dispose of this type of effluent. Other techniques that have proven effective include a combination of coagulation, flocculation, electro-flocculation, reverse osmosis, and adsorption on granular activated carbon (GAC).

Foam Concentrate Disposal

Class B foam concentrates do not carry an expiration date and generally have a 10 to 25-year shelf life, so the need to dispose of spent or expired concentrate should be infrequent. Most foam manufacturers and some independent contractors offer a service of testing foam concentrate samples on a regular basis to determine if the concentrate still meets the original specification. When disposal of Class B foam concentrate is required, it is recommended that it be sent for thermal destruction (high temperature incineration) to a facility capable of handling halogenated waste or the equivalent.

cleanwisconsin

your environmental voice since 1970

Submitted Testimony of Carly Michiels
Government Relations Director
Assembly Bill 323, Assembly Environment Committee
Senate Bill 310, Senate Committee on Natural Resources and Energy
September 3, 2019

Thank you for the opportunity to submit testimony on Assembly Bill (AB) 323 and Senate Bill (SB) 310 relating to regulation of fire-fighting foam that contains certain contaminants. Clean Wisconsin is a non-profit environmental advocacy group focused on clean water, clean air, and clean energy issues. We were founded almost fifty years ago and have over 20,000 members and supporters around the state. We have been working on water pollution issues in Wisconsin since our founding, and while some of the particulars changed Wisconsin remains a state with abundant water resources but also abundant challenges in restoring and protecting those waters. Clean Wisconsin employs scientists, policy experts, and legal staff to bring all the tools at our disposal to protect and improve both our air and water resources.

As you know some firefighting foam contains an emerging contaminant known as PFAS (Per - and poly fluoroalkyl substances). This emerging human-made contaminant is also known as harmful "forever" chemicals because they don't easily break down and build up in the body and environment over a lifetime. PFAS can have serious health effects and are already contaminating Wisconsin's water resources. The most common places to find high levels of PFAS are near companies that manufacture products that use PFAS materials, places such as military airfields or training bases that are heavy users of PFAS, and wastewater treatment plants. This includes firefighting training facilities that may train often with foam containing PFAS – which is the contamination incidence that AB 323 and SB 310 addresses.

We appreciate the intent of the authors, Senator Cowles and Representative Nygren, to continue to prioritize PFAS pollution during the Year of Clean Drinking Water. This bill calls attention to a very specific source of PFAS contamination occurring in Marinette, WI from a firefighting training facility. In Marinette one source of drinking water tested above 1,900 parts per trillion (ppt) which is 95 times higher than the Department of Health Services (DHS) recommended statewide standard of 20 ppt.

There has been increased bipartisan attention on addressing PFAS pollution in Wisconsin from Governor Evers, state legislators, and state agencies. This is an important step forward because the federal government does not regulate PFAS and only has a recommended heath advisory level of 70 ppt which is not enforceable. Some of the recent actions on PFAS in Wisconsin include:

- The 2019-21 State Budget included funding for staff, modeling contamination sites, and a study of firefighters utilizing PFAS material.

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- DHS finalized its Cycle 10 recommendations for groundwater enforcement standards which included 2 PFAS chemicals (PFOA and PFOS). These recommendations had not been revised in over 10 years and was a vital science-based step in addressing PFAS pollution. DHS recommended a combined level of 20 ppt for PFOA and PFOS safe for public health.
- SB 302 was introduced, The Chemical Level Enforcement and Remediation (CLEAR) Act. The CLEAR Act is one of the most comprehensive PFAS bills in the nation. This bill regulates in a science-based method across more medias like groundwater, surface water, drinking water, air emissions, biosolids, and sediment, provides more protective standards more quickly, and plans for remediation and cleanup of PFAS.
- This bill, AB 323/SB 310 was introduced, which bans the use of two PFAS chemicals (PFOA and PFOS) from being used in firefighting training.
- Executive Order #40 increases coordination and public awareness on PFAS by increasing collaboration among state agencies and creates a Coordinating Council on PFAS.
- Governor Evers directed DNR to address PFAS through rule-making in drinking water, surface water, and groundwater. This allows for DNR to start enforcing and setting standards for more ways that PFAS gets into our waterways.

Clean Wisconsin supports research-based protections and all efforts to limit PFAS contamination in our waterways. We appreciate the significant attention on addressing PFAS contamination in Wisconsin. However, although we support the concept of this bill we have a couple recommendations to strengthen and make the bill more meaningful for preventing PFAS pollution. While banning PFAS firefighting foam used in training may be important, it should be kept in mind that this is only one source of contamination and not using foam with PFAS chemicals for training purposes is already recommended as a best practice in the industry. Although that may be the case, we still support banning its use outright and offer the following recommendations which are in line with industry best practices:

- DNR also identified leakage from storage containers as a pathway PFAS may get into the environment. Regular inspection and developing a foam inventory is a best management practice for storage facilities and could be included in this bill.
- This bill should include language that would prohibit the disposal of firefighting foam containing PFAS through sanitary sewers which would affect future biosolid contaminations in wastewater treatment facilities across Wisconsin.

The heart of this bill is well-intentioned, and we appreciate the initiative from the legislators who introduced and support this bill. Everyone seems to agree that we need to come together to address PFAS contamination in Wisconsin as there is much work to be done on this issue. It is our hope that addressing some of the recommendations highlighted can also produce broad bipartisan support. Again, we are pleased to see the increased attention on addressing PFAS contamination and working together on this issue.

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