Public Meeting December 8, 2022

CT Interagency PFAS Task Force Action Plan Update

Governor Ned Lamont

Commissioner Katie Dykes

Commissioner Manisha Juthani

Participating State Agencies & Entities

Welcoming Remarks

- 3 years since the Governor brought us together
  - 3 Task Force Meetings
  - 3 Subcommittees
  - Public input
- PFAS Action Plan, November 1, 2019
- Let’s share what we have accomplished

Firefighting foam in the Farmington River
June 9, 2019

Welcoming Remarks - *Thanks to Our Staff*

DEEP's Environmental Quality Branch
Deputy Commissioner Tracy Babbidge

Bureau of Water Protection & Land Reuse
Graham Stevens, Bureau Chief
Remediation Division: Ray Frigon, Shannon Pociu, Tiziana Shea, Peter Zaidel, Carolyn Fusaro, Ryan Mowrey, Abby Plungis, Normandy Avery, Geeta Dahal, Liz McAuliffe
Water Planning & Management Division: Nisha Patel, Chris Bellucci, Ivonne Hall, Traci Iott, Meghan Lally, Ivonne Hall, Carlos Esguerra, Stacy Pappano, Craig Motasky, Chris Falk, Jueda Shytko

Bureau of Materials Management & Compliance Assurance
Jennifer Perry, Bureau Chief
Emergency Response & Spill Prevention Division: Lori Saliby, Rick Swan, Diane Duva, David Keating, Tim Baird, Ken LeClerc, Rich Scalora, Dave Poynton, Deb Catuccio
Waste Engineering & Enforcement Division: Gabrielle Frigon, Brent Madho, Ross Bunnell
Water Permitting & Enforcement Division: Michelle Gore, Helen Lunsford, Nancy Wollenberg, Lauren Jones, Jim Creighton, Patrick Bieger, Robin Long
Planning: Tom Metzner

Bureau of Air Management
Paul Farrell, Bureau Chief
Engineering Division: Jaimeson Sinclair
Enforcement Division: Jacob Felton

Legal, Planning, Regulatory Affairs: Brendan Schain, Edith Pestana
Central Services: Laurie Valente, Deborah Gilebbi, Garrett McCurdy

DPH's Environmental Health and Drinking Water Branch
Lori Mathieu Public Health Branch Chief

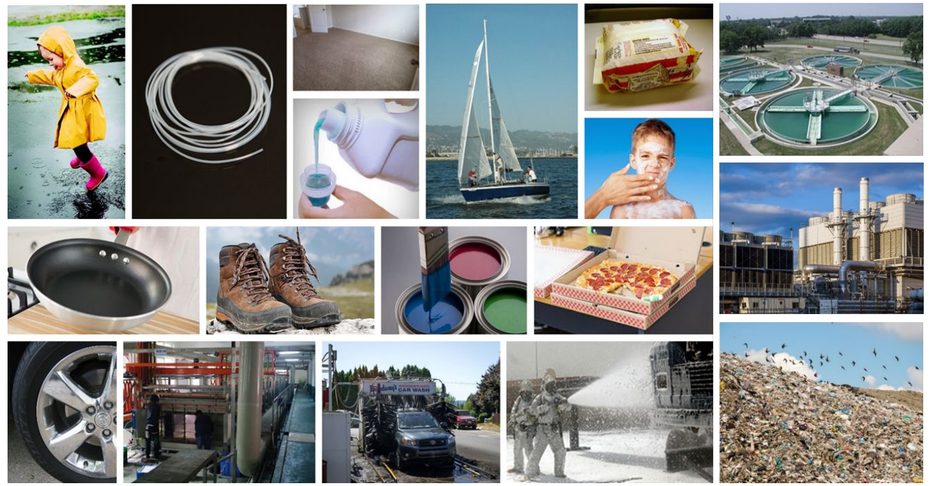
Emerging Contaminants Unit:
Patricia Bisacky, Matthew Allen, Andrew Donnellycolt, Frank Mahalski, Aaron Medford
Environmental Laboratory Certification Program:
Dawn Shaban, Nicole Paradise
Grants and Administration:
Rachel Nowek, Christine Hahn-Dunn

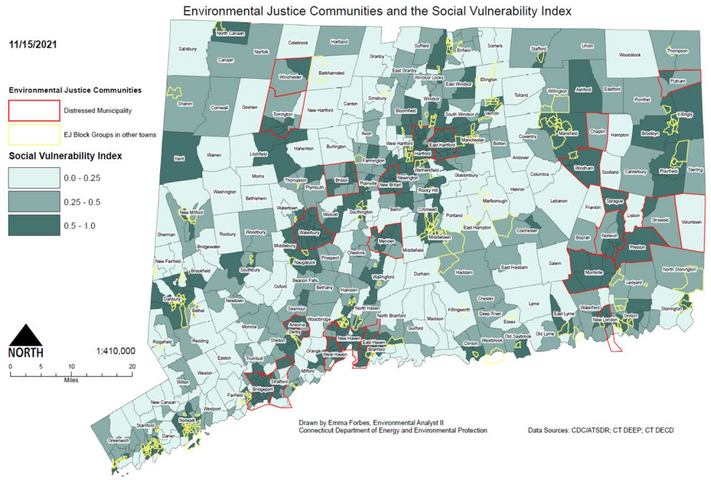
DPH Environmental Health Section
Toxic Hazards Program:
Margaret Harvey, Xun Che, Cheryl Fields, Sharee Rusnak
Private Well Program:
Ryan Tetreault

DPH Drinking Water Section
Drinking Water State Revolving Fund Program:
Joseph Buehler
Eastern and Western Compliance Region staff:
Mandy Smith, Vicky Carrier, Dominic DelVecchio, Dr. Alex Tabatabai
Enforcement Unit:
Steven Harkey

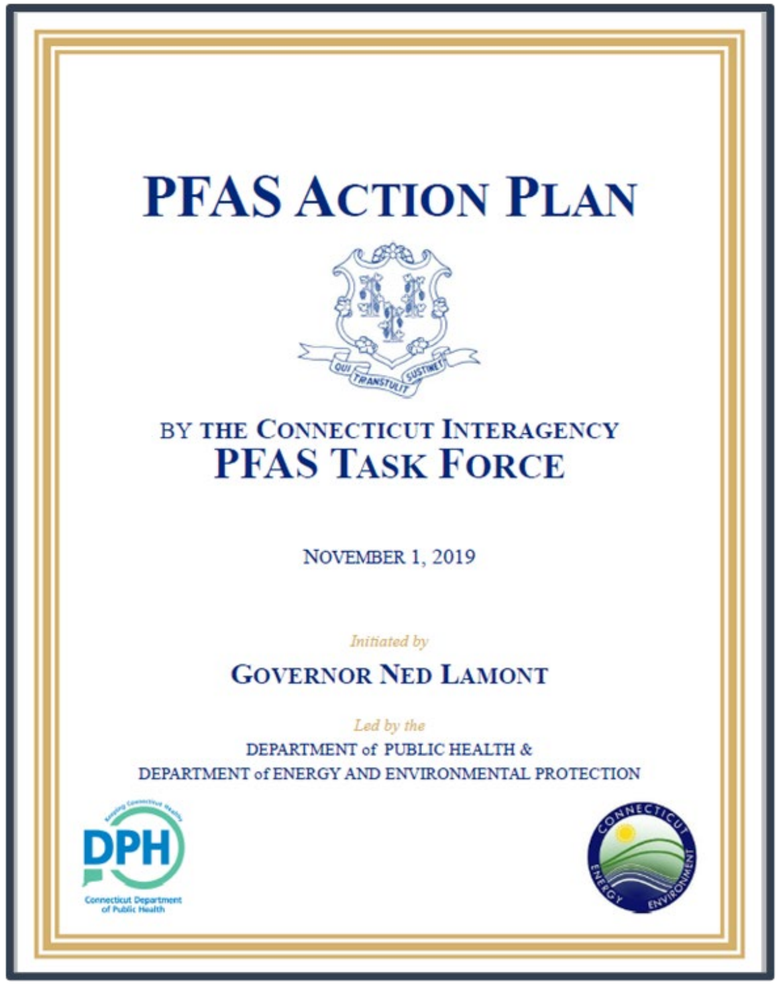
Katherine A. Kelley Public Health Laboratory
Dr. Jafar Razeq, Susan Isch, George Garrison, Mitchel Manning

Progress Being Made and More To Do





2019 PFAS Action Plan Review



Comprehensive strategy for protecting Connecticut's citizens from PFAS exposure and protecting the environment from the effects of PFAS pollution.

- 34 recommended actions
- 4 Strategic Focus Areas:
  - Protecting the health of CT Citizens
  - Pollution Prevention
  - Remediation
  - Education, Outreach and Communication

Agenda

- **Agency PFAS Updates**
- **Public Comments**

  please note all comments are being recorded
- **Concluding Remarks**

Department of Public Health

PUBLIC HEALTH ROLE

LEADERSHIP

- Evaluate potential risk to human health from environmental exposures
- Health guidelines, toxicology reviews, and risk assessments

AUTHORITY

- Primacy Agency implementing the Safe Drinking Water Act
- Regulatory oversight of over 2,500 Public Water Systems serving at approximately 2.8 million CT residents

EDUCATION

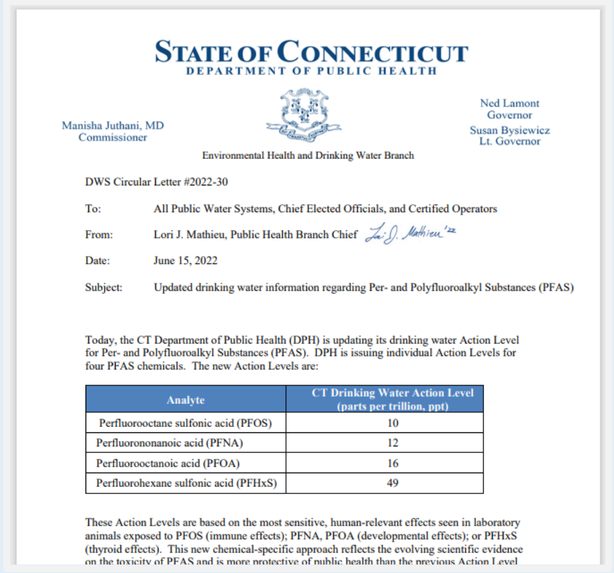
- Outreach, public messaging, and risk communication to Connecticut residents with private wells and the public water systems we regulate

Department of Public Health

What we have done:

- New individual **Action Levels** announced *June 15, 2022*

		CT Action Levels
PFOS	perfluorooctane sulfonic acid	10 parts-per-trillion
PFNA	perfluorononanoic acid	12 ppt
PFOA	perfluorooctanoic acid	16 ppt
PFHxS	perfluorohexane sulfonic acid	49 ppt



STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Manisha Juthani, MD
Commissioner

Ned Lamont
Governor
Susan Bysiewicz
Lt. Governor

Environmental Health and Drinking Water Branch

DWS Circular Letter #2022-30

To: All Public Water Systems, Chief Elected Officials, and Certified Operators

From: Lori J. Mathieu, Public Health Branch Chief

Date: June 15, 2022

Subject: Updated drinking water information regarding Per- and Polyfluoroalkyl Substances (PFAS)

Today, the CT Department of Public Health (DPH) is updating its drinking water Action Level for Per- and Polyfluoroalkyl Substances (PFAS). DPH is issuing individual Action Levels for four PFAS chemicals. The new Action Levels are:

Analyte	CT Drinking Water Action Level (parts per trillion, ppt)
Perfluorooctane sulfonic acid (PFOS)	10
Perfluorononanoic acid (PFNA)	12
Perfluorooctanoic acid (PFOA)	16
Perfluorohexane sulfonic acid (PFHxS)	49

These Action Levels are based on the most sensitive, human-relevant effects seen in laboratory animals exposed to PFOS (immune effects); PFNA, PFOA (developmental effects); or PFHxS (thyroid effects). This new chemical-specific approach reflects the evolving scientific evidence on the toxicity of PFAS and is more protective of public health than the previous Action Level

- Grounded in sound science for the most commonly found PFAS in Connecticut
- Based on the most sensitive, human-relevant effects in laboratory animal studies
- The *previous* **Action Level** was set in *2016* at **70 ppt** for the sum of 5 PFAS: PFOS, PFNA, PFOA, PFHxS, and PFHpA

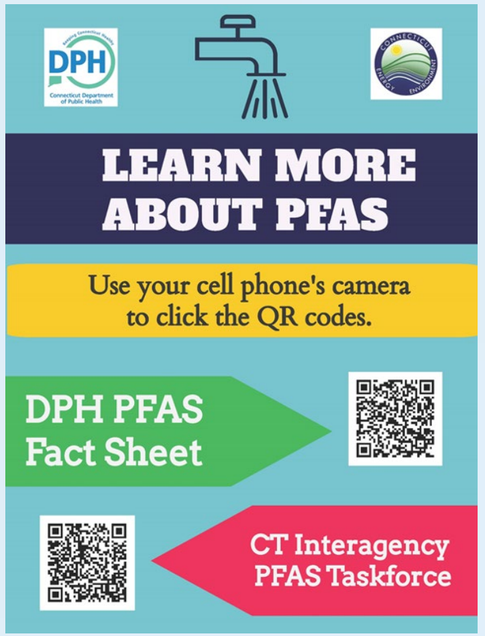
Department of Public Health

Protecting Public Health:

- **Work with** Public Water Systems (PWS) and communities that find PFAS

  Provide technical assistance, public health expertise and risk communication services

  - PWSs serving **1.5 million** people have found PFAS in their drinking water
    - **DPH is working with those that** have PFAS **exceeding** CT's Action Levels
    - **Detected** PFAS: PFOA, PFOS, PFNA, PFHxS, PFBS, PFHpA, PFHxA
  - **Help** PWSs implement and assure measures are in place to **limit PFAS exposure** to people
    - Communicate with customers
    - Take drinking water source with PFAS offline and find alternative
    - Install treatment to reduce PFAS levels
    - Blend with alternative drinking water source to reduce PFAS levels



Department of Public Health

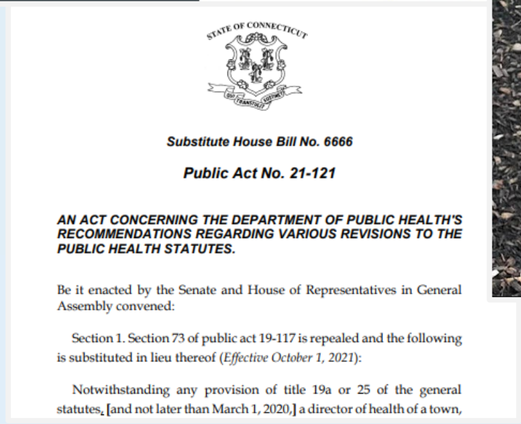
What we have done:

- New staff in the Environmental Health and Drinking Water Branch focused on PFAS:
  - Environmental Analysts
  - Toxicologist
  - Laboratory Consultant
- Katherine A. Kelley State Public Health Laboratory
  - Analytical Equipment – *installed, optimized and validated*
  - New Chemist – *hired*

Department of Public Health

What we have done:

- PFAS Frequently Asked Questions webpage
- Public Act 21-121
  - **Requirement** for the *5* Water Bottlers* with sources in CT to **test their sources** for emerging contaminants including PFAS
- Fish Consumption Advisories for PFAS
  - Evaluate fish tissue samples collected by DEEP
  - Sections of the Natchaug, Shetucket and Willimantic Rivers issued in 2020
  - Sections of the Hockanum River issued in 2022


STATE OF CONNECTICUT

Substitute House Bill No. 6666

Public Act No. 21-121

AN ACT CONCERNING THE DEPARTMENT OF PUBLIC HEALTH'S RECOMMENDATIONS REGARDING VARIOUS REVISIONS TO THE PUBLIC HEALTH STATUTES.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. Section 73 of public act 19-117 is repealed and the following is substituted in lieu thereof (*Effective October 1, 2021*):

Notwithstanding any provision of title 19a or 25 of the general statutes, [and not later than March 1, 2020,] a director of health of a town,

**Natural Country Farms, Inc., Tri-Mountain Spring Water, Triple Springs Water, LLC, Village Springs, Inc., Gavlak Enterprises*

Department of Public Health

Continued Efforts:

- **Require** all new public drinking water sources test for PFAS
- **Recommend** all Public Water Systems (PWS) test for PFAS
  - **121** PWSs serving **1.7 million** people have voluntarily tested their drinking water for PFAS

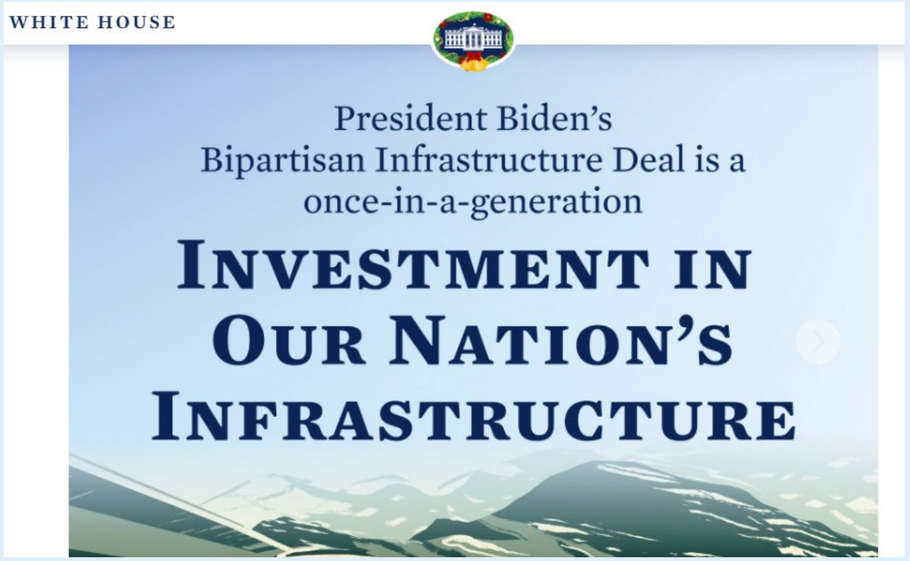
Moving forward:

- Work with Academia
  - Memorandum of Agreement with UCONN on PFAS **communication and outreach**
- **PFAS testing** at Public Water Systems serving disadvantaged communities, vulnerable populations and areas of high social vulnerability
- EPA draft drinking water rule for PFOA and PFOS *expected* in December 2022

Department of Public Health

Moving forward:

- **Federal loan funding** to assist municipalities and Public Water Systems (PWS) with PFAS
  - **Distributed** through the Drinking Water State Revolving Loan Fund (DWSRF)
  - Base Fund: **$7 million** for DWSRF eligible projects
- Bipartisan Infrastructure Law
  - Emerging Contaminants Award: **$7.5 million** *per year* focused on addressing PFAS
  - DPH has **$52 million** of loan requests to address emerging contaminants (includes PFAS and others, such as manganese)
  - Communities are being **prioritized** using the Social Vulnerability Index (SVI)



Department of Energy & Environmental Protection

What we've done:

- **Received State Funding to Prevent Future PFAS Releases and Test/Treat Private Wells with PFAS pollution**
  - 2020 - $2M Bond funding received for AFFF Take-Back Program and private well testing for PFAS
  - FY21-FY22 - 12/21/21 Bond Commission Meeting (PA 21-111)
    - $1.15M each year for private well testing and treatment
- **Implemented Legislation Banning AFFF Use – Public Act 21-191, AAC the Use of PFAS in Firefighting Foam**
  - Section 1: Banned training with AFFF upon passage, July 13, 2021
    - ✓ Banned most AFFF uses as of 10/1/21
    - ✓ Directed DEEP to initiate an AFFF Take-Back Program (began April 2021)
  - Section 2: Updated Toxics in Packaging Law to include ban on intentionally-added PFAS in food packaging effective 1/1/24

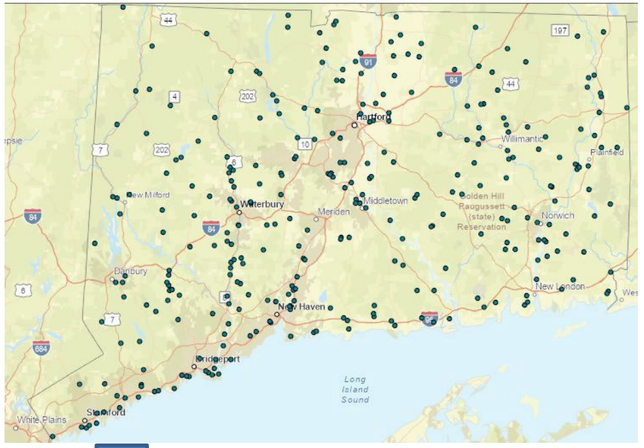
AFFF Take-Back Program

Joint DEEP/DESPP Effort – CT Leads the Nation

- ✓ Phase 1 – Container Collection & Disposal of AFFF concentrate from state/municipal fire departments
  - Launched in April 2021; Completed March 2022
  - **35,300 gal.+ collected from >250 town fire departments**
- ✓ Phase 2 – PFAS Decontamination Study/ Regional Foam Trailer Cleaning:
  - Summer 2021-2022
  - Now purchasing new foam trailers
- ❑ Phase 3 – Dispose of AFFF from ~400 municipal fire trucks: Pending funding
- ❖ Granted AFFF Use Extensions to 23 terminals & chemical plants that are actively transitioning

ONGOING PFAS PROJECTS: GIS and Potable Water Testing

- **Created PFAS GIS Project to prioritize sampling in vulnerable communities**
- **Killingworth & East Hampton**
  - DEEP sampled private wells, provided bottled water and treatment systems where PFAS exceeds DPH Drinking Water Action Levels
  - Testing to identify the source underway in Killingworth
- **Private Well Testing in additional communities 2022/23**
  - Locations TBD based on PFAS vulnerability
  - Prioritizing areas at high risk of PFAS pollution in vulnerable communities
  - Will utilize $1.15M in bond funds received at 12/21/21 Bond Commission Meeting (PA 21-111)

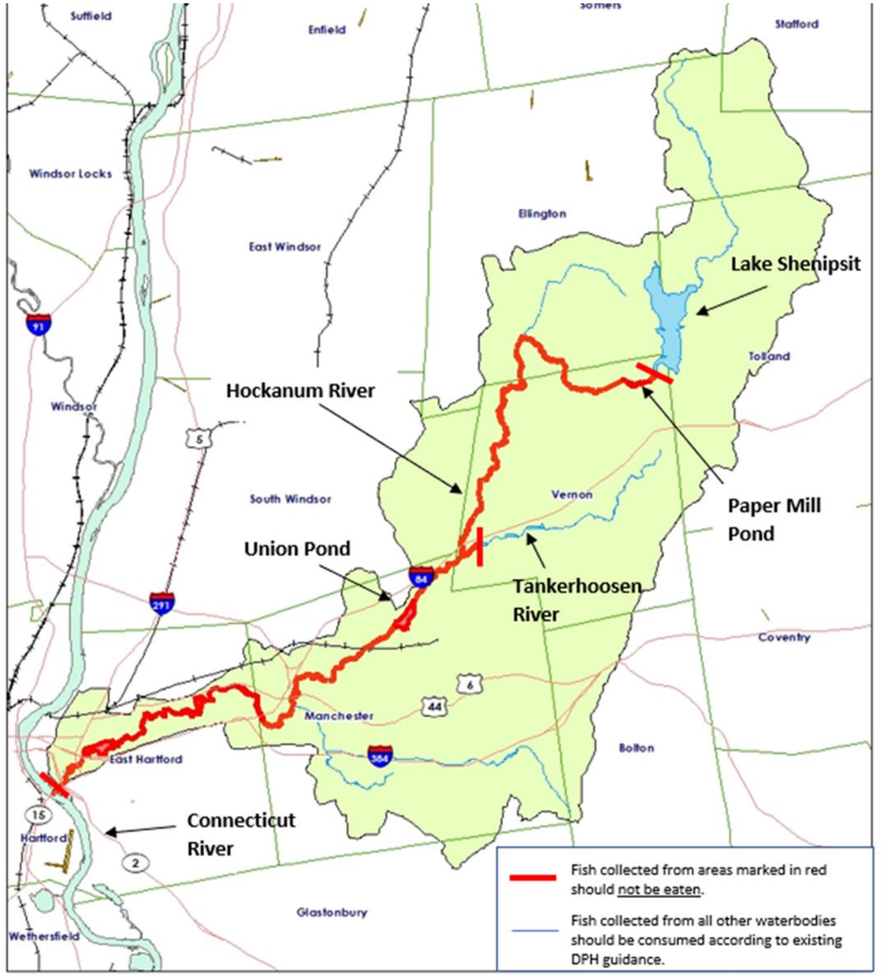


ONGOING PFAS PROJECTS: Wastewater & Landfills

- **Sampled 1/3 of Publicly-Owned Treatment Works (POTWs) (35)**
  - September 2021 – March 2022
  - **Influent**, **effluent**, **sludge** at all 35 POTWs
  - **Scrubber water** at 4 POTWs with incinerators
  - **Surface water** and **fish tissue** samples from 10 receiving waters (summer only)
- **Industrial Wastewater Discharge Permit Screening for New Permits and Renewals**
  - If a known or suspect PFAS source, monitoring and treatment required
- **Landfill Leachate & Groundwater Monitoring Initiated**
  - Sampling at landfills subject to Superfund and Stewardship Permits issued through the RCRA Corrective Action process

ONGOING PFAS PROJECTS: Surface Water & Fish – Hockanum River

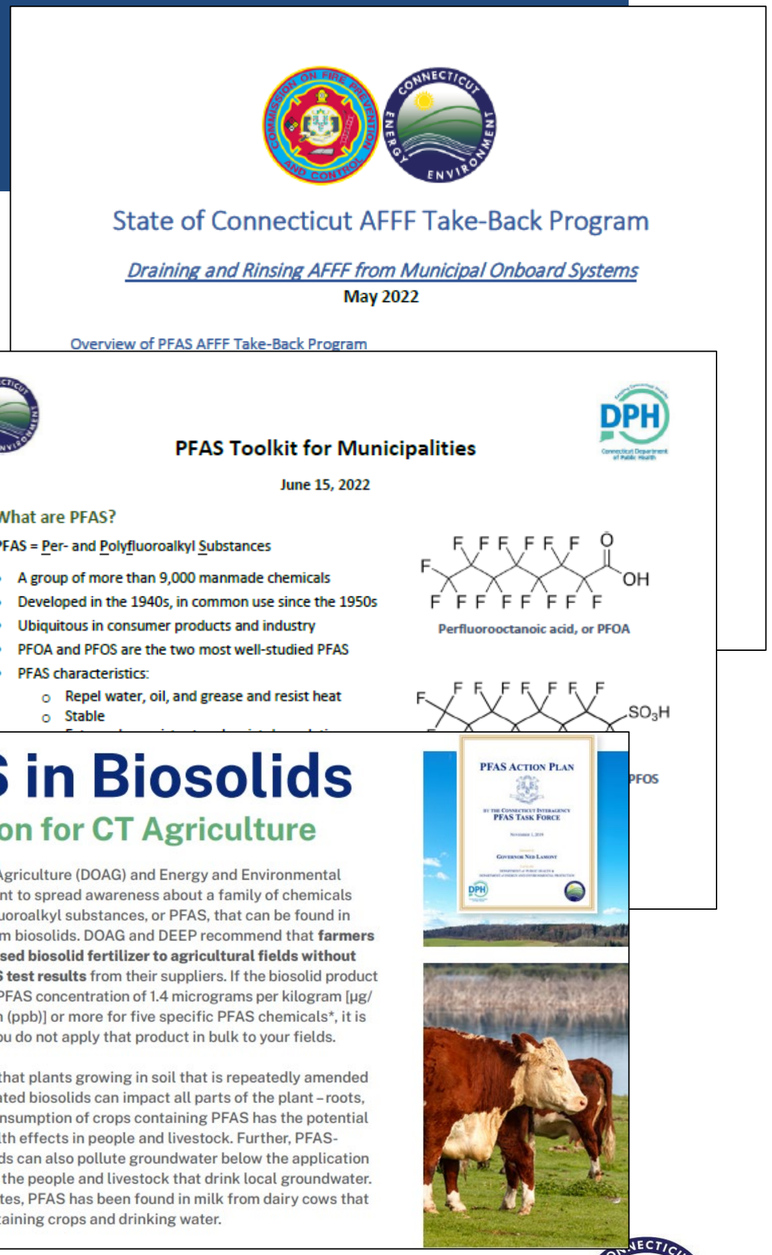
- Elevated PFOS levels found in fish tissue near the Vernon POTW during sampling
- POTW effluent PFAS levels not especially high
- 4/8/22 – DPH issued “Do Not Eat” fish consumption advisory for Hockanum River downstream of Lake Shenipsit
- **ACTION**: DEEP has been performing follow-up surface water, sediment, and fish tissue sampling to refine stream reaches of concern and identify PFAS source area(s).
- Samples being analyzed by UConn’s Center for Environmental Science & Engineering.



Fish Tissue Consumption Advisory Map:
Hockanum River Watershed

OUTREACH

- **Flyers, Fact Sheets and Presentations for Fire Departments on AFFF with DESPP**
  - ✓ Guidance for Draining and Rinsing Municipal Fire Apparatus
- **Municipal Planner with DPH**
  - ✓ "How-To" document to assist Towns in addressing PFAS in drinking water and implementing environmental testing
- **Joint DEEP/DoAg PFAS Information for Agriculture**
  - Recommends avoiding bulk land application of biosolids-based fertilizers containing high levels of PFAS.
- **Collaboration with Academia:**
  - ✓ **UConn:** School of Engineering, College of Natural Resources, and Center for Environmental Science and Engineering on PFAS research, student projects
  - ✓ **Yale:** School of Public Health on seminars and grant applications



NEXT STEPS FOR DEEP

- **Focused sampling** of private wells in high-risk areas
- **Update** Remediation Standards and establish Water Quality Criteria
- **Implement** the 1/1/24 Toxics in Packaging Law ban on intentionally-added PFAS in food packaging
- **Expand** landfill monitoring
- **Continue outreach and aid** to municipalities and the regulated community
- **Seek/leverage funding opportunities** to support PFAS initiatives
  - Continue State & Municipal AFFF Take-Back Program – municipal fire trucks, other state facilities, airports
  - Surface water and fish tissue sampling
  - Data management assistance

Department of Emergency Services and Public Protection

Jeff Morrissette, State Fire Administrator
Commission on Fire Prevention and Control

CT Agricultural Experiment Station (CAES)

Jason C. White, Ph.D.; Director (Jason.White@ct.gov)

- Used $600,000 of CT CEPF to acquire a LC-Triple Quad for PFAS analysis ($600,000)
- CAES has or has leveraged federal funding and initiated 7 research projects and 2 surveillance projects on PFAS-related topics

CT Agricultural Experiment Station (CAES)

- NIEHS-funded project on nanotechnology-enabled phytoremediation of PFAS in soil and water (Research)
- FDA-leveraged funds to investigate methods to decrease PFAS availability in soil with engineered biochar (Research)
- Yale- and WVU-led project on PFAS analysis in surface and ground water in areas affected by natural gas and coal industries (Research)
- CAES-led project studying engineered biochar for PFAS removal from drinking water (Research)

CT Agricultural Experiment Station (CAES)

- Yale-led project validating PFAS analysis in dried blood spots (Research)
- Yale-led project developing FluoroMatch Software for non-targeted PFAS analysis (Research)
- Two CAES projects with Tribal Nations (4) in Maine; PFAS analysis in hemp, fiddlehead ferns, and soils (Research, Surveillance)
- DoAg/CAES pilot project analyzing PFAS in biosolids based fertilizers in CT (Surveillance)
- Participating in DPH-led PFAS Testing Laboratory Capacity and Capability Discussion Group

Connecticut Airport Authority

- Coordinated with State Building Official and State Fire Marshal on hanger usage

- Bradley International Airport
  - Total of 13 hangers with PFAS Aqueous Film Forming Foam (AFFF) systems
  - 7 hangers have removed foam systems and now utilize water systems
  - 2 hangers will be replacing foam systems with new approved PFAS free foam systems
  - Remaining hangers are Military

Connecticut Airport Authority

- General Aviation Airport
  - Total of 6 hangers with AFFF systems
  - 4 hangers have removed foam systems
  - 1 hanger to remove or replace foam system
  - Remaining hanger is Military
- Airport Fire Fighting
  - Required by federal law [Title 14 CFR Part 139] to use Aqueous Film Forming Foam (AFFF)

    The Federal Aviation Authority (FAA) and Department of Defense (DoD) are actively researching and testing fluorine-free firefighting foams that meet performance standards for safety.
  - Discharge of AFFF is only permitted for an actual emergency involving a fuel fire
  - Replaced all AFFF on structural engines to fluorine-free foam (*not required by federal law*)

Department of Transportation

Aqueous Film-Forming Foam (AFFF) at the New Haven Railyard

- **New Haven Railyard**: ~79-acre facility

  owned by CTDOT and for maintenance of rail cars and **operated by** both **MetroNorth and Amtrak**
- **1,600 gallons of AFFF** (*PFAS-containing fire suppression foam*) for Amtrak's diesel storage and dispensing operations
- Infrastructure and emergency procedures are in place to minimize impacts to the environment if the fire suppression systems were to be activated


Fueling Facility

Department of Transportation

Aqueous Film-Forming Foam (AFFF) at the New Haven Railyard

Replacement Project:

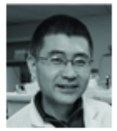
Fuel Offloading Facility

- Fuel Offloading Facility: Bulk diesel storage – full replacement of AFFF mixing and deployment systems
- Fueling Facility: Diesel dispensing – replacement of AFFF deployment system. AFFF mixing tanks to be decontaminated using DEEP pilot-tested procedure
- Replacement foam: Ansul's NFF 3x3 Low Expansion Foam
- Project expected to be complete by Spring 2023

UCONN: *Ongoing PFAS Research Activities*

PFAS SRTC
SUPERFUND RESEARCH AND TRAINING CENTER:
EXPOSURE, HEALTH EFFECTS, SENSING, AND REMEDIATION OF EMERGING CONTAMINANTS

Administrative Core



Yu Lei,
Center Director

Erin Bell,
Deputy-Director

External Advisory Committee

Internal Advisory Committee

Data Management and Analysis Core

Jun Yan, Lead

Jennifer Chaput,
Renee Walsh, Co-Leads

Research Experience and Training Coordination Core

Maria Chrysochoou, Lead

Nefeli Bompoti, Co-Lead

Community Engagement Core

Nefeli Bompoti, Lead

Maria Chrysochoou,
Rupal Parekh, Co-Leads

Environmental Science and Engineering Projects

Research Project #1
Portable, Low-cost, Ultrasensitive, and Selective Sensor for PFAS

Yu Lei, Lead

Baikun Li, James Rusling,
Co-Leads

Research Project #2
Development of Tailored Membranes to Enable Hybrid Systems for PFAS Destruction

Jeff McCutcheon, Lead

Ying Li, Suzanne Witt,
Co-Leads

Biomedical Research Projects

Research Project #3
Immunotoxic Effects of PFOA and PFOS Exposure: The Role of T Helper Cells

Sylvain De Guise, Lead

Milton Levin, Salvatore Frasca Jr., Christopher Perkins, Co-Leads

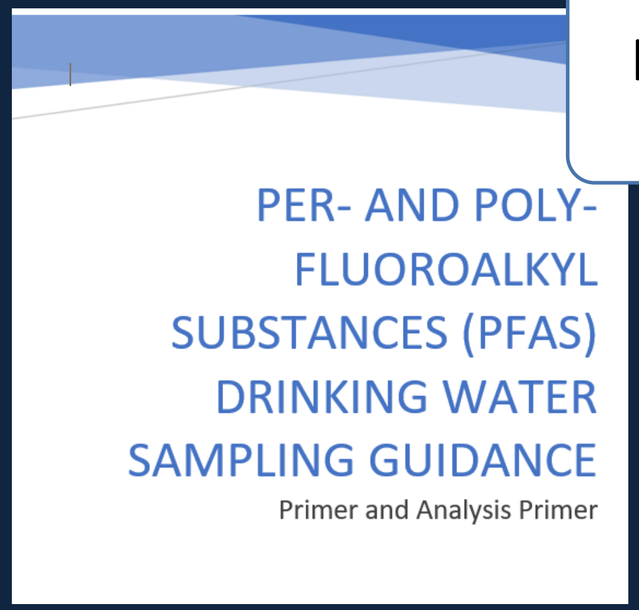
Research Project #4
Biochemical and Molecular Effects of PFAS in Communities w. PFAS Exposure

Erin Bell, Lead
David Lawrence, Elizabeth Lewis-Michl, Jennifer Cavallari, Co-Leads

UCONN: *Senior Design Projects with DPH and DEEP*

- **Project 1**: Technology gap for perfluoroalkyl and polyfluoroalkyl substances (PFAS) – focusing on a scalable, cost-effective, automated solid phase extractor (*with DPH*).
- **Project 2**: Determining background concentrations of PFAS in Connecticut soil and groundwater – utilizing the DEEP geographic information system (GIS) database of potential PFAS sources to identify areas that may be indicative of background PFAS concentrations in soil and groundwater (*with DEEP*).
- **Project 3**: Determining PFAS presence in and leachable from artificial turf fields – to better understand whether the PFAS are present in and leachable from artificial turf fields (*with DEEP*).
- **Project 4**: Evaluation of in-situ technologies to remediate or sequester PFAS in soil – to understand the chemical and physical properties of PFAS, conduct literature searches to identify and evaluate innovative in-situ treatment options that are viable for bench-top or full-scale implementation (*with DEEP*).

Enhancing PFAS education, outreach, and communication in the State of Connecticut



Educational & Outreach Materials

Informational materials, videos, handouts, presentations & website updates

Stakeholder Engagement

Engagement of local community in coordination with State Agencies

Dr. Nefeli Bompoti, Assistant Research Professor, Civil & Environmental Engineering
Nicholas Coelho, Graduate Assistant, Civil & Environmental Engineering

UCONN SCHOOL OF ENGINEERING

DPH Log #2021-0072

UCONN

CT OAG Multistate PFAS Efforts: 2020 to present

Joined other State Attorneys General in submitting multiple comment letters calling on the EPA to strengthen its regulation of PFAS, including:

- That PFAS be added to the Toxic Release Inventory (TRI) and that EPA regulate PFOA and PFOS in drinking water
- Supporting EPA's proposed rule under the Toxic Substances Control Act (TSCA) to require importers of certain products containing PFAS chemicals to notify EPA prior to their importation
- Supporting EPA's revision to the Unregulated Contaminant Monitoring Rule for public water systems and its proposal to add PFAS to the Drinking Water Contaminant List
- Urging EPA to fully fund the measures outlined in its PFAS Strategic Roadmap
- Supporting EPA's designation of PFOA and PFOS as hazardous substances under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Joined other State Attorneys General in calling on Congress to better protect the public from PFAS contamination, including letters to:

- Senate Armed Service Committee urging measures to protect servicemembers, defense communities, and the general public from PFAS contamination
- Senate leadership addressing PFAS provisions in the 2023 National Defense Authorization Act
- Senate Committee on Environment and Public Works urging action on PFAS

Department of Administrative Services

- DAS has been working with Connecticut Airport Authority (CAA) to grant special approval of alternative fire safety measures.
- State of Connecticut Fire Safety Code - recently adopted NFPA 409 standard allows for alternatives without special approval.
  - Alternatives include higher density water or environmentally friendly foam extinguishing system
- Bradley Airport:
  - PFAS fire extinguishing foam systems removed from 7 out of 13 hangars.
  - PFAS changed to environmentally friendly foam system in 2 other hangars.
  - Remaining 4 hangars are under Federal jurisdiction.

Department of Administrative Services

- Oxford Airport:
  - PFAS fire extinguishing foam systems removed from all 4 hangars.
  - New Oxford Airport using a water sprinkler system
- Office of State Fire Marshal notifies local fire department of changes to foam systems in chemical plants and marine terminals etc. under local jurisdiction.
- DAS Procurement
  - In 2019, statewide contract 19PSX0176 was issued banning PFAS and related chemicals in foodservice products.
  - In 2021, statewide contract 21PSX0163AA was issued banning PFAS and related chemicals from cleaning chemicals, janitorial supplies, and disposable liners.
  - In 2021, statewide contract 21PSX0028AB was issued for National Foam Universal F3 Green.
  - Mandatory for executive branch agencies; available for use by all political subdivisions in state.

Public Comments

We want to hear from you!

Please limit verbal comments to 3 minutes

Written comments may be emailed to CTPFAS@ct.gov

All comments will be recorded