The statement of scope for this rule, SS 015-20, was approved by the Governor on March 20, 2020, published in Register No. 771B on March 30, 2020, and approved by the Natural Resources Board on June 24, 2020. This rule was approved by the Governor on November 25, 2020.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **create** NR 159 relating to regulating firefighting foam that contains certain contaminants and affecting small business.

WA-06-20 (E)

Analysis Prepared by the Department of Natural Resources

1. Statutes Interpreted: Sections 299.48 and 227.11(2)(a), Wis. Stats.; 2019 Wisconsin Act 101 (s. 2, nonstatutory provisions directing rulemaking)

2. Statutory Authority: Sections 299.48, and 227.11(2)(a), Wis. Stats.; 2019 Wisconsin Act 101 (s. 2, nonstatutory provisions directing rulemaking)

3. Explanation of Agency Authority: Section 299.48, Wis. Stats., regulates the use of firefighting foam that contains intentionally added PFAS and grants rule-making authority to the department. Specifically, s. 299.48 (5), Wis. Stats., states that the department shall promulgate rules to implement and administer the section, including to determine appropriate containment, treatment, and disposal or storage measures for testing facilities.

Section 2 of 2019 Wisconsin Act 101 states that the department shall promulgate rules under s. 299.48 (5), Wis. Stats., no later than the first day of the 7th month beginning after the effective date of the subsection. Emergency rules promulgated under this subsection remain in effect until three years after the effective date, or the date on which permanent rules take effect. Notwithstanding s. 227.24 (1) (a) and (3), Wis. Stats., the department is not required to provide evidence that promulgating a rule under this subsection as an emergency rule is necessary for the preservation of public peace, health, safety, or welfare and is not required to provide a finding of emergency for a rule promulgated under this subsection. Section 2(1) of Act 101 took effect on the day after publication, which was February 6, 2020.

The department also has authority to promulgate rules under s. 227.11 (2)(a), Wis. Stats., necessary to effectuate the purpose of s. 299.48, Wis. Stats., requirements.

4. Related Statutes or Rules: Additional authority for pollution prevention activities is under s. 299.13, Wis. Stats.; and authority to require notification of a discharge of a hazardous substance, including firefighting foam that contains certain contaminants, under s. 292.11, Wis. Stats.

5. Plain Language Analysis: PFAS (perfluoroalkyl and polyfluoroalkyl substances) are a group of synthetic chemicals used in industry and consumer products worldwide since the 1950s. They do not break down in the environment for extremely long periods of time and they accumulate in the human body. Exposure to certain PFAS may cause adverse health effects.

2019 Wisconsin Act 101, codified in s. 299.48, Wis. Stats., prohibits the use of Class B and dual action Class A and B firefighting foams that contain intentionally added PFAS as of September 1, 2020, except in the following two situations:

- When used as part of an emergency firefighting or fire prevention operation; or
- When used for testing purposes at a testing facility that has implemented appropriate containment, treatment and disposal or storage measures to prevent discharges of the foam to the environment, and does not flush, drain or otherwise discharge the foam into a storm or sanitary sewer.

Section 299.48(3m), Wis. Stats., requires notification to the department when PFAS-containing foams are discharged to the environment in the following two situations:

- When PFAS-containing firefighting foam is used as part of an emergency firefighting or fire prevention operation, notify DNR immediately or as soon as practicable without hindering firefighting or fire prevention operations.
- When PFAS-containing firefighting foam is used for testing purposes, notify DNR immediately of any discharge of the foam to the environment.

This rule creates ch. NR 159 to implement the legislature's directive to the department to promulgate rules to implement and administer s. 299.48, Wis. Stats. The proposed emergency rule contains the following summarized requirements:

"Foam" is defined as Class B firefighting foam with intentionally added PFAS, as defined in s. 299.48 (1) (a), Stats.

Prohibitions and use:

The use of Class B firefighting foams with intentionally added PFAS, including for training exercises, is prohibited. The use of foam is allowed for emergency firefighting, fire prevention operations, and testing purposes so long as certain requirements are met. The prohibitions and requirements in this chapter apply to foam that is in concentrate or that is mixed with water, liquids or other substances. Discharge of foam is prohibited to a storm or sanitary sewer or to the environment unless the discharge meets the requirements of this chapter and the discharge is in accordance with all other applicable environmental regulations.

Notification and recordkeeping:

The proposed emergency rule contains notification requirements for persons who use foam for firefighting operations or who discharge foam to the environment as part of testing operations. Any person in possession of foam must maintain records of the amounts of foam kept on site and its safety data sheets.

Storage:

Any person storing foam used for testing purposes shall manage the foam in accordance with safety data sheets and in a manner that will prevent discharges to the environment. This includes self-inspection and spill containment plans, use of leak-proof, closed and labeled containers, and provisions for cleanup of discharges.

Containment:

Any person testing foam, including testing foam effectiveness and fire suppression systems, foam delivery systems and associated equipment or vehicles, must contain the foam in a manner that will prevent discharge of the foam to the environment. This includes: containment that meets industry and national association testing standards; testing and flushing of equipment, systems, and facilities using a containment system capable of capturing, diverting, and storing generated foam; measures to prevent foam that escapes containment from entering surface waters, groundwater, storm sewers or sanitary sewers; and a containment system design that takes into account location and use of the foam, the risk to the environment, the automatic or manually activated design of a foam system, and any other applicable local, state, or federal regulations.

Treatment:

Any person choosing to treat foam in Wisconsin shall ensure treatment is conducted in a manner that will prevent a discharge of foam to the environment, i.e. air, lands or waters of the state. One option for treatment is incineration or thermal destruction, which must be able to destroy PFAS. Prior to operation, a person operating the treatment system must submit documentation to the department that demonstrates the incineration or thermal destruction treatment system can destroy PFAS and reduce or eliminate emissions, in accordance with the standards in the rule.

Other appropriate treatment options include treating foam using technologies specified in the rule, which state that before a person may discharge treated foam directly to waters of the state or to a sanitary sewer, specified technology must be employed that reduces PFAS concentrations to the maximum degree achievable. Appropriate treatment requires system design and operational standards to remove PFAS that include preliminary treatment, filtration, a minimum of three granular activated carbon adsorption units in series, and at least one anion-exchange resin polishing unit to remove trace PFAS compounds. This type of treatment system has been proven through research and real-life application in Wisconsin to remove optimum levels of PFAS. The department may, on a case-by-case basis, approve an alternative treatment technology – or modifications to the specified treatment – if the applicant can demonstrate that the proposed alternative treatment system or modification will achieve treatment equivalent to or better than the system specified in the rule.

The rule requires sampling and monitoring for 14 treatment indicator parameters to measure appropriate, effective removal of PFAS from foam, and allows an option to modify the required monitoring if approved by the department. The indicator parameters are not enforceable limitations under this chapter, but rather are triggers for making operational adjustments for continued effective treatment of PFAS in foam. All analytical sample results for PFAS must be retained for three years and made available to the department upon request. The frequency of sampling may be reduced after a year of data collection if approved by the department. Exceedance of the indicator parameters requires treatment operators to take actions, such as implementing operational changes to restore effective treatment or conduct additional sampling to determine if the exceedances were caused by sampling or laboratory errors.

Disposal:

Any person choosing to dispose of foam or foam contaminated materials generated as result of testing in Wisconsin shall ensure they are treated in accordance with this rule or solidified by mixing with cementitious materials or a comparable process prior to disposal to effectively immobilize the PFAS and restrict leaching or migration. Foam and foam contaminated materials that are disposed of in Wisconsin may only be disposed of at a licensed solid waste facility.

Additional measures for appropriate containment, treatment, and disposal or storage will be considered during the development of a permanent rule. The department will review the periodic sampling data from operators of foam treatment systems to evaluate the effectiveness of treatment specified in the emergency rule. That information will be used to help develop the permanent rule. Regarding the prevention of a discharge of air contaminants from the use of foam with intentionally added PFAS for testing purposes, the department has a process under s. 285.27 (2) (b), Wis. Stats., which may be used to further assess appropriate measures to be implemented in the permanent rule. The department's work on the permanent rule is ongoing.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations:

The federal Defense Authorization Act of 2020 included several PFAS-related provisions, largely because PFAS contamination of water supplies has been identified at or around several military installations. The Act specifies in section 323 that PFAS-containing firefighting foam may only be released for purposes of an emergency response. A non-emergency release of PFAS foam may be made for the purposes of testing of equipment or training of personnel, if complete containment, capture, and proper disposal mechanisms are in place to ensure no foam is released into the environment. The Act requires the military to develop a fluorine-free foam specification by January 31, 2023 and sets a deadline for banning the use on military bases in the future.

The Defense Authorization Act also establishes guidelines for the proper disposal of firefighting foam at military sites and directs the military to develop guidance to address these issues. Specifically, all incineration of firefighting foam containing PFAS chemicals must be conducted at a temperature range adequate to break down PFAS chemicals, while also ensuring the maximum degree of reduction in emission of PFAS chemicals and must be conducted in accordance with the Clean Air Act at a facility permitted to receive the waste. The Act requires the Environmental Protection Agency (EPA) to publish interim guidance on the destruction and disposal of PFAS substances and materials, which is expected before the end of 2020.

The Federal Aviation Administration (FAA) Reauthorization Act of 2018 was passed on October 5, 2018 and states that no later than three years after the date of enactment, the FAA shall no longer require the use of fluorinated chemicals (found in PFAS) to meet the performance standards accepted under federal regulations. As a result of this change, the FAA and FAA-regulated facilities will no longer be required to use firefighting foams that contain PFAS.

State definitions of "environmental pollution" and "discharge" of a "hazardous substance" are not the same as the definition of a hazardous substance in the federal Superfund law and in some other states' laws. When discharged to the environment in Wisconsin, certain PFAS meet the definitions of a hazardous substance and/or environmental pollution under state statutes (s. 292.01, Wis. Stats.). There is no comparative federal law that specifically prohibits the use or discharge of firefighting foam that contains intentionally added PFAS.

7. Comparison with Similar Rules in Adjacent States: Illinois has legislation pending, SB3154, that would, on and after January 1, 2021, prohibit the knowing manufacture, sale, offering for sale, distribution for sale, or distribution for use of a Class B firefighting foam containing intentionally added PFAS. This legislation would also require manufacturers of Class B firefighting foam containing PFAS to register with the Illinois EPA and pay to the EPA an annual registration fee of $5,000. There is also separate legislation pending that would require the creation of groundwater quality standards to limit two PFAS, PFOA (perfluorooctanoic acid) and PFOS (perfluorooctanesulfonic acid) to 70 ppt combined or individually; and that directs the Department of Public Health to establish maximum contaminant levels (MCLs) in public water systems for PFOA and PFOS, and other PFAS.

Indiana's House Bill 1189 was signed into law on March 30, 2020 and prohibits the use of Class B firefighting foam containing an intentionally added PFAS: (1) for training purposes; and (2) for testing purposes, unless the testing facility has implemented appropriate measures to prevent releases of the firefighting foam to the environment. Indiana also has non-binding guidance that sets screening levels for three PFAS per EPA's health advisory level of 70 ppt.

As of January 2020, Iowa has a non-binding guidance "action plan" to identify and minimize PFAS exposures, prevent future releases, and provide education and outreach. HF 2241 failed to pass last session. HF 2241 would have prohibited the manufacture and sale of firefighting foam containing PFAS, prohibit the use of PFAS foam for training purposes, and require manufacturers of firefighter protective equipment to disclose the inclusion of PFAS in their products. Iowa DNR is developing a plan to assess risk to public water supplies from PFAS and may sample the higher risk facilities in the future.

Michigan has created by executive order a PFAS action team to identify, recommend, and implement responses to PFAS contamination. Three bills focused on fire departments and fire fighter activities have moved through the MI legislature: House Bill 4389 establishes a PFAS firefighting foam collection program at the Department of Environment, Great Lakes, and Energy (EGLE), and requires reporting of the use of firefighting foams within 48 hours including the following information: the purpose for the PFAS foam use, where it was used, how much was used, how much water was used, the brand and manufacturer of the product used, and the proposed process for cleanup and disposal. House Bill 4390 bars the use of PFAS firefighting foam in firefighting training, and requires proper training for the emergency use, handling, storage, disposal and cleanup of PFAS foam. House Bill 4391 calls for rulemaking to be promulgated by the Department of Labor to establish best practices for handling and storing PFAS foam by emergency responders, ban the use of PFAS foam for training purposes, and to end the use of PFAS foam for equipment calibration unless certain stringent conditions have been met.

Michigan recently announced it had collected and disposed of over 30,000 gallons of PFAS-containing firefighting foam through a clean sweep type program. Michigan recommends that fire departments use only Class A foam unless Class B foam is needed to protect human life or critical infrastructure, and that they train only with Class A foams.

Minnesota passed legislation that took effect July 1, 2020 requiring that any Class B firefighting foam containing PFAS that is used on a fire must be reported to the State Fire Reporting System within 24 hours. It also prohibits use of PFAS-containing firefighting foam for testing and training unless appropriate containment, treatment, and disposal measures are implemented to prevent releases of foam to the environment. Minnesota has not created additional guidance or rules to describe appropriate containment, treatment, and disposal measures. Minnesota also has non-binding guidance identifying maximum levels of PFBS, PFHxS, PFOS, and PFOA in drinking water.

Ohio has created a PFAS drinking water action plan and is testing all 1,500 public water systems for six PFAS and will notify residents about exposure risks.

8. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen: The department is required by statute to promulgate rules to implement and administer s. 299.48, Wis. Stats., including to determine appropriate containment, treatment, and disposal or storage measures for foam testing facilities.

The department reviewed extensive information from the Interstate Technology Regulatory Council (https://pfas-1.itrcweb.org/) that has developed fact sheets about PFAS and firefighting foam. Additional information was used from foam and PFAS guidance documents created by the U.S. Department of Defense, the National Fire Protection Association, the Commonwealth of Australia, and other states, including the Michigan PFAS Action Response Team. The department also discussed foam management issues with the WI State Fire Chiefs Association, WI Technical College staff (related to fire fighter and inspector training), the WI Airport Management Association, the WI Department of Safety and Professional Services staff, and colleagues in other states.

Ancillary to this rule, existing statute and administrative code requires any person that causes the discharge of a hazardous substance to the environment, subject to s. 292.11 (9), Wis. Stats., to take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands or waters of this state as required by s. 292.11 (3), Wis. Stats. Persons responsible under s. 292.11 (3), Wis. Stats., for discharges of a hazardous substance to the environment shall follow the applicable requirements in chs. NR 700 to 754, Admin. Code, for response action sites.

9. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report: In an effort to develop a conservative estimate, the department assumed a majority of business entities affected by the rule are small businesses. Emails and calls were made to industry experts and facilities with fixed foam systems to determine foam amounts; any existing containment, storage, treatment, and disposal activities; testing activities; and current and potential costs. Industry sectors were also contacted for comments on draft emergency rule language during rule development.

Additional comments on an EIA for the permanent rule will be solicited from potentially affected parties, which include three main types of sectors (that include small businesses and other businesses): entities using foam for emergency fire fighting or fire prevention operations including fixed fire suppression delivery systems or equipment; entities using foam for testing, including foam and foam equipment testing facilities that test firefighting foam effectiveness or test a firefighting foam delivery system or equipment; and entities that contain, treat, and dispose or store foam or foam contaminated materials from a testing facility or generated as a result of testing foam. The anticipated increased costs for these entities include paying for appropriate treatment and disposal of foam or foam contaminated materials in accordance with this rule.

10. Effect on Small Business (initial regulatory flexibility analysis): Small businesses impacted by this rule would be various facilities that use Class B firefighting foam in their fixed fire suppression systems, facilities that test foam, and facilities that provide storage, containment, treatment, or disposal services.

Storage: minimal additional economic impact expected; new requirements for facilities may lead to the purchase of additional storage/containers needed for foam, additional labor costs associated with labeling and inspection, and the purchase of materials to prevent discharge to the environment. There will be additional costs associated with these requirements but these costs are not anticipated to be significant. Direct economic estimates based on the types of storage, the expected storage volume, and labor costs will be solicited and evaluated by the department in advance of the permanent rule.

Containment, treatment and disposal: moderate economic impact expected, additional estimates under solicitation and evaluation by the department. It is estimated that there are approximately 150-200 fixed fire suppression systems within public and private facilities that utilize Class B firefighting foam. A limited survey of facilities with fixed-foam systems indicated that these fixed systems are primarily in areas with existing containment, resulting in minimal to no economic impact. Industry experts estimated that system testing and resultant foam disposal costs will increase for these facilities, and cost approximately $3,000 to $20,000 per facility. Assuming 200 facilities in the State, the statutory and rule requirements would range in impact from approximately $600,000 to $4,000,000 per year, with the midpoint estimate of $2,300,000. However, costs are expected to lessen over time with adoption of alternative methods such as surrogate and water equivalency testing and using replacement foams that do not contain PFAS. Although they are not small businesses, the department is aware of only a few foam manufacturing facilities in Wisconsin that would conduct testing. One manufacturer is developing its own treatment facility and others may be using contractors to collect and manage foam generated from testing. The foam manufacturer building a new testing facility expressed to the department that it had plans to transition from manufacturing foam with PFAS, to manufacturing and testing foams that are PFAS-free.

For the purposes of this small business analysis, the department assumes two foam treatment facilities (contractors) will be active in Wisconsin that are small businesses. (One other treatment facility is a manufacturer of foam and is not a small business.) These treatment facilities will accept foam used for testing purposes and must appropriately store, contain, treat and dispose of the foam. To ensure appropriate treatment measures, the rule requires periodic sampling for detection of PFAS compounds that is estimated to cost around $300 per week or $15,600 per year. This sampling could total $31,200 per year; however, such sampling may already be occurring at these facilities. If that is the case, only a portion of the total of $31,200 would be attributable to the rule provisions. Therefore, the estimated economic impact of this rule on small businesses is $2,331,200 per year with expected annual decreases as Class B firefighting foams that contain intentionally added PFAS are replaced in current applications with alternative fire suppression products.

Estimated costs for management, containment and proper disposal of firefighting foams with intentionally added PFAS, are anticipated to be less than the cost to clean and remediate uncontrolled discharges to the environment and subsequent remediation. This rule does not prohibit the manufacture, sale, or distribution of Class B firefighting foam that contains intentionally added PFAS.

11. Agency Contact Person: Kate Strom Hiorns; Department of Natural Resources, PO Box 7921,
Madison, WI 53707-7921; KathrynM.StromHiorns@wisconsin.gov; (608) 261-8449

12. Place where comments are to be submitted and deadline for submission:
Written comments may be submitted at the public hearings, by regular mail, or by email to:

Kate Strom Hiorns – WA/5
Department of Natural Resources
PO Box 7921
Madison, WI 53707-7921
(608) 261-8449
KathrynM.StromHiorns@wisconsin.gov

Written comments may also be submitted to the department at DNRAdministrativeRulesComments@wisconsin.gov.

Hearing dates and the comment submission deadline are to be determined.

Section NR 159 is created to read:

CHAPTER NR 159
MANAGEMENT OF CLASS B FIREFIGHTING FOAM

NR 159.01 Purpose. The purpose of this chapter is to establish the appropriate containment, treatment, and disposal and storage measures when testing Class B firefighting foam with intentionally added perfluoroalkyl or polyfluoroalkyl substances (PFAS); to establish consistent, uniform standards and procedures to limit the discharge of Class B firefighting foams, unless the foam is used in emergency firefighting or fire prevention operations; and to clarify recordkeeping and notification requirements. This chapter is adopted under s. 299.48, Stats.

NR 159.02 Applicability. (1) This chapter applies to any person conducting testing of foam with intentionally added PFAS, including calibration testing, conformance testing, or fixed-system testing, to evaluate its effectiveness or testing of a firefighting foam delivery system or equipment.

(2) This chapter applies to any person that uses or discharges foam containing intentionally added PFAS including use as part of an emergency firefighting or fire prevention operation.

(3) This chapter applies to any person that contains, treats, and disposes or stores foam or foam contaminated materials from a testing facility or generated as a result of testing foam.

(4) The prohibitions and requirements in this chapter apply to foam that is in concentrate or that is mixed with water, liquids or other substances. No person may discharge foam to a storm or sanitary sewer or to the environment unless the discharge meets the requirements of this chapter and the discharge is in accordance with all other applicable environmental regulations.

(5) This chapter may not be construed as prohibiting the manufacture, sale, or distribution of foam that contains intentionally added PFAS.

NR 159.03 Definitions. In this chapter:

(1) "Calibration testing" means the comparison of measurement values delivered by a device under testing with those of a calibration standard of known accuracy. These testing activities are typically associated with the installation, maintenance, and repair of emergency fire suppression and firefighting equipment.

(2) "Class B firefighting foam" has the meaning specified in s. 299.48 (1) (a), Stats.

Note: Under s. 299.48 (1) (a), Stats., "Class B firefighting foam" means a foam designed for use on a flammable liquid fire, which may include a dual action Class A and B foam.

(3) "Conformance testing" means testing or other activities that determine whether a process, product, or service complies with the requirements of a specification, technical standard, contract, or regulation.

(4) "Container" means any device in which a material is stored, transported, treated, disposed of, or otherwise handled.

(5) "Containment" means use of a container or secondary containment structure or device to keep foam under control or within boundaries.

(6) "Department" means the department of natural resources.

(7) "Discharge" has the meaning specified in s. 292.01 (3), Stats.

Note: Under s. 292.01 (3), Stats., "discharge" means, but is not limited to, spilling, leaking, pumping, pouring, emitting, emptying or dumping.

(8) "Dispose" or "disposal" means the discharge, deposit, injection, dumping or placing of any solid waste into or on any land or water.

(9) "Emergency firefighting" means the act of attempting to prevent the spread of and extinguish unwanted fires.

(10) "Environment" has the meaning specified in s. NR 700.03 (18).

Note: Under s. NR 700.03 (18), "environment" means any plant, animal, natural resource, surface water (including underlying sediments and wetlands), groundwater, drinking water supply, land surface and subsurface strata, and ambient air within the state of Wisconsin or under the jurisdiction of the state of Wisconsin.

(11) "Fire prevention operations" means measures and practices directed toward the prevention and suppression of unwanted fires.

(12) "Fire suppression system" means a system used to extinguish or prevent the spread of fire through the application of a substance.

(13) "Fixed system" means a permanently installed fire suppression system designed for use on the specific fire hazards they are expected to control or extinguish.

(14) "Foam" means "Class B firefighting foam" as defined under s. 299.48 (1) (a), Stats.

(15) "Foam contaminated materials" means any material that contains PFAS that is generated as a result of foam storage, containment, or treatment, including treatment media, equipment used to clean up firefighting foams, booms, filters, infrastructure, or other debris.

(16) "Intentionally added PFAS" means PFAS is a constituent of the foam added during the manufacturing process.

(17) "Method detection limit" means the minimum measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results. The method detection limit is generated as defined in s. NR 149.03 (46).

(18) "Person" has the meaning specified in s. 299.01 (10), Stats.

Note: Under s. 299.01 (10), Stats., "person" means an individual, owner, operator, corporation, limited liability company, partnership, association, municipality, interstate agency, state agency or federal agency.

(19) "PFAS" has the meaning specified in s. 299.48 (1) (b), Stats.

Note: Under s. 299.48 (1) (b), Stats., "PFAS" means a perfluoroalkyl or polyfluoroalkyl substance.

(20) "PFAS treatment indicator parameter" means a PFAS substance for which a numeric PFAS treatment action level has been established under s. NR 159.08, Table 1, to indicate the performance of the foam treatment system in preventing foam discharges to the environment.

(21) "Safety data sheet" means documents that contain safety and safe handling information in respect of the product, including protection information regarding human health and may include information on protection of the environment.

(22) "Storage" means storing on a temporary basis for future use or future treatment or disposal in such a manner as not to constitute ultimate disposal.

(23) "Testing" has the meaning specified in s. 299.48 (1) (c), Stats.

Note: Under s. 299.48 (1) (c), Stats., "testing" means the testing of a firefighting foam to evaluate its effectiveness and testing of a firefighting foam delivery system or equipment.

(24) "Training" has the meaning specified in s. 299.48 (1) (d), Stats.

Note: Under s. 299.48 (1) (d), Stats., "training" means providing first-hand field experience to a person who may use a firefighting foam as part of an emergency firefighting or fire prevention operation.

(25) "Treatment" means any method, technique or process, including thermal destruction, that changes the physical, chemical or biological character or composition of a contaminant so as to immobilize, remove, or destroy the contaminant.

NR 159.04 Prohibition and exemptions. (1) Except as provided under sub. (2), no person may use or otherwise discharge, including for training purposes, a Class B firefighting foam that contains intentionally added PFAS.

(2) All of the following actions are exempt from the prohibition under sub. (1):

(a) The use or discharge by any person of a Class B firefighting foam that contains intentionally added PFAS as part of an emergency firefighting or fire prevention operation.

(b) The use by any person of Class B firefighting foam that contains intentionally added PFAS for testing purposes, including calibration testing, conformance testing, or fixed system testing, if the testing facility has implemented appropriate containment, treatment, and disposal or storage measures, as specified in ss. NR 159.06 to 159.08, to prevent discharges of the foam to the environment.

Note: Under s. 299.48 (3) (b), Stats., appropriate containment, treatment, and disposal or storage measures may not include flushing, draining, or otherwise discharging foam into a storm or sanitary sewer.

Note: A person responsible under s. 292.11 (3), Stats., for discharges of PFAS to the environment shall follow the applicable requirements in chs. NR 700 to 754 for response action sites.

NR 159.05 Notification and recordkeeping. **(1)** Notification. A person that uses or discharges foam shall do all of the following:

(a) Notify the department, according to ch. NR 706, of the use or discharge of foam as part of an emergency firefighting or fire prevention operation immediately or as soon as practicable without hindering emergency firefighting or fire prevention operations.

(b) Notify the department immediately, according to ch. NR 706, of any discharge of foam to the environment resulting from testing purposes.

Note: A person responsible under s. 292.11 (3), Stats., for discharges of PFAS to the environment is subject to the applicable requirements in chs. NR 700 to 754, including notification requirements in ch. NR 706 and immediate action responsibilities to contain, treat, remove or halt the discharge in accordance with ch. NR 708.

(2) Recordkeeping. Any person in possession of foam shall retain foam safety data sheets and make them available to the department for examination upon request.

NR 159.06 Storage. A person that uses foam for testing purposes shall store foam in accordance with manufacturer instructions and safety data sheets, and in a manner that shall prevent discharge of foam to the environment. Appropriate storage of foam by a person shall include all of the following:

(1) A quarterly inspection program for detecting leaks in storage containers and a plan to undertake response measures to halt, contain, remove and treat or dispose of foam discharges.

(2) Posting of safety data sheets in a visible location in the storage area.

(3) Containers shall be clearly labeled to indicate the contents of the container and be kept in a manner that allows easy detection of signs of leakage.

(4) Containers for storage and transport shall be fabricated from or lined with materials compatible with foam and designed to prevent evaporation of foam, including containers direct from the manufacturer.

(5) Material for absorbing any discharges of foam shall be maintained onsite.

(6) Any drains in a storage area shall be blocked from any connection to a sanitary or storm sewer.

NR 159.07 Containment. A person that uses foam for testing purposes shall ensure that appropriate containment is in place during testing of foam or testing of fire suppression systems, foam delivery systems, or foam equipment to prevent discharge of foam to the environment. Appropriate containment shall include all of the following:

(1) Use of water or surrogate solutions, testing equipment indoors, spraying into drums, lined pits, or other containment equipment, and testing with closed-loop systems, where consistent with industry standards and other regulations governing foam testing.

Note: Other regulations may include chs. SPS 314 and 361 to 366 which incorporate standards of the National Fire Protection Association, Federal Aviation Administration requirements, and other applicable industry and national association standards.

(2) Testing and flushing of foam testing equipment, systems, and facilities conducted with a containment system capable of capturing, diverting, and storing generated foam.

(3) Testing that employs measures to prevent foam that escapes containment from entering surface waters, groundwater, storm sewers or sanitary sewers.

(4) Containment system design that takes into account location and use of the foam, the risk to the environment, the automatic or manually activated design of a foam system, and any other applicable local, state, or federal regulations.

NR 159.08 Treatment and disposal. A person that uses foam for testing purposes or that conducts treatment or disposal of foam that was used for testing purposes may employ onsite or offsite measures for treatment, disposal, or a combination of treatment and disposal for foam and any foam contaminated materials. Treatment and disposal in the state of Wisconsin of foam used for testing purposes shall be conducted in a manner that prevents discharge of foam to the environment under all of the following requirements:

(1) Treatment. (a) *Incineration or thermal destruction*. Incineration or thermal destruction of foam or foam contaminated materials shall be conducted at a temperature range and residence time sufficient to destroy PFAS while also ensuring the maximum degree of reduction in emission of PFAS, including elimination of such emissions when achievable. Prior to any person operating an incineration or thermal destruction treatment system under this subsection, a person shall submit documentation to the department that demonstrates the incineration or thermal destruction treatment system meets these requirements.

(b) *Other treatment.* 1. 'Best available technology' If treatment other than that specified in par. (a) is proposed, the treatment shall, at a minimum, satisfy all of the following design and operational standards:

a. Treatment shall include preliminary treatment prior to granular activated carbon adsorption to remove compounds that may reduce adsorption capacity of granular activated carbon or interfere with PFAS removal. The preliminary treatment system may include clarifiers, bag filter units, clay filter units, or other similar treatment.

b. Following preliminary treatment under subd. 1. a. and prior to granular activated carbon adsorption under subd. 1. c., the treatment shall include cloth filtration, ultrafiltration, or filtration of a finer pore size.

c. Following filtration under subd. 1. b., the treatment shall include a minimum of 3 granular activated carbon adsorption units in series. Granular activated carbon adsorption units shall be optimized for PFAS removal. The granular activated carbon adsorption units shall have a cumulative minimum empty bed contact time of 30 minutes. The lead granular activated carbon adsorption unit's media shall be replaced at a frequency that allows for optimal PFAS removal but no less frequently than once per treatment of each 10,000 bed volumes. Following media replacement, the lead unit shall be moved to the lag unit position, with each of the other units moved forward one position in the series. The granular activated carbon media shall be derived from bituminous coal unless the discharger utilizes a more frequent media replacement schedule appropriate for that media and receives approval under subd. 2.

d. Treatment shall include at least one anion-exchange resin polishing unit to remove trace PFAS compounds.

e. Sampling ports shall be provided immediately after each treatment unit, including between granular activated carbon adsorption units.

f. If any sludges or solids or foam contaminated materials are produced during any stages of treatment, they shall be solidified by mixing with cementitious materials or a comparable process prior to disposal at a licensed solid waste facility. Sludges or solids generated during the treatment process may not be disposed of via land application.

2. 'Alternative treatment technology.' The department may, on a case-by-case basis, approve an alternative treatment technology to any of the treatment, design, and operation requirements under subd. 1., if the applicant can demonstrate that the proposed alternative treatment system will achieve treatment equivalent to or better than a system specified under subd. 1. Requests for approval of alternative requirements shall be made in writing and accompanied by written justification including performance data from pilot installations if requested by the department.

Note: Alternative treatment technologies may include yet-to-be-developed treatment solutions that improve upon the best available technology, existing alternative systems such as reverse osmosis with treatment of reject water, or modifications to the best available technology such as use of 2 granular activated carbon units with tailored operation and management plans to ensure prevention of breakthrough, or use of non-bituminous granular activated carbon media with an appropriately adjusted minimum empty bed contact time.

3. 'Treatment systems review.' Construction or modification of any treatment system subject to this paragraph requires plan review and approval prior to commencement of construction, in accordance with ch. NR 108 and s. 281.41, Stats.

4. 'PFAS treatment indicator parameters, sampling, and recordkeeping.' If treatment other than that specified under par. (a) is used, the person responsible for treatment of foam shall monitor and sample the treated wastewater for the foam indicator parameters listed in Table 1 or in a modified list of indicator parameters under subd. 6 to ensure effective treatment of foam which includes removal of PFAS. The treatment indicator parameter action levels included in Table 1 or in any modified list are not enforceable effluent limitations under this chapter, but rather are values that shall be used by the person treating foam to gauge appropriate treatment effectiveness, and to trigger actions under subd. 5 that are needed to ensure that a treatment system continues to optimize PFAS removal. Treated wastewater samples shall be collected at least weekly during periods of discharge, although this frequency may be reduced after a year of data collection if the department determines that data indicate that breakthrough of PFAS occurs less frequently than weekly. All analytical sample results for PFAS shall be retained for 3 years and made available to the department upon request. In accordance with subd. 6, the person responsible for the treatment of foam may request a modification to the Table 1 list of PFAS indicator parameters that are required for sampling.

Table 1
PFAS Treatment Indicator Parameters

Indicator Parameter	Action Level (ng/L)
4:2 Fluorotelomer Sulfonic Acid (4:2 FTS)	2.1
6:2 Fluorotelomer Sulfonic Acid (6:2 FTS)	2.4
8:2 Fluorotelomer Sulfonic Acid (8:2 FTS)	2.3
Perfluorobutanoic Acid (PFBA)	960
Perfluorobutanesulfonic Acid (PFBS)	1.8
Perfluoropentanoic Acid (PFPeA)	197
Perfluoropentanesulfonic Acid (PFPeS)	2.4
Perfluorohexanoic Acid (PFHxA)	2.4
Perfluorohexanesulfonic Acid (PFHxS)	1.7
Perfluoroheptanoic Acid (PFHpA)	3.2
Perfluoroheptanesulfonic Acid (PFHpS)	2.0
Perfluorooctanoic Acid (PFOA)	2.1
Perfluorooctanesulfonic Acid (PFOS)	1.3
Perfluorooctanesulfonamide (PFOSA / FOSA)	4.9

Note: The treatment indicator parameters in this table or any modified list under subd. 6 are not enforceable effluent standards or limitations under this chapter. These parameters are based on treatment performance data from similar projects in Wisconsin and are believed to be achievable through optimized operation of the best available treatment technology required under s. NR 159.08 (1) (b). These parameters exclusively apply to implementation of the requirements of this chapter (see s. NR 159.02). These parameters are not water quality standards or effluent standards established under ch. 283, Stats. Any discharge of treated foam to a sanitary sewer will require the approval from the owner of the publicly owned treatment works that will receive the discharge and may be subject to additional limitations and monitoring requirements. Any discharge of treated foam to waters of the state, including a discharge of treated foam through a storm sewer, requires Wisconsin Pollutant Discharge Elimination System permit coverage under ch. 283, Stats., and may be subject to additional monitoring requirements and additional limitations for PFAS and other pollutants in the permit pursuant to the requirements of ch. 283, Stats., and regulations promulgated under that chapter. The department has authority to require monitoring for PFAS parameters and other pollutants in Wisconsin Pollutant Discharge Elimination System permits under s. 283.55, Stats.

5. 'PFAS treatment indicator parameter responses.' The treatment system shall be operated to minimize the level of PFAS substances in effluent, and a person operating a treatment system shall take actions under this subdivision to maintain appropriate and effective foam treatment. Actions taken under this subdivision shall be documented in writing, and that documentation shall be retained for at least 3 years and made available to the department upon request. If the concentration of PFAS in a wastewater sample exceeds a treatment indicator parameter action level listed in Table 1 or treatment indicator parameter level in a modified list approved under subd. 6, the person responsible for the treatment of foam shall take one or more of the following actions until the indicator parameter action level is achieved again:

a. Hold the treated water until further sampling, treatment, or both confirms that treatment indicator parameter action levels are attained.

b. Replace the granular activated carbon media within the lead carbon vessel, move that vessel to the lag position, and move all other vessels forward one position in the series.

c. Modify the design or operation of the treatment system to prevent discharges of foam with the goal of compliance with the treatment indicator parameters in Table 1 or in a modified list approved under subd. 6.

6. 'Request to modify sampling requirements. The person responsible for treatment of foam may request modification of the sampling requirements in sub. 4. based on the documented nature and concentration of foam being tested. The request shall include sampling and analysis of the foam that will be discharged and data documenting efficiency of removal by the treatment system. Samples shall be representative of daily operations and performed when the full range of PFAS are likely to be present in maximum concentrations or quantities. The department may approve modified sampling requirements if the applicant demonstrates that any indicator parameters listed in Table 1 that will be excluded will not be present in the effluent, and that the proposed alternative or remaining parameters are sufficient to gauge appropriate treatment effectiveness and to trigger actions needed to ensure that the treatment system continues to optimize PFAS removal. The department will notify the person requesting a modification in writing of its decision.

(2) Disposal. Appropriate foam and foam contaminated materials disposal employed by a person shall comply with all of the following requirements:

(a) Unless treated in accordance with sub. (1), PFAS in foam and foam contaminated materials shall be effectively immobilized through solidification by mixing with cementitious materials or a comparable process prior to disposal.

(b) Foam and foam contaminated materials treated in accordance with sub. (1) or managed in accordance with sub. (2) (a) in the state shall be disposed of at a licensed solid waste facility.

NR 159.09 Lab analyses and samples for PFAS in foam. (1) Laboratory analyses of any treated foam samples collected shall report results to the testing laboratory's method detection limit. Laboratories shall use procedures suitable for the matrix, potential interferences, and expected level of PFAS in the sample. All chemical and physical analyses for which accreditation is available under ch. NR 149 shall be conducted by a laboratory accredited under ch. NR 149.

(2) Upon request of the department, persons or testing facilities subject to this chapter shall provide the department with any foam safety data sheets, sampling, and analyses of the foam stored, tested, treated, disposed of, contained, or used at the facility or treated or disposed of at another facility.

Section 2. Statement of Emergency. Section 2 (1) of 2019 Wisconsin Act 101 states that the department shall promulgate rules under s. 299.48 (5), Stats., no later than the first day of the 7th month beginning after the effective date of the subsection. Emergency rules promulgated under this subsection remain in effect until 3 years after the effective date, or the date on which permanent rules take effect. Notwithstanding s. 227.24 (1) (a) and (3), Stats., the department is not required to provide evidence that promulgating a rule under this subsection as an emergency rule is necessary for the preservation of public peace, health, safety, or welfare and is not required to provide a finding of emergency for a rule promulgated under this subsection.

Section 3. Effective Date. This rule takes effect upon publication in the official state newspaper, as provided in s. 227.24(1)(c), Stats., and shall remain in effect until 3 years after the effective date of 2019 Wisconsin Act 101, s. 2 (1) or the date on which permanent rules take effect, whichever is sooner.

Section 4. Board adoption. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on October 28, 2020.

Dated at Madison, Wisconsin ______________________.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

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For Preston D. Cole, Secretary

PUB: WSJ: December 04, 2020
#28893-1 **WNAXLP**