



NHDES Development of BACT Requirements for Air Emissions relative to Groundwater Impacts

Catherine Beahm, Administrator, Air Resources Division



NHDES Development of BACT Requirements for Air Emissions relative to Groundwater Impacts

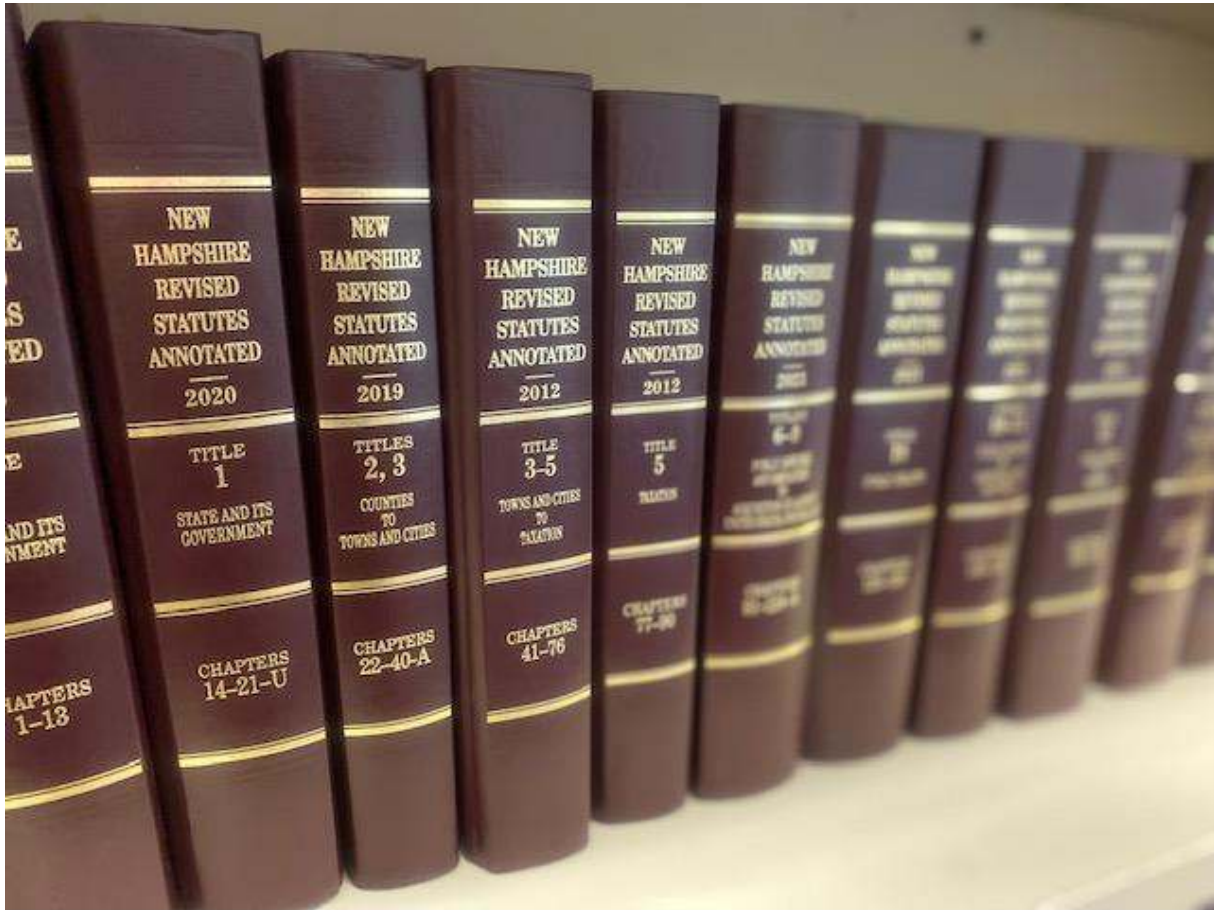


- NH Regulatory Basis (RSA 125-C:10-e)
- General Overview of Draft Rule
- Stakeholder Meetings
- Tentative Rulemaking Schedule



Source: Saint-Gobain Air Pollution Control Equipment Monitoring Plan (PL-EHS-003)

RSA 125-C:10-e Requirements for Air Emissions of PFAS Impacting Soil and Water



- New, existing, and modified devices that emit PFAS or precursors to the air
- Existing devices: Caused or contributed to an exceedance of an AGQS or SWQS as a result of deposition
- New or modified devices: Potential to cause or contribute to an exceedance of an AGQS or SWQS as a result of deposition
- Required to install Best Available Control Technology
- NHDES rulemaking authority (RSA 125-C:4)

Source: NHDES photo

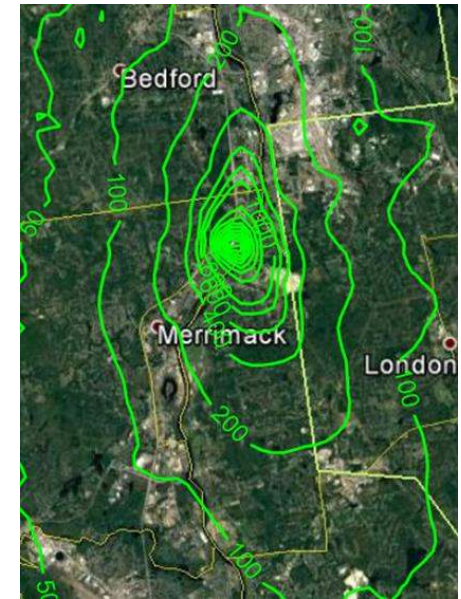
Draft Rule: New Hampshire Best Available Control Technology (BACT)



- Proposing a new chapter
- Similar approach to recent permit issued by NHDES under this statute
- RSA 125-C:10-e specifically lists the following requirements that must be part of the rules:
 - (a) The determination of air contaminants subject to regulation.
 - (b) Applicability thresholds.
 - (c) Determination of best available control technology.
 - (d) Procedures to determine potential impacts of the deposit of such contaminants from the air on soils or water resources.
 - (e) The content of the application including an analysis of best available control technology for controlling emissions.
 - (f) The content of any permit issued including inspection, testing, and reporting requirements, as applicable, to ensure the conditions of the permit are met.



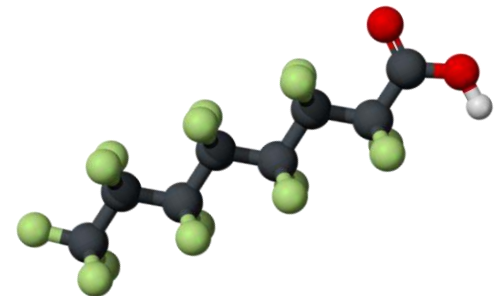
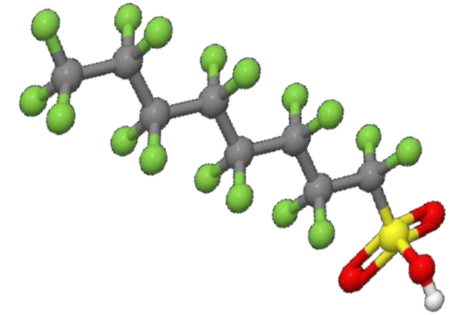
Source: NHDES photos



Air Contaminants Subject to Regulation

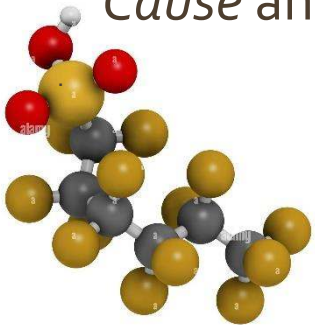


- PFAS for which an AGQS or SWQS exists in NH
(Currently NH has AGQS for PFOA, PFOS, PFNA, PFHxS)
- Precursors means any substance that has been shown by sound science to be transformed into a PFAS under ambient conditions reasonably expected to occur in NH [M.G. Evich *et al.*, Per- and polyfluoroalkyl substances in the environment. *Science* 375, eabg9065 (2022). DOI: 10.1126/science.abg9065]
- Because of potential for new or modified AGQS or SWQS, NHDES is considering the inclusion of references to Env-A 609.19 *Permit Reopenings for Cause* and Env-A 612.07 *Department Proposal to Amend a Permit*



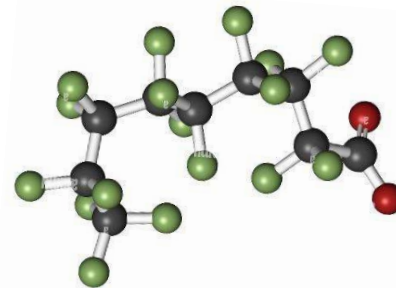
Molecular structures for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS)

Source: Chempider



Molecular structures for perfluorohexane sulfonate (PFHxS) and perfluorononanoic acid (PFNA)

Source: Alamy



Applicability thresholds



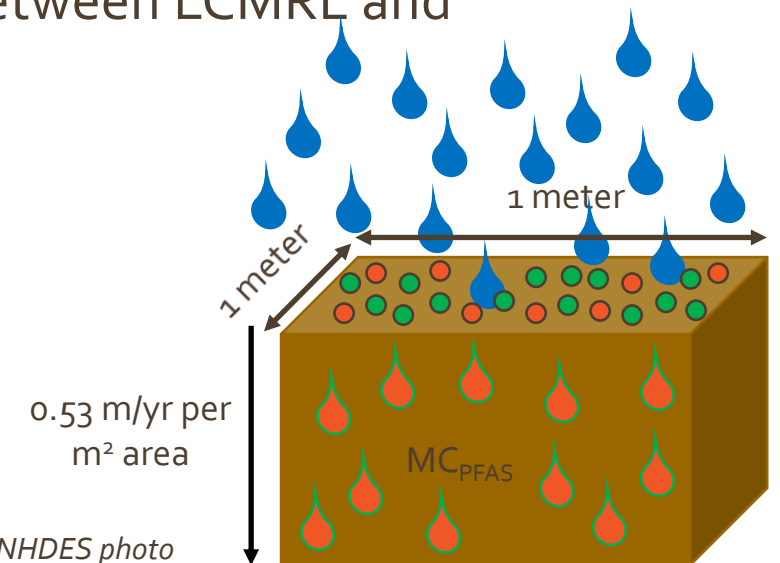
- Cause = air emissions from a device that when deposited on the soil/surface water would result in a concentration of water infiltrating the ground that exceeds AGQS/SWQS

$AGQS_{PFOA} = 12 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $AGQS_{PFOS} = 15 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $AGQS_{PFNA} = 11 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $AGQS_{PFHxS} = 18 \mu\text{g}/\text{m}^3 \text{ (ppt)}$

- Contribute = air emissions from a device that when deposited on the soil/surface water would result in a concentration of water infiltrating the ground that is between LCMRL and AGQS/SWQS

$LCMRL_{PFOA} = 3.4 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $LCMRL_{PFOS} = 4.4 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $LCMRL_{PFNA} = 4.8 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $LCMRL_{PFHxS} = 3.7 \mu\text{g}/\text{m}^3 \text{ (ppt)}$

- LCMRL = lowest concentration minimum reporting limits from EPA Method 533 PFAS for drinking water



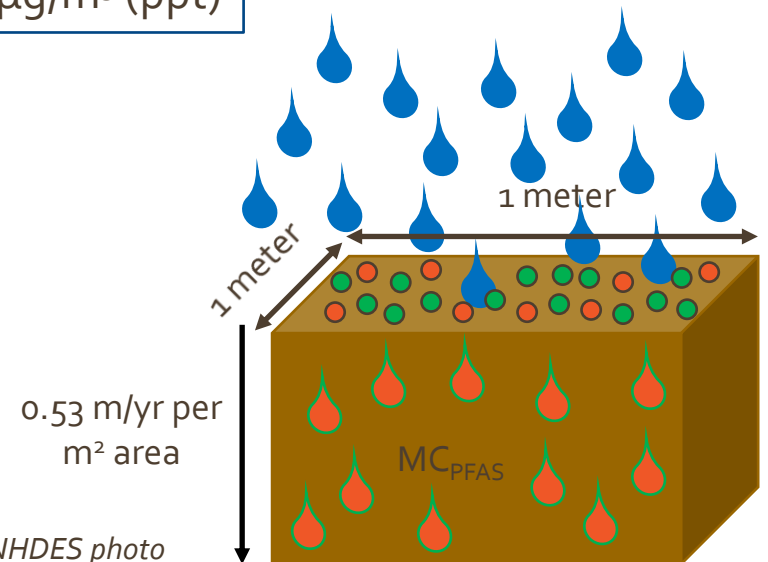
Source: NHDES photo

Post BACT Control Emission Limitations



- Post-BACT = air emissions from the device post-BACT that when deposited on the soil/surface water are limited to a level that would not result in a concentration of water infiltrating the ground that exceeds the LCMRL

$\text{LCMRL}_{\text{PFOA}} = 3.4 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $\text{LCMRL}_{\text{PFOS}} = 4.4 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $\text{LCMRL}_{\text{PFNA}} = 4.8 \mu\text{g}/\text{m}^3 \text{ (ppt)}$
 $\text{LCMRL}_{\text{PFHxS}} = 3.7 \mu\text{g}/\text{m}^3 \text{ (ppt)}$



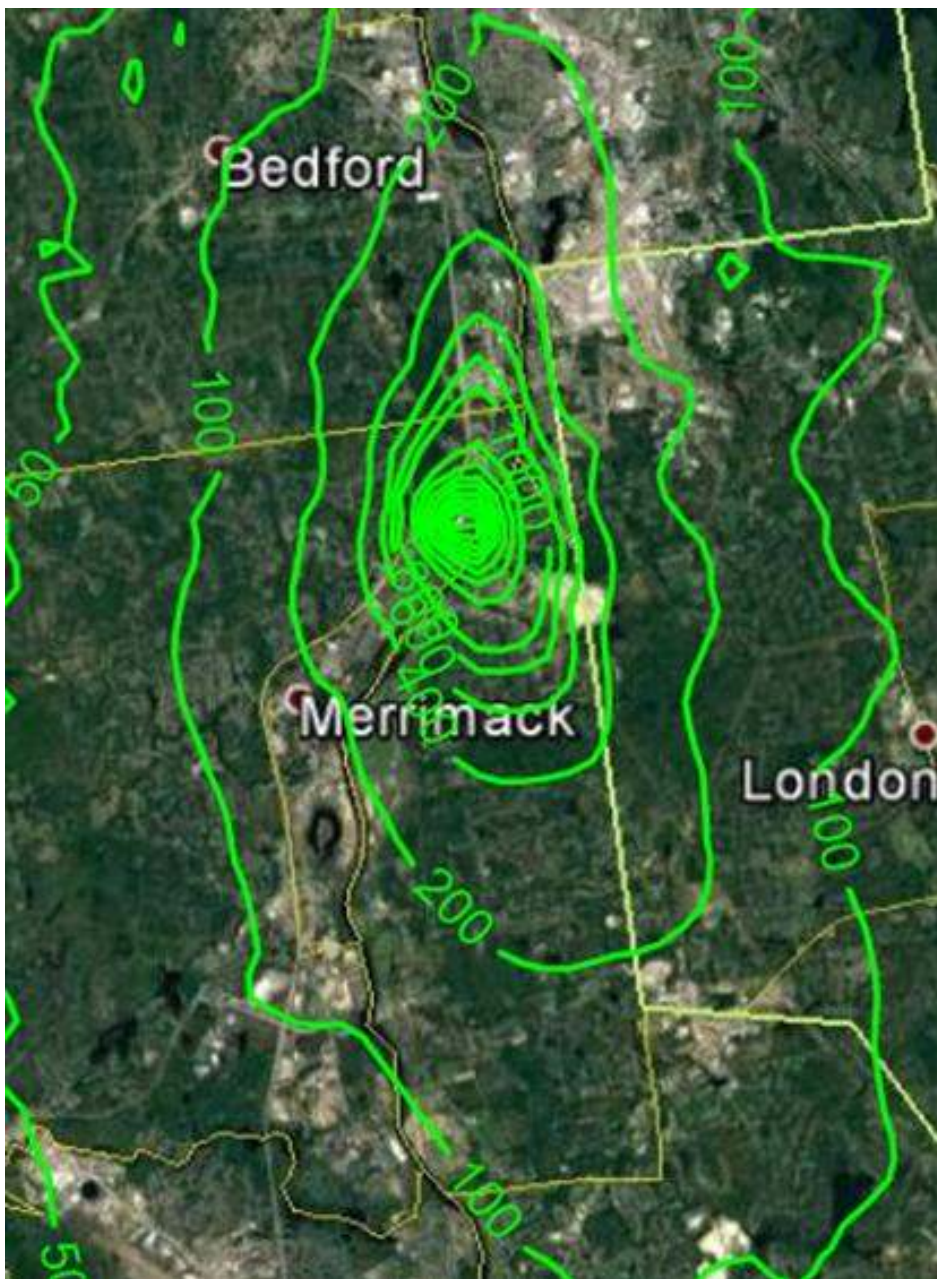
Source: NHDES photo



Source: Saint-Gobain Air Pollution Control Equipment Monitoring Plan (PL-EHS-003)



Source: NHDES photo



Source: NHDES photo

Deposition Modeling Procedures

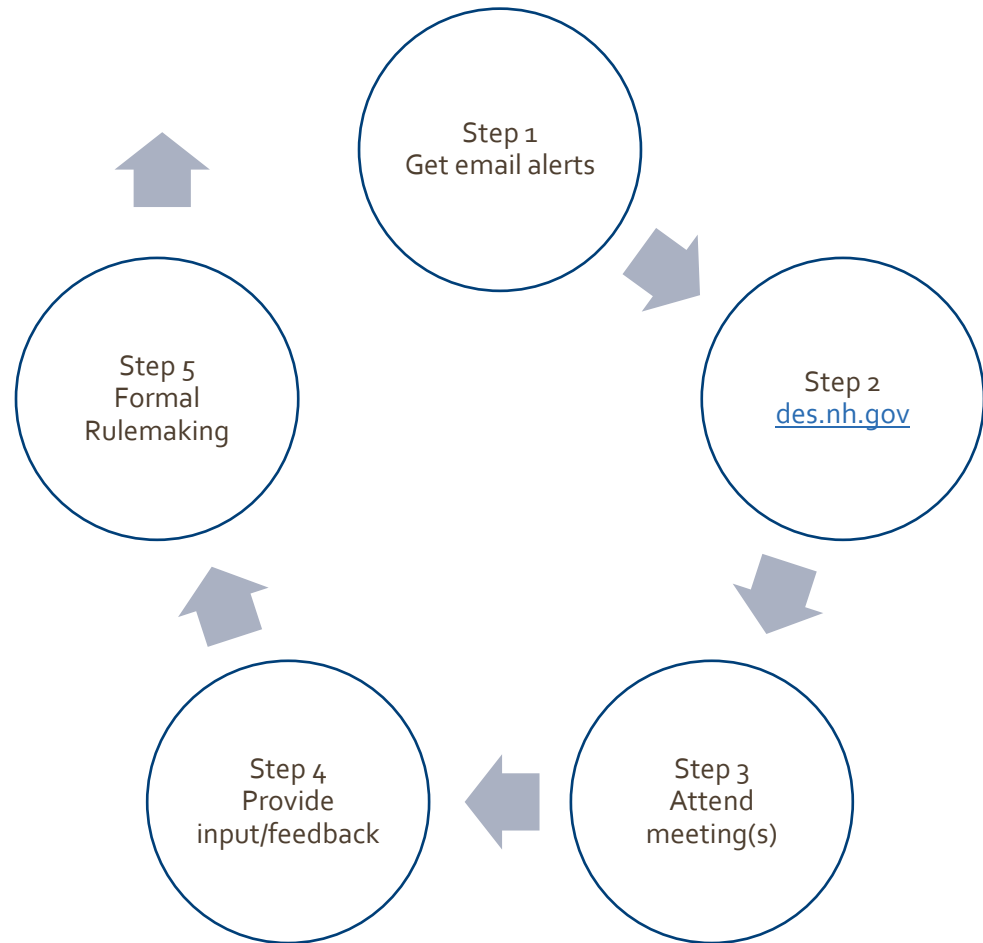
Env-A 600 contains air dispersion modeling requirements

The department is drafting deposition modeling requirements to be included in the draft NH BACT rule

Stakeholder Meetings/Process



- Internal work on a draft rule is in process
- Subscribe to [e-news](#) and select NH Air Rulemaking Notices
- Watch NHDES website for draft rule and information on stakeholder meetings
 - [Main Air Resources page](#)
 - [PFAS Air Emission Sources page](#)
- Attend stakeholder meeting(s) [starting October/November 2023]
- Opportunity for stakeholders to provide input/feedback
- Draft “initial proposal” to begin the formal rulemaking process



Tentative Formal Rulemaking Schedule

Draft Initial Proposal

Air Resources Council

File Rule and Fiscal Impact Statement with Legislative
Budget Assistant

File Rulemaking Notice

Public Notice/Public Hearing

Process Public Comments and Prepare Final Proposal

Joint Legislative Committee on Administrative Rules



Thank you

Cathy Beahm

Catherine.A.Beahm@des.nh.gov

