PART 1: (April 23rd) - What is PFAS and Connecticut’s Response

PART 2: (April 30th) - How Does PFAS get into the Environment and how is it Regulated and Treated

PART 3: (May 7th) - Litigation and Municipality Response to PFAS
PART 1: What is PFAS and Connecticut’s Response
Todays’ Presenters

CT - Department of Public Health (DPH)

- **Ms. Lori Mathieu** – Connecticut’s Public Drinking Water Administrator, serving as the Public Health Branch Chief with the Connecticut Department of Public Health’s Environmental Health and Drinking Water (EHDW) Branch.
- **Ms. Cheryl Fields** - Toxicologist for the Environmental and Occupational Health Assessment Program at the State of Connecticut Department of Public Health
- **Ms. Patricia Bisacky** - Environmental Analyst 3, Department of Public Health Drinking Water Section Source Assessment and Protection Unit.

CT – Department of Energy and Environmental Protection (DEEP)

- **Mr. Raymond Frigon** – Assistant Director of DEEP’s Remediation Division within the Bureau of Water Protection and Land Reuse.
- **Ms. Shannon Pociu** – Environmental Analyst 3 of DEEP’s Remediation Division within the Bureau of Water Protection and Land Reuse.
- **Ms. Anna Hagstrom** – Connecticut Academy of Science and Engineering Science and Technology Policy Fellowship Program.
PFAS BASICS AND THE STATE OF CONNECTICUT'S PFAS ACTION PLAN AND IMPLEMENTATION

Connecticut Conference of Municipalities
PFAS Workshop Series
Webinar 1
April 23, 2020
11:00-12:00

DEPARTMENT of PUBLIC HEALTH
DEPARTMENT of ENERGY AND ENVIRONMENTAL PROTECTION
Agenda

• Introduction to DPH and DEEP Programs
• PFAS Overview
• PFAS Health Effects
• Overview of CT PFAS Action Plan
• Recent Developments

PFOS

PFOA
INTRODUCTION
Environmental Health and Drinking Water Branch

- Provides health assessment, toxicology reviews, and public messaging
- Provides education and outreach for residents
- Provides education and technical assistance to owners of private wells
- Implements the Safe Drinking Water Act
- Regulatory authority for Connecticut’s 2,500 public water systems serving 2.8 million people
- Authority over proactive laws & high quality water that protect human health

Katherine A. Kelley
Public Health Laboratory

- Provides drinking water analyses (currently exclusive of PFAS substances)
Regulation of Discharges to the Environment

- Monitors and permits discharges to water, air, and the ground to prevent harm to human health and the environment
- Inspections to ensure compliance with state and federal environmental laws
- Regulates disposal of wastes

Pollution Prevention

- Recommends ways to prevent or minimize pollution
Remediation Standard Regulations

- Sets standards for the cleanup of soil and groundwater at contaminated sites to protect human health and the environment

Pollution Source Oversight

- Authority to require cleanup
- Authority to require provision of safe drinking water to impacted areas by responsible party or municipality
PFAS OVERVIEW
PFAS Overview: What are PFAS?

PFAS = Per- and Polyfluoroalkyl Substances

- Over 7,000 chemicals
- Developed in the 1940s
- Ubiquitous in consumer products and industry
- Common products
  - Non-stick cookware
  - Waterproof apparel
  - Stain-resistant carpet
  - Grease-resistant food packaging
- PFOA and PFOS most well-known

**Good**
- Repels oil, grease, water, heat
- Stable

**Bad**
- Extremely persistent, resists degradation
- Bioaccumulative
- Toxic
- Migrates easily in air and water
Some PFAS Uses
Aqueous Film-Forming Foam (AFFF)
Places Where We Might Find PFAS
Problems Caused by PFAS

Health effects on multiple organs and phases of life

Present in human blood worldwide

Polluted drinking water supplies worldwide – now issue in US

Ubiquitous discovery in the environment

Replacement chemicals also a problem
PFAS HEALTH EFFECTS
Health Effects Linked to PFAS

The main health concerns for PFAS come from studies in laboratory animals.

The most sensitive effects
- Developmental (e.g., growth, low birth weight)
- Reduced immune system function

At higher doses
- Changes in liver, kidney, and thyroid
- Disturbs natural hormones and lipids (e.g., cholesterol)
- Causes cancer
Health Effects Linked to PFAS

At present, the health effects in humans are unclear.

Some, but not all, studies in humans exposed to elevated levels of PFAS have shown that certain PFAS may:

- Decrease antibody response to vaccines
- Affect growth, learning, behavior of infants & older children
- Interfere with the body’s natural hormones
- Increase risk of cancer (testicular & kidney) at very high exposure
### Drinking Water Guidelines/Standards in the Northeast

<table>
<thead>
<tr>
<th>State</th>
<th>Standard/Guidance Nomenclature</th>
<th>Drinking Water Level (ppt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td><strong>Action Level</strong> (proposed 12/2016; currently under review by DPH)</td>
<td>70 ( \sum ) (PFOA, PFOS, PFNa, PFHxS, PFHpA)</td>
</tr>
<tr>
<td>Maine</td>
<td><strong>Health Advisory</strong> (adopted EPA 2016 HA’s for PFOA, PFOS on 12/2016)</td>
<td>70 ( \sum ) (PFOA, PFOS)</td>
</tr>
<tr>
<td>Massachusetts</td>
<td><strong>Proposed Maximum Contaminant Level (MCL)</strong> (proposed 12/2019; currently in rulemaking process)</td>
<td>20 ( \sum ) (PFOA, PFOS, PFNa, PFHxS, PFHpA, PFDA)</td>
</tr>
<tr>
<td>New Hampshire</td>
<td><strong>MCL/Ambient Groundwater Quality Standards</strong> (adopted 10/2019; currently under injunction)</td>
<td>12 PFOA 15 PFOS 18 PFHxS 11 PFNa 70 ( \sum ) (PFOA, PFOS)</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Drinking Water Quality Institute <strong>MCL</strong> (adopted 9/2018 for PFNA, 4/2020 for PFOA, PFOS)</td>
<td>13 PFOS, PFNa 14 PFOA</td>
</tr>
<tr>
<td>New York</td>
<td>Drinking Water Quality Council recommended <strong>MCL</strong> (proposed 7/2019; currently in rulemaking process)</td>
<td>10 PFOA 10 PFOS</td>
</tr>
<tr>
<td>Rhode Island</td>
<td><strong>Proposed MCL</strong> (proposed 2/2020; currently in rulemaking process)</td>
<td>10 ( \text{WS} \sum ) (PFOA, PFOS, PFNa, PFHxS, PFHpA, PFDA)</td>
</tr>
<tr>
<td>Vermont</td>
<td><strong>MCL</strong> (adopted 3/17/2020)</td>
<td>20 ( \sum ) (PFOA, PFOS, PFNa, PFHxS, PFHpA)</td>
</tr>
</tbody>
</table>
OVERVIEW OF CONNECTICUT PFAS ACTION PLAN
Connecticut Interagency PFAS Task Force

- July 8, 2019 Governor Ned Lamont established the Connecticut Interagency PFAS Task Force
  - Identify impacts to health and environment
  - Listen to stakeholders' concerns
  - Identify actions to address impacts
- November 1, 2019 – Connecticut PFAS Action Plan
  - Recommended actions related to health, environment, and communication
CT PFAS Action Plan Recommendations

- Human Health
- Pollution Prevention
- Remediation
- Outreach
- Legislative Opportunities
Human Health Impacts

- Test drinking water for PFAS
- Monitor new research; modify health-based guidelines as appropriate
- Identify, prioritize, and evaluate other potential sources of PFAS exposure
- Procure testing equipment for the State Laboratory
Pollution Prevention

- Minimize future AFFF releases
  - Best practices for handling, storage, and disposal
  - AFFF take-back program
  - Evaluation, selection, and procurement of fluorine-free foams
- Identify other potential PFAS sources
  - Operations, processes, and consumer products
- Evaluate the levels of PFAS that reach wastewater treatment plants, biosolids, and compost
- Establish discharge limits for PFAS in air and water
Remediation

- Map potential PFAS sources to identify areas of greatest concern
- Identify impacted areas and ambient PFAS levels through large-scale environmental sampling
  - Sites and areas where AFFF has been stored or released
  - Landfills and surrounding areas
- Establish PFAS cleanup standards for soil, groundwater, surface water, and aquatic biota
- Continue using statutory authority to compel investigation and cleanup of PFAS releases
Public Outreach and Communication

- Enhanced public outreach by state agencies
  - Risk communication services (e.g., public meetings, informational materials)
- Up-to-date webpage content
- Collaboration with local health officials and emergency response personnel
- Enhanced notification procedures for emergency release incidents
Legislative Opportunities

- Safe Drinking Water Advisory Council
  - Make recommendations to the Commissioner of Public Health.
  - Maximum Contaminant Level, treatment technique, or Action Levels.
  - Timeframes and frequencies for sampling.
  - Form and content of public notification.
  - Development of educational materials and guidance.
Legislative Opportunities

- Minimize future releases of AFFF to the environment
  - AFFF take-back program
  - Other measures, such as a ban on use of AFFF for training purposes
- Evaluate whether the State can require the disclosure of products containing PFAS in Safety Data Sheets and product labeling
RECENT DEVELOPMENTS
Governor’s Proposed FY 2021 Budget

Recommended Bond Authorization

- Establish AFFF take-back program
- Test private wells, provide resources to residents with PFAS-contaminated wells

Capital Equipment Purchase Fund

- Purchase PFAS analysis equipment for the State Public Health Laboratory
Governor’s Proposed FY 2021 Budget

General Fund Appropriations

- For consulting services to assist the Safe Drinking Water Advisory Council
- To initiate statewide surface water and sediment sampling
- To enhance toxicology expertise, certify labs, and enable the DPH Laboratory to analyze PFAS in drinking water
- To replace AFFF and nozzles in eight State-managed regional foam trailers
PFAS Bills Raised in the General Assembly

SB 297 – An Act Concerning the Use of PFAS in Class B Firefighting Foam

• Ban on training with AFFF – July 1, 2021
• Ban on firefighting with AFFF – July 1, 2022 (if alternative foam is identified by April 1, 2021)
• Take-back program for municipal AFFF – Development by October 1, 2021
PFAS Bills Raised in the General Assembly

HB 5288 – An Act Concerning PFAS

- Ban on training with AFFF – January 1, 2021
- Development and implementation, by January 2, 2021, of a plan for:
  - Statewide testing of water supply sources, water supplies, and bottled water for PFAS
  - Public education on the potential risks of drinking PFAS-contaminated water
PFAS Bills Raised in the General Assembly

HB 5291 – An Act Limiting the Use of PFAS & Expanded Polystyrene in Food Packaging

• Study on reasonable alternatives to food packaging containing intentionally added PFAS or expanded polystyrene – January 1, 2021

• Ban on the manufacture, sale, or distribution of any such food packaging with an identified alternative
For More Information

• Drinking from public supplies: DPH Drinking Water Section (860) 509-7333

• Drinking from private wells: DPH Private Well Program (860) 509-8401

• PFAS health effects: DPH Environmental & Occupational Health Assessment Program (860) 509-7740

• PFAS in the environment: DEEP Remediation Division (860) 424-3705

www.ct.gov/ctpfastaskforce
Questions?
Thank You!

• CT Department of Public Health
  • Lori Mathieu, Public Health Branch Chief, Environmental Health and Drinking Water Branch
  • Cheryl Fields, State Toxicologist, Environmental and Occupational Health Assessment Program
  • Patricia Bisacky, Environmental Analyst 3, Drinking Water Section

• CT Department of Energy and Environmental Protection
  • Raymond Frigon, Assistant Director, Remediation Division
  • Shannon Pociu, Environmental Analyst 3, Remediation Division
  • Anna Hagstrom, Ph.D., Inaugural Connecticut Academy of Science and Engineering Science and Technology Policy Fellow, PFAS & Emerging Contaminants Policy