

Fire Chiefs Questions and Answers

The following is a list of questions that have been asked by various representatives of fire departments within the state of Wisconsin and includes questions from two Wisconsin State Fire Chiefs Association meetings held in February 2020 regarding PFAS-containing (fluorinated) foam.

Questions/Comments Received

- 1) For non-emergency discharges of fluorinated (PFAS-containing) foam, can fire departments (FD) use the email form to notify DNR? The email form does not currently include PFAS as an option. DNR should define which scenarios require emergency call-in reporting and which could be handled with the email form.

Yes, fire departments should use the email form, [Form 4400-225](#), to report historic, residual hazardous substance discharges that are discovered through laboratory analyses of environmental media (e.g., sampling discolored soil near a foam storage area when the date of the discharge is unknown). If you use the current version of the non-emergency form, input "PFAS" under "other" substances within the form.

In the event of a new, present-day discharge of fluorinated foam to the environment (e.g., use of AFFF to extinguish a large chemical fire), such as event requires an immediate notification by calling the Wisconsin Emergency Hotline at 1-800-943-0003.

- 2) In an emergency fire situation where fluorinated (PFAS-containing) foam is discharged for fire suppression, who will be considered the "spiller" or "discharger" of the foam? Will FDs be responsible parties? What about property owners? Causers of the fire?

Under Wis. Stat. § 292.11(3), the party responsible for a hazardous substance discharge to the environment can be the person that possesses, controls, or causes the discharge. If fluorinated foam is discharged as a result of a fire suppression activity, the person that owns the vehicle, structure and/or property that was on fire may be considered the responsible party as the possessor of a discharge of a hazardous substance. Also, the person or entity that caused the fire would be considered a responsible party as a "causer" of the incident that led to a hazardous substance discharge. Whenever possible, the DNR requires the person or entity that causes the discharge of a hazardous substance to take the appropriate response actions.

The DNR recommends that FDs work cooperatively with the RP, the DNR, and any environmental consultants that are hired to minimize fluorinated foam discharges to the environment. For example, working cooperatively with the environmental consultant hired by the responsible party or DNR to mitigate the migration of foam into utilities, waterways, and soil. RPs should consult Wis. Admin. Code NR 708.05 for immediate action response requirements.

Additional discussion of responsible party determinations is in the response to question 5 below.

- 3) Would it not be more appropriate for the FD to complete the foam cleanup and then bill the responsible party?

FDs may or may not have authority to bill (recover costs from) the responsible party after responding to a foam cleanup effort. However, the DNR does clearly have this authority. The responsibilities of each entity involved in a fire event will vary depending on the facts and site-specific scenarios. DNR recommends that FDs do whatever is practicable given the situation and their resources at the time to minimize and mitigate impacts from the discharge of fluorinated foam into the environment, and to notify DNR immediately. A recent fire in Wisconsin where fluorinated foam was used resulted in approximately \$300,000 in contaminated soil being excavated and disposed of off-site.

- 4) What are the processes FDs must follow after a discharge of fluorinated foam is reported? Where can they get guidance on these topics? Is a fire department going to be in a position to recapture spent foam?

FDs should work cooperatively with the identified RPs, the DNR, and any environmental consultant hired to minimize impacts to human health and the environment to the extent practicable, at minimum in accordance with Wis. Admin. Code ch. NR 708.05. This typically includes limiting and containing the foam discharge and keeping the foam from entering surface waters, sewers, and other utility corridors, until an environmental consultant arrives to conduct mitigation, investigation, and cleanup work. Beginning September 1, 2020, appropriate containment, treatment, and disposal or storage measures for foam containing PFAS may not include flushing, draining, or otherwise discharging the foam into a storm or sanitary sewer. After the discharge is reported to DNR, the DNR spill coordinator will contact the incident commander to provide advice and assistance. If the responsible party is unable to perform the actions necessary, DNR has the ability to hire an environmental consultant to do the necessary work.

- 5) What if a fire department uses a fluorinated foam on a structural fire that doesn't require the use of fluorinated foam? Is the owner of the structure or the FD the responsible party for the foam discharge?

Fire departments may want to reconsider the necessity of the use of fluorinated firefighting foams when the fire situation does not otherwise warrant such use. There may also be additional reasons to reevaluate foam-use choices in certain situations (e.g., environmental, legal, etc.) and the possible post-use implications. As noted in the answer to a previous question, DNR has clarified who they generally consider an RP in such a situation. However, the property owner may be concerned about the use of such fluorinated foams if they are not otherwise warranted. DNR encourages the reduction and/or elimination of the use of fluorinated foams in situations where they are not needed.

6) Is PFOA-free and PFAS-free the same thing?

No. PFOA is one distinct PFAS analyte out of more than 4,000 PFAS substances. “PFAS” stands for per- and polyfluoroalkyl substances, which is an umbrella term for a class of several thousand such compounds. PFOA, which stands for perfluorooctanoic acid, is one of the most commonly studied and referenced PFAS compounds (along with perfluorooctanesulfonic acid, or PFOS). These were two of the original PFAS substances developed in the 1940s. Most modern fluorinated foams (i.e., those manufactured prior to 2003) contain little or no amounts of PFOA and PFOS, but these foams are still an environmental and human health concern due to other PFAS ingredients. PFOA and PFOS may also still be in fire department equipment or storage tanks that once contained older versions of fluorinated foam. Even if the foam concentrate container label states PFOA- or PFOS-free, the foam may still contain intentionally added PFAS substances – likely those PFAS substances developed more recently to replace PFOA and PFOS. DNR recommends all FDs inventory their fluorinated foam and work with the manufacturer and professional fire associations to know their products.

7) For FDs considering getting their current foam or an alternative foam sampled and analyzed: What analysis should I use? What do the analysis results mean? Who can help with interpreting the sample results?

Due to the proprietary nature of firefighting foam formulations, foam manufacturing companies usually do not disclose what specific chemical compounds are included in their foam product formulas, and, as a result, may not include PFAS ingredients on their Safety Data Sheets (SDS). Some foam manufacturers market their products as “fluorine-free” or “PFAS-free,” but these claims may not be accurate. Foam analysis at a DNR-certified environmental laboratory may be necessary to identify which foams are considered “PFAS-free.” DNR does not endorse or recommend any brand or firefighting foam products.

The following DNR foam sampling suggestions are only for a fire department’s consideration, and these suggestions may be updated from time to time based upon new or additional information provided to the DNR:

- a. Ideally, PFAS sampling of foam should include analyses for all 36 PFAS that Wisconsin is currently offering certification for, utilizing an EPA Modified 537 method. Some laboratory analyses can also determine the level of total organic fluorine in a foam product, but at significantly higher detection limits and using non-certified methods.
- b. If you get your foam sampled for PFAS and need assistance interpreting the results, contact DNR employees Jason Lowery at Jason.Lowery@wisconsin.gov or 608-267-7570 or Bridget Kelly at BridgetB.Kelly@wisconsin.gov or 608-266-8516.

8) Can DNR conduct foam sampling?

There are several laboratories that are working with the DNR to obtain certification to analyze for PFAS. These labs are listed on this DNR [webpage](#). The DNR will accept PFAS results from all of

these laboratories while they undergo the certification process. To obtain the lowest PFAS detection limits, foam analysis should be done using an EPA Modified 537 Method for Wisconsin's list of 36 PFAS analytes of concern.

- 9) Why doesn't DNR procure a list of safe foams? Why should every department conduct sampling if other FD's have already sampled the same product? Can DNR develop a directory of sample results so that we are not duplicating effort.

DNR agrees that a centralized list of foams with lower PFAS concentrations would be beneficial. Below are links to publicly available websites with information about foams with purportedly lower PFAS concentrations. The DNR has not verified the accuracy of any of this information nor is DNR affiliated with any of the organizations below.

- <https://cswab.org/wp-content/uploads/2018/09/Fluorine-Free-Foams-IPEN-Paper-POPRC-14-Sept-2018-FINAL.pdf>
- <https://www.greenscreenchemicals.org/certified>
- https://www.theic2.org/aa_library

Foams marketed as "PFAS-free" may still contain measurable concentrations of PFAS. For example, one foam certification group requires a total organic fluorine concentration of < 1 part-per-million to be labeled as PFAS-free. However, the DNR, other states and US EPA are using the measurement of parts-per-trillion for PFAS standards. For example, 1 ppm of PFOS is the equivalent of 1,000,000 ppt. The Wisconsin Department of Health Services (DHS) has proposed an Enforcement Standard of 20 ppt for the total PFOA-plus-PFOS concentration, which is significantly lower than 1 ppm.

- 10) PFAS C6 foam products are advertised by some manufacturers as a "green option". Are they a green option?

Class B (and class A/B) AFFF and AR-AFFF foams are currently all manufactured with intentionally added PFAS. There are some new foams being sold as "fluorine-free" foam that do not contain intentionally added PFAS and may work effectively on most types of flammable liquid fires. However, the foam concentrate label must say FFF (fluorine-free foam), F3, or fluorine-free specifically to ensure no PFAS ingredients are included. So-called C6 foam products contain PFAS.

If a Class B or A/B foam concentrate label does not specifically state that the foam is fluorine-free, the foam likely contains PFAS. Some of the C6 foam products are more water soluble and travel further in groundwater. The C6 foams tend to be concentrated at higher levels to match the effectiveness of the older C8 foams. For all these reasons, the C6 foams may be just as harmful to the environment and public health as the original C8 foams and should not be considered a "green" nor "sustainable" option.

- 11) Where are the sample results for DNR's class A foams that show they are PFAS free? How do we know if DNR's Class A foams have 'intentionally added PFAS'?

Below are a copy of the sample results and a paper on class A firefighting foam that DNR uses:

- [Analytical Laboratory Report](#)
- [DNR Firefighting Foam Paper](#)

12) Why is all of the attention on fire departments – what about other PFAS sources?

When fire departments respond to large chemical fires, they utilize a significant volume of water that is generally uncontrolled. When they use PFAS-containing foam to respond to a Class B fire, that foam and thus water contains highly concentrated levels of PFAS. Thus, fire departments are a focus at this time because of the ongoing use of fluorinated foam by FDs and confusion about what PFAS compounds are in which fluorinated foam products. Fluorinated foam continues to be used in ways that can result in significant discharges of PFAS compounds into the environment. No other ongoing use of PFAS-containing materials or products of which DNR is aware has the potential to regularly result in substantial PFAS discharges to the environment.

In addition to assessing ongoing materials usage that has the potential to result in new PFAS discharges, DNR continues to assess and investigate legacy PFAS contamination. This includes properties and areas with past fluorinated foam use or training, including airports, Department of Defense locations, and petroleum and oil refining and storage areas. The scope of DNR's PFAS work goes far beyond fire departments.

Legacy contaminant areas also include historical manufacturing and disposal areas, such as:

- Textiles, including leather, clothing and carpets
- Furniture including upholstery
- Electroplating and metal fabrication
- Specialty paper
- Paint manufacture, storage and handling
- Chemical manufacture, storage and handling
- Landfills

13) Is it possible for sampling and analysis to keep up with changes in formulations?

It is possible with current technology to randomly sample and analyze product formulations from major distributors of firefighting foams. If any PFAS are intentionally used in a foam formulation they are typically present in levels which are easy for certified laboratories to detect. Most instrumentation can identify PFAS on the ppt level and there are rapid screening techniques becoming available that will allow even more widespread analyses in coming years.

14) Is the FAA instructing airports to use PFAS foams until 2020?

Fluorinated foams are required at FAA airports until October 2021 as a result of the FAA Reauthorization Act of 2018 (HR302); the FAA has been directed to stop requiring the use of fluorinated foam no later than October 2024. Fluorinated foams may still be used for emergencies and also for testing equipment in Wisconsin. By state law, intentionally added

PFAS-containing foam may not be used in Wisconsin for training purposes as of September 1, 2020. Compliance with both FAA and Wisconsin regulations is possible because FAA does not require the use of fluorinated foams for training purposes. We recommend seeking any clarifications or verifications on this topic at FAA.gov.

15) What is the process for removing class B foam from engines and decontaminating the tank?

Professional firefighting associations, the FAA, and US Defense Dept. facilities may have best practice guidance available for decontamination of equipment. Since the process may vary depending on the types of foam and equipment used, we recommend that FDs request assistance from qualified environmental contractors to identify an appropriate decontamination process. Decontamination processes recommended by such contractors often utilize detergents and multiple rinses for the equipment and a de-foaming agent in the wastewater containers prior to disposal.

16) How can fire departments dispose of fluorinated foam?

There is currently no state-funded disposal program (e.g. "clean sweep") for PFAS-containing foam. The Wisconsin State Legislature considered creating a program like this in the last legislative session, but it did not pass before the legislature adjourned. Legislative action is likely needed to create and fund a pick-up and disposal program for PFAS-containing foam. Michigan started a similar program in 2019 (see https://www.michigan.gov/egle/0,9429,7-135-3308_3323-514520--,00.html).

Treatment and disposal of fluorinated foam depends upon both volume of foam and PFAS concentrations. Generators of fluorinated foam waste should consult their disposal facility or a qualified environmental consultant when making disposal decisions.

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