



Remediation Roundtable

July 21, 2020





Remediation Roundtable Webcast

- Basic directions provided on listserv email
- Detailed directions on website

➡ www.ct.gov/dep/remediationroundtable





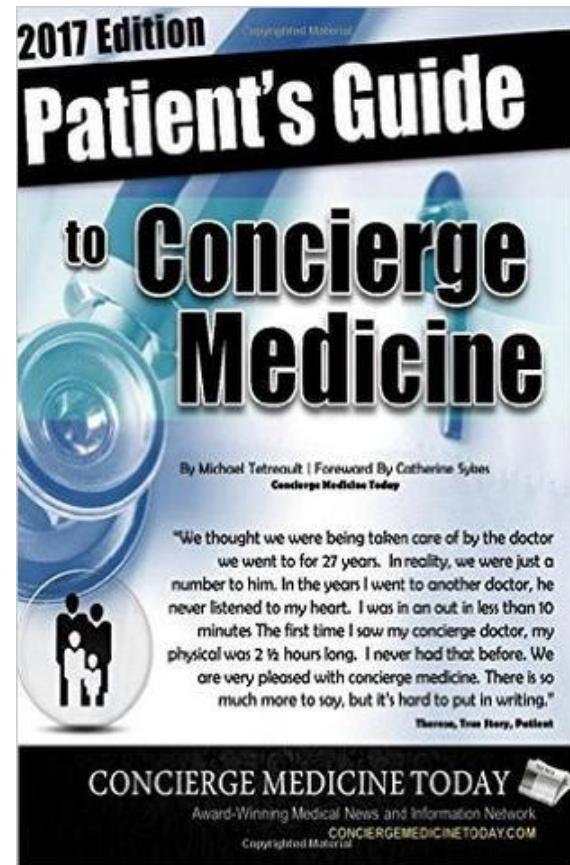
THE CLIENT CONCIERGE SERVICE

CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

JULY 21, 2020

PRESENTED BY THE CLIENT CONCIERGE TEAM
FOR THE REMEDIATION ROUNDTABLE





THE CLIENT CONCIERGE SERVICE

20BY20 Goal:
Make improvements in
how we communicate to
our stakeholders about
DEEP's processes.

- Central Office's point-of-contact for stakeholder assistance with environmental permitting
- Facilitate communication between stakeholders and permit programs
- Guide projects through the complex permitting process



THE CLIENT CONCIERGE TEAM

Nicole Lugli
Office Director

Camille Fontanella
Concierge Team Lead

Amy Richardson
Concierge Team Member

- Office of Planning and Program Development in the Office of the Commissioner
- DEEP.Concierge@ct.gov
- <https://portal.ct.gov/DEEP/Permits-and-Licenses/Client-Concierge-Permit-Assistance>

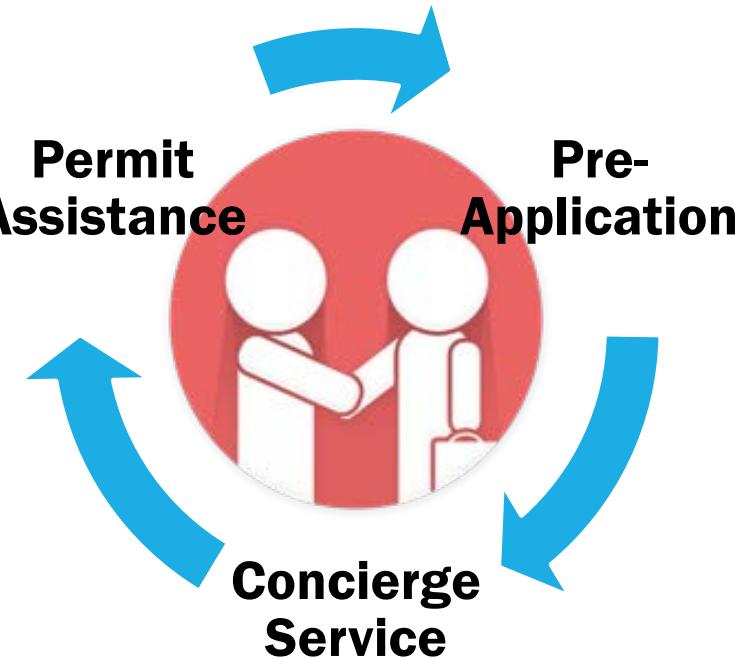
DEEP'S PERMIT ASSISTANCE

- Assists any applicant

Concierge Service

- Part of permit assistance group
- Conducts outreach to stakeholders
- Provides application assistance
- Complements permit programs
- Increases communication
- Focuses on ~12 projects at any one time

Structure



CLIENT CONCIERGE SERVICES



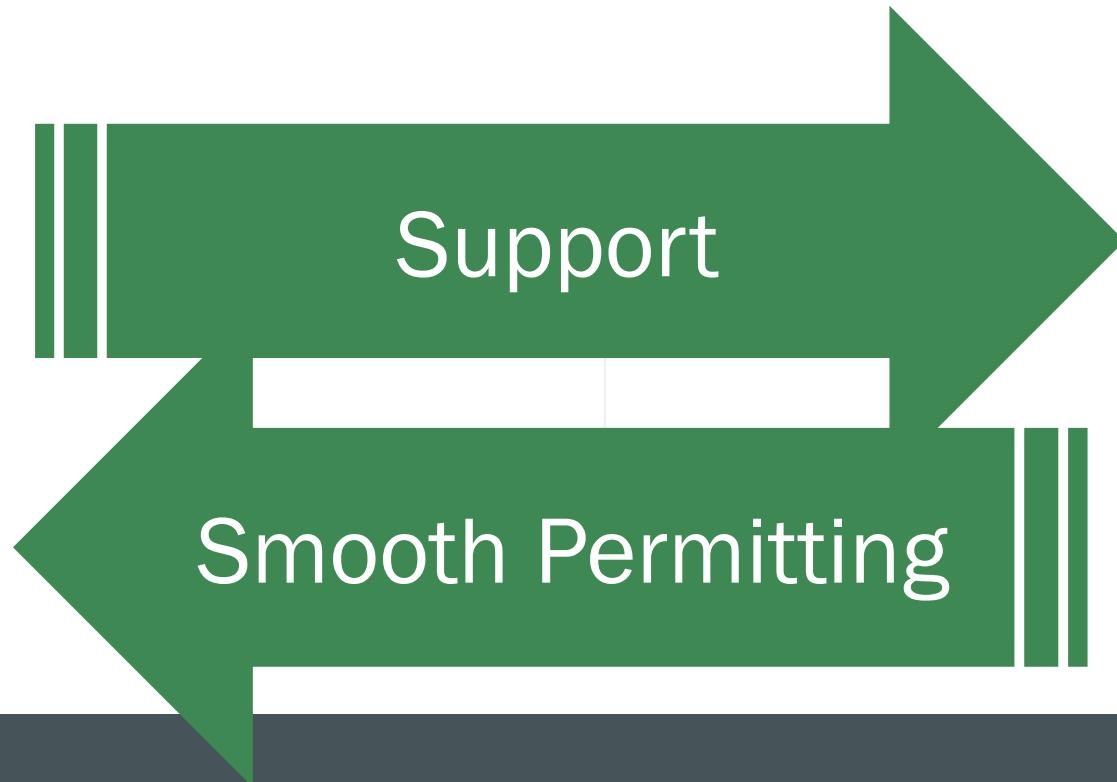
Application Assistance

- Getting high-quality permits
 - Meeting coordination
 - Permit sequencing
 - Communication with permit managers and staff
- Following up on complex permitting projects within DEEP and with other State agencies

Supporting DEEP's Permit and Licensing Programs

- Enabling staff to focus on technical review
- Resolving repeat challenges
- Upholding permit standards and environmental quality

CLIENT CONCIERGE SERVICES



PERMITTING & LICENSING PROGRAMS

Improved Client Satisfaction

TYPES OF PROJECTS

- COVID-19 response, economic recovery
- Highly- complex - multiple permitting requirements
- Supporting economic development
 - Located on a brownfield / in a Brownfield Program
 - Transit-oriented development
 - Located in an Enterprise Zone or Opportunity Zone
 - Green technology business
- Joint prioritization of the Commissioners of DEEP & DECD

INTAKE OF PROJECTS

- Coordination with Pre-application Assistance
- Concierge Inbox [DEEP.Concierge@ct.gov]
- Inter-government referrals
- Phone calls
- Permitting program referral



OUTREACH: EVOLVING STAKEHOLDER COMMUNICATION

Stakeholder Outreach and Coordination

- Web page describing Client Concierge Service availability
- Presentations to stakeholder organizations
- Bi-weekly DEEP/DECD interface meetings
- Future coordination with other State agencies, as appropriate



CLIENT CONCIERGE SERVICES



PROCESS IMPROVEMENTS

- Ongoing research - benchmarking with other State's concierge services
- Seeking customer feedback
- Ensuring economic development together with environmental protection
- Upholding permitting environmental standards

THE CLIENT CONCIERGE SERVICE

Contact:

DEEP.Concierge@ct.gov

Questions?
Suggestions?

<https://portal.ct.gov/DEEP/Permits-and-Licenses/Client-Concierge-Permit-Assistance>



Remediation Roundtable Agenda

► Announcements

► Updates

- 2020 Legislative Session
- Wave 2 RSR and EUR
- General Permit for In Situ Bioremediation
- PFAS Action Plan Update

► Presentations

- Per- and Polyfluoroalkyl Substances (PFAS), From an LEPs Perspective
- 20 by 20 Initiative - Goal-4 (Reduce Time for Transfer Act Audits): Verification and Audit Processes



Announcements: Staff Changes

► Moving on to the Commissioners Office:

► **Camille Fontanella**



► **Amy Richardson**





Staff Changes

- ▶ Retirements:

- ▶ **Arlene Cyr**

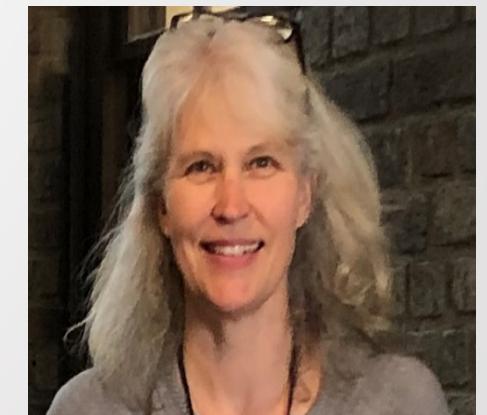
- ▶ Replacing Arlene

- is **Stefani Battles**

- ▶ In September **Kim Maiorano** will retire

- ▶ Helping with some of her duties will be

- new staff member **Elizabeth McAuliffe**





Staff Changes

► Moving Up to Supervisor of Eastern District:

► **Kevin Neary**





Staff Changes-New Staff

Peter Zaidel



Sarah McQuade





Questions or Comments?

Please Speak into Microphone
and State Your Name



www.ct.gov/dep/remediationroundtable



Announcements

Covid-19 Response and Uploading Documents

Joanna Burnham, Environmental Analyst 3, Remediation Division



DEEP website is now on new statewide platform.

Most information still there, though may look different.



Connecticut Department of Energy and Environmental Protection

699

NOTICE: DEEP is continuing to carry out its mission and provide services while keeping both the public and our workforce safe during the COVID-19 pandemic. Click here for the latest updates on DEEP's response to COVID-19. [DEEP COVID-19 Response](#)

CT.GOV HOME

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

How Do I... >

Energy >

Environmental Quality >

Natural Resources >

Outdoor Recreation >

Public Utilities Regulatory Authority (PURPA) >

Search Department of Energy and Environmental Protection

by Keyword



Most Popular

[DEEP Announces Precautionary Closures of Some Public Spaces](#) >

[Parks & Forests](#) >

[Boating & Paddling](#) >

[Fishing](#) >

[Hunting](#) >

[Online Services](#) >

[Permits & Licenses](#) >

[Public Notices](#) >



Climate Change

Addressing climate change presents residents, businesses, nonprofits, and municipalities a chance to create, evolve, and maintain a sustainable environment, a robust economy, and a higher quality of life today and tomorrow.



Recycling

Connecticut disposes of 2.4 million tons of trash annually, an estimated 1,370 pounds of trash per person per year. That's too much! Learn more about how we manage our waste and how to help us move toward more waste reduction, reuse and recycling.



DEEP Programs & Services

DEEP conserves, improves and protects Connecticut's natural resources and the environment, and makes cheaper, cleaner and more reliable energy available to people and businesses. Find DEEP's programs and services here.



Link to COVID-19 Resources

Joanna Burnham

- How Do I... >
- Energy >
- Environmental Quality >
- Natural Resources >
- Outdoor Recreation >
- Public Utilities Regulatory Authority (PURA) >

Search Department of Energy and Environmental Protection

by Keyword

DEEP COVID-19 Response

DEEP is responding to the COVID-19 pandemic in a number of ways. First and foremost, DEEP is striving to continue to carry out its mission and provide services while keeping both the public and our workforce safe. Please check this page for updates on DEEP's facilities, process changes, and response initiatives.

Doing Business with DEEP during the COVID-19 Pandemic

DEEP has [closed its offices to the public](#) and the majority of DEEP's employees are working remotely. To minimize risks to the public and DEEP staff, DEEP employees working with the public, including inspectors, maintainers and environmental educators have been provided instructions to practice social distancing, wherever possible. The majority of DEEP staff have transitioned to telework, and the Department is working to maintain continuous operation of its programs and functions to the greatest extent possible during this public health emergency.

Wherever possible, DEEP programs are encouraging that submittals be sent digitally, rather than hard copy. Services that were previously available to in-person visitors at 79 Elm Street, Hartford may be accessible online, including:

- Select documents including Hazardous Waste Manifests are now electronically accessible on the [DEEP Document Online Search Portal](#). Please use this portal to search for documents that you may need before submitting a Freedom of Information Act (FOIA) request. If you still wish to submit a FOIA request, please submit your request electronically to DEEP.FOIA@ct.gov. [DEEP's FOIA webpage](#) provides information relating to submission requests.
- Please note that due to the coronavirus, FOIA compliance is being processed remotely and and may result in longer than usual processing times.
- If you are looking to submit or pay for Marine Event Permits, Fishing Derby and Fish Importation/Liberation Permits, Radiation Registrations (DTX and RMI), Stormwater Registrations (Construction, Industrial and No Exposure) or Underground Storage Tank Notifications please visit our [ezFile website](#).
- Access to DEEP's records center at 79 Elm Street, Hartford is not available to the public. Requests for records may be sent to DEEP.RecordsCenter@ct.gov and requests will be fulfilled in the order in which they are received, once the "Stay Safe, Stay Home" order is lifted.

Send documents electronically to staff, even if you recently mailed paper documents.

The paper mail distribution system is occurring, though is affected by COVID-19 mitigation strategies affecting document distribution.



Electronic File Transmittal Website

- ▶ Transmittal site for the Remediation Division and Leaking Underground Storage Tanks Program
 - ▶ <https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/Transmittal-of-Documents#ElectronicInstructions>
- ▶ Other DEEP Programs are or are planning to set up uploading sites



Website Instructions

Prior to uploading the electronic document:

1. Email DEEP.cleanup.upload@ct.gov to obtain a login password.

This password will be used for all future uploads.

- If at some point your password does not work, please email DEEP.cleanup.upload@ct.gov because the password may have changed for security purposes.

2. Download the [Electronic Document Transmittal Form](#) and follow all instructions on the transmittal form.
3. The first page of the Electronic Transmittal Form must be embedded as the first page of the electronic document prior to uploading.
4. Each electronic document must be named per the Electronic Transmittal Form's specific instructions and [saved as a PDF/A](#).



Electronic Transmittal Form for DEEP Remediation and LUST Secure File Transfer (SFT)

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
REMEDIATION DIVISION
LEAKING UNDERGROUND STORAGE TANK COORDINATION PROGRAM
www.ct.gov/deep

This Electronic Transmittal Form is to be used when submitting a document to the Connecticut SFT website. This form must be completed and included as the cover sheet of your electronic document.

Requirements for Transmittals through the SFT website:

- Only document types identified in the dropdown lists in Part III below may be submitted through the SFT website.
- Documents submitted through the SFT website must include all applicable figures, tables and laboratory data.
- Files must be formatted as PDF/A and use the appropriate naming convention:
 - For Remediation Filings: REM_RemID_DocumentType_DateofDocument
Example: REM 1234 MonitoringReport 01-01-2001
 - For LUST Filings: LUST_SiteAddress_Town_AbbreviationForDocumentType_DateofDocument
Example: LUST 1MainStreet Hartford ESA 01-01-2001
Note: For AbbreviationForDocumentType use appropriate abbreviation at [Transmittal of Documents](#)

Part I: Program Type (Select either Remediation or LUST as your Primary Program Type)

Remediation

Primary Program: Select Primary Program

*Rem ID: [REDACTED] (required)

LUST

UST Facility ID: [REDACTED] (if applicable)

Spill Case Number: [REDACTED] (if known)

Part II: Site Information

Site Name: [REDACTED]

Site Address: [REDACTED]

City/Town: [REDACTED]

State: CT

Zip Code: [REDACTED]

Secondary Programs (complete as many as applicable for this document):

Program: Select Secondary Program

Program: Select Secondary Program

Program: Select Secondary Program

Program: Select Secondary Program

Project ID: [REDACTED]

Project ID: [REDACTED]

Project ID: [REDACTED]

Project ID: [REDACTED]

Provide Project ID for each secondary program if it is known.

Each program has a unique ID (i.e. Rem ID, Spill Case #, UST Facility ID, PCB File #, etc.)

Part III: Document Information

Remediation: Remediation Document Type

LUST: LUST Document Type

Date of Document: Select Date

Select version

Part IV: Submitter Information

Name: [REDACTED]

E-mail: [REDACTED]

Name of company/business this document is being submitted on behalf of: [REDACTED]

How to name your document

What is the primary program?

If you are aware of other programs involved



Choice of Programs

Under Primary Program choices are:

- Property Transfer Program
- Voluntary Remediation Program
- Brownfields Program
- Significant Environmental Hazard Program
- Administrative or Consent Order
- RCRA Corrective Action
- Federal Superfund

Under the Secondary Choice Programs we also added :

- Emergency Response Unit
- LUST
- PCB Program



Electronic Transmittal Form for DEEP Remediation and LUST Secure File Transfer (SFT)

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REMEDIATION DIVISION
LEAKING UNDERGROUND STORAGE TANK COORDINATION PROGRAM
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Primary Program: Select Primary Program

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Spill Case Number: [REDACTED] (if known)

Part II: Site Information

Site Name: [REDACTED]

Site Address: [REDACTED]

City/Town: [REDACTED]

State: CT

Zip Code: [REDACTED]

Secondary Programs (complete as many as applicable for this document):

Program: Select Secondary Program

Program: Select Secondary Program

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Project ID: [REDACTED]

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Remediation: Remediation Document Type

LUST: LUST Document Type

Date of Document: Select Date

Select version

Part IV: Submitter Information

Name: [REDACTED]

E-mail: [REDACTED]

Name of company/business this document is being submitted on behalf of: [REDACTED]

How to name your document

What is the primary program?

If you are aware of other programs involved

Document Types

Annual Report	Request for Environmental Land Use Restriction (ELUR) Temporary Release
Audit Response document	Request for Exemption from Volatilization Criteria by Demonstrating no building can be constructed
Change of LEP Notification	Request for Indoor Air Monitoring Plan
Completion of Investigation Report	Request for Reuse of Polluted Soil
Covenant Not to Sue	Request for Schedule Extension
ECO Checklist	Request for Variance Due to GW Technical Impracticability
Ecological Risk Assessment or Sediment Submittal	Request for Widespread Polluted Fill Variance
Final Investigation Report	Schedule
Phase 1 Report	SEH abatement plan
Phase 1 SOW	SEH additional action plan
Phase 2 Report	SEH initial action report
Phase 2 SOW	SEH notification
Phase 3 Report	SEH status update: drinking water and groundwater
Phase 3 SOW	SEH status update: soil
Public Notice of RAP	SEH supplemental data report
QAPP	SEH well inventory report
Receptor Survey	SLERA Risk Assessment Report
Remedial Action Plan (RAP)	Subsurface Investigation Report
Remedial Action Report (RAR)	Summary Report
Remedial Design Report	Target Brownfield Remedy Checklist
Request for Alternative Means of Demonstrating Compliance	Verification- 133y
Request for Criteria for Additional Polluting Substances or Alternative Criteria	Verification- final
Request for Ecological Risk Assessment or Sediment Submittal	Verification- interim
Request for Engineered Control	Verification- portion interim
Request for Environmental Land Use Restriction (ELUR)	Verification- release area
Request for Environmental Land Use Restriction (ELUR) Final Release	Verification- supporting form IV
	Verification-portion



Sample Instructions

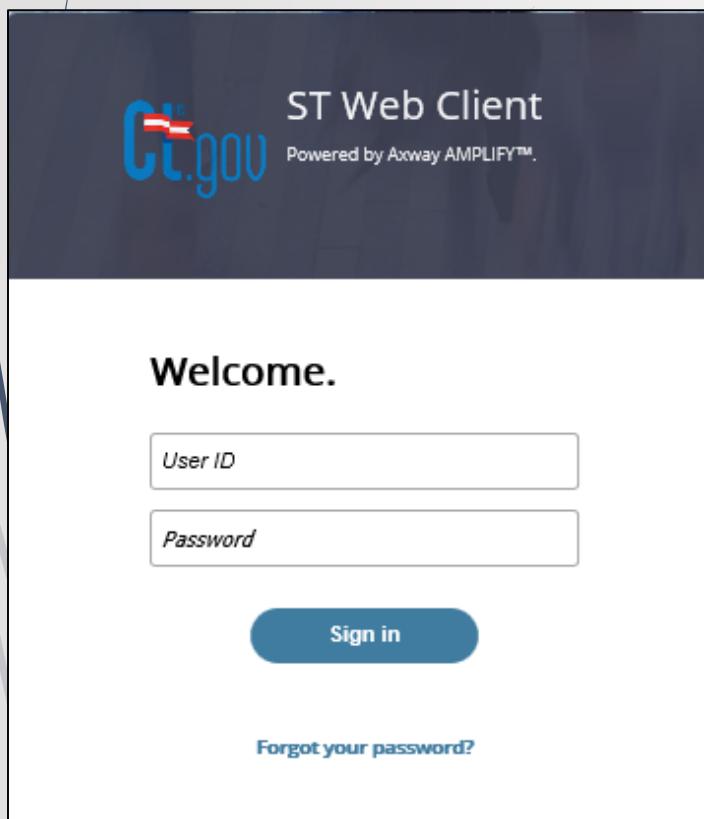
Secure File Transfer (SFT) instructions:

1. Go to the Connecticut **Secure File Transfer (SFT) website** (<https://sft.ct.gov>)
2. Enter username: **deepcleanupdocuments** (same for all users)
Enter password: (See step 1 above)
3. Browse for the document(s) to be uploaded. (Please confirm the transmittal form is embedded as the first page of each document and the file name is correct.)
4. Select the document(s) to be uploaded and then select Upload File.

If you experience problems with the SFT website or uploading a document, please view our Electronic Transmittal FAQs below or call **860-424-3705** for Remediation documents and **860-424-3376** for LUST documents.



Transmitting Documents <https://sft.ct.gov>



ST Web Client
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Ct.gov

Welcome.

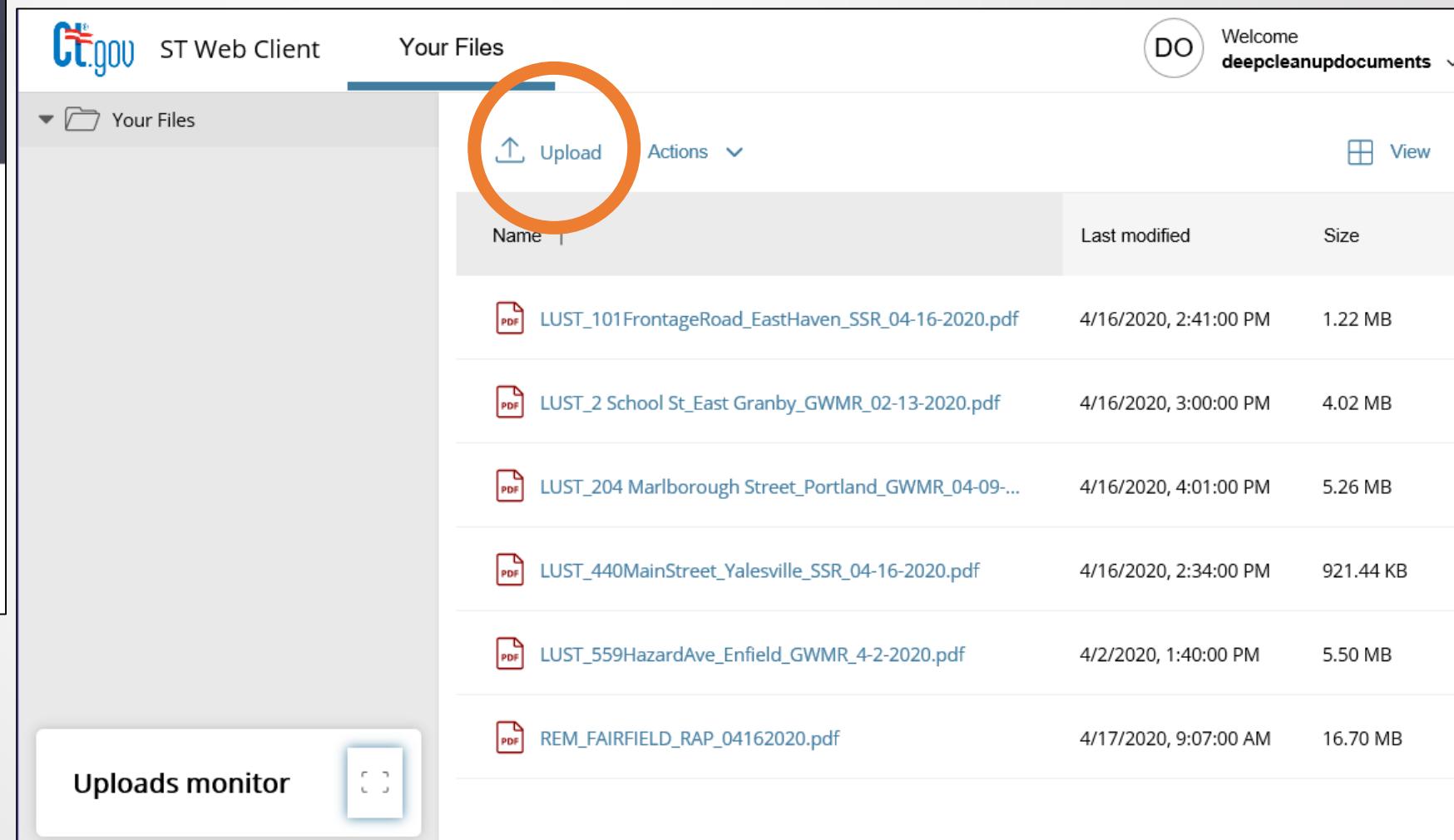
User ID

Password

Sign in

[Forgot your password?](#)

Use the Username and
Password identified by
program



ST Web Client

Ct.gov

Your Files

DO Welcome deepcleanupdocuments

View

Upload

Name | Last modified | Size

Name	Last modified	Size
LUST_101FrontageRoad_EastHaven_SSR_04-16-2020.pdf	4/16/2020, 2:41:00 PM	1.22 MB
LUST_2 School St_East Granby_GWMR_02-13-2020.pdf	4/16/2020, 3:00:00 PM	4.02 MB
LUST_204 Marlborough Street_Portland_GWMR_04-09-...	4/16/2020, 4:01:00 PM	5.26 MB
LUST_440MainStreet_Yalesville_SSR_04-16-2020.pdf	4/16/2020, 2:34:00 PM	921.44 KB
LUST_559HazardAve_Enfield_GWMR_4-2-2020.pdf	4/2/2020, 1:40:00 PM	5.50 MB
REM_FAIRFIELD_RAP_04162020.pdf	4/17/2020, 9:07:00 AM	16.70 MB

Uploads monitor



Questions or Comments?

Please Speak into Microphone
and State Your Name



www.ct.gov/dep/remediationroundtable



2020 Legislative Updates, Wave II RSR and EUR Regulation Updates

Graham Stevens, Bureau Chief,
Water Protection and Land Reuse



Questions or Comments?

Please Speak into Microphone
and State Your Name



www.ct.gov/dep/remediationroundtable



Update on General Permit Renewal for In Situ Enhanced Aerobic Biodegradation Remediation

Ray Frigon, Remediation Division Assistant Director



Questions or Comments?

Please Speak into Microphone
and State Your Name



www.ct.gov/dep/remediationroundtable

REMEDIATION ROUNDTABLE -
7/21/2020

PFAS Action Plan Update

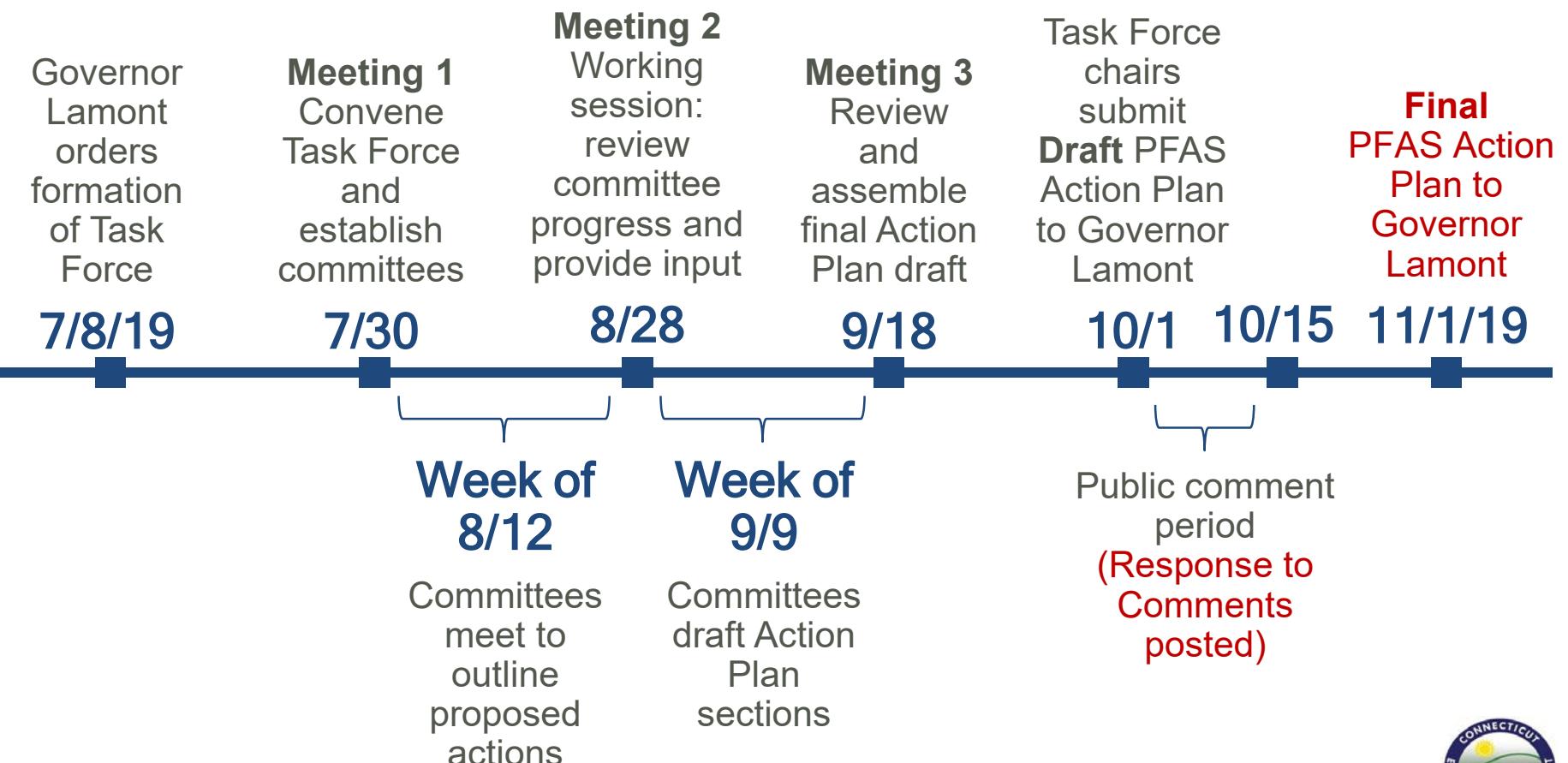
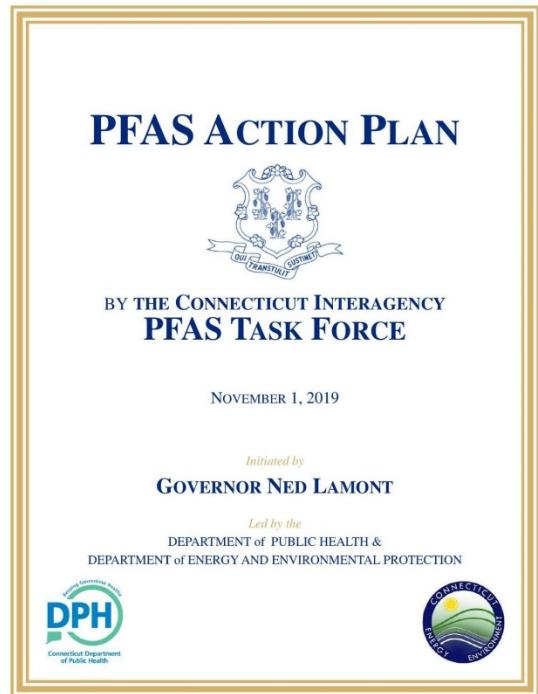
Speakers: Ray Frigon, Shannon Pociu, and Anna Hagstrom, CT DEEP Remediation Division



CT Interagency PFAS Task Force

PFAS ACTION PLAN

www.ct.gov/CTPFASTaskForce



DEEP UPDATES

Request for proposals

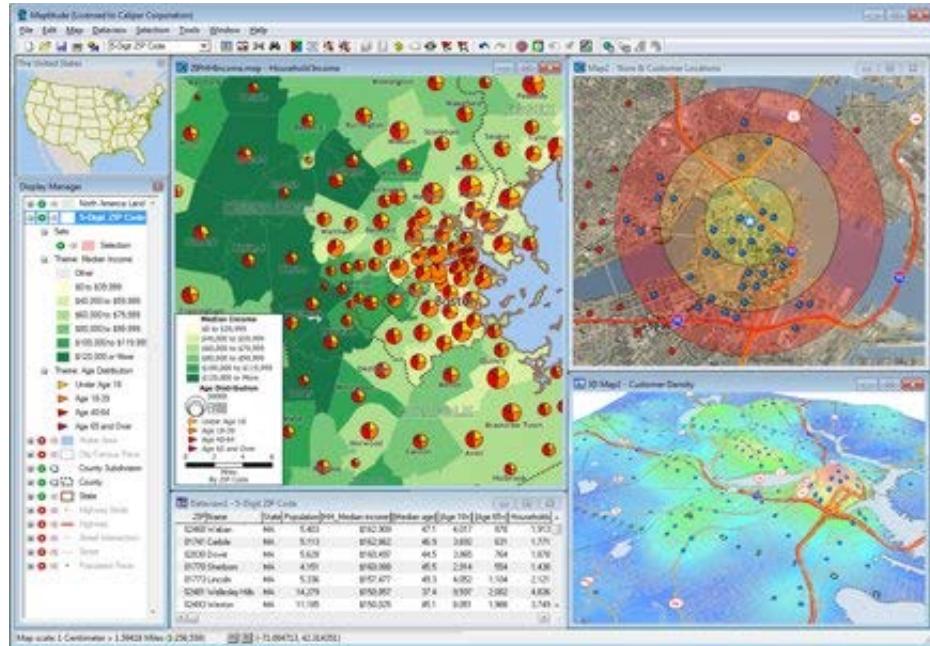
- PFAS sampling in drinking water and environmental media
- Issued on 7/10/2020 to contractors eligible under DAS Contract Award No. 18PSX0153
- Proposals due at 4:00 PM on 7/23/2020



DEEP UPDATES

Projects with current in-house funding

- Underway: GIS updates to support future statewide sampling, evaluation of consumer products and packaging
- Coming soon: POTW influent/effluent testing





GOVERNOR'S PROPOSED FY 2021 BUDGET

\$2 million bond authorization

- Take-back program for municipal and State AFFF firefighting foam
- Private well testing, resources for residents with PFAS-contaminated wells



\$0.5 million from
Capital Equipment Purchase Fund

- Instrumentation for PFAS analysis in drinking water at the State Public Health Laboratory

LEGISLATIVE UPDATE

PFAS-Related Raised Bills

- Environment Committee: Raised SB No. 297
- Public Health Committee: Raised HB No. 5288
- Public Health Committee: Raised HB No. 5291



ENVIRONMENT COMMITTEE



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

- On July 1, 2021, bans training with class B firefighting foam containing intentionally added PFAS (i.e., AFFF)
- On July 1, 2022, bans use of AFFF for firefighting unless the DEEP Commissioner fails to identify an alternative by April 1, 2021
- Directs the DEEP Commissioner to develop, by October 1, 2021, a take-back program for municipal AFFF, using best practices for disposal

H.B. 5288 – An Act Concerning PFAS

- On January 1, 2021, bans training with class B firefighting foam containing intentionally added PFAS. Directs DPH to assist with the transition to PFAS-free alternatives.
- Directs DPH to develop and implement, by January 1, 2021, a plan for statewide testing of water supply sources, water supplies, and bottled water for PFAS and for public education on the potential risks of drinking PFAS-contaminated water

PUBLIC HEALTH COMMITTEE



H.B. 5291 –

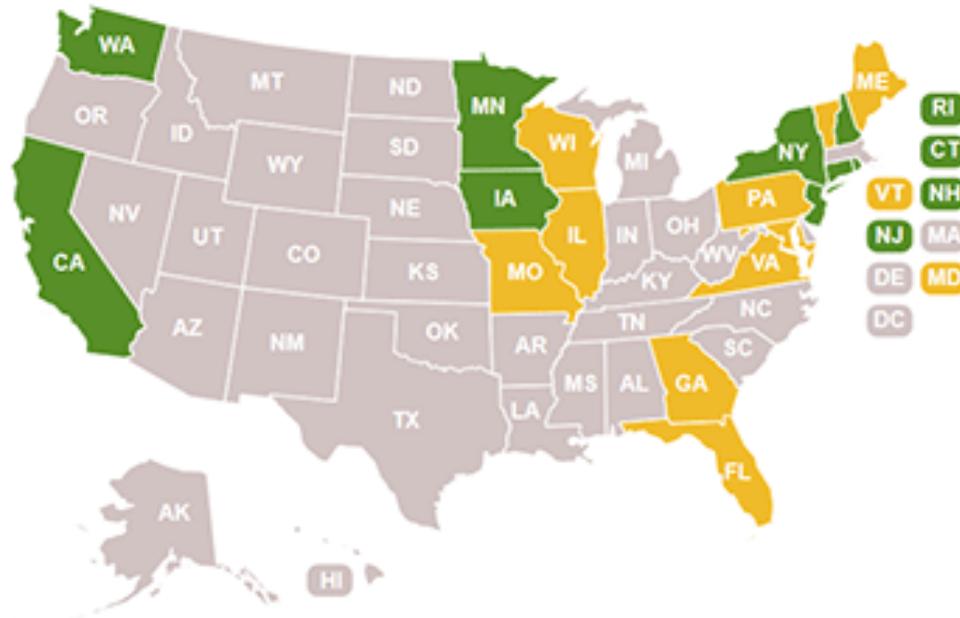
An Act Limiting the Use of PFAS & Expanded Polystyrene in Food Packaging

- Directs DPH to “examine the availability of reasonable alternatives” to any food packaging product containing intentionally added PFAS or expanded polystyrene, and to report back to the Public Health Committee by January 1, 2021
- Starting January 1, 2022, prohibits the manufacture, sale, or distribution of any such food packaging for which DPH has identified a reasonable alternative

PUBLIC HEALTH COMMITTEE



TOXICS IN PACKAGING MODEL LEGISLATION



TPCH member states
Non-member states with legislation
States without legislation

Current model legislation:

- Prohibits sale or distribution of packaging containing intentionally introduced **lead, mercury, cadmium, or hexavalent chromium**
- Prohibits incidental concentrations above 100 ppm
- Some exemptions (e.g., recycled packaging)
- Basis for CGS §22a-255(g-m)

Proposed updates:

- Prohibits sale or distribution of packaging containing intentionally introduced **phthalates or PFAS**
- Prohibits incidental phthalates above 100 ppm
- **Prohibits PFAS in detectable concentrations**
- No exemptions for PFAS or phthalates
- Open for [public comment](#) until 8/24/20



NORTHEAST CONFERENCE
THE SCIENCE OF PFAS:
Public Health & The Environment

Tuesday, March 31, 2020 - Wednesday, April 1, 2020

UPCOMING
NEWMOA
NORTHEAST WASTE MANAGEMENT OFFICIALS' ASSOCIATION

- Rescheduled for December 1-2, 2020
- Third day specifically for state regulators

REMEDIATION STANDARD REGULATIONS

If PFAS are COCs based on site history/operations, they must be included in site characterization.

PFAS must be addressed as **Additional Polluting Substances** at Remediation Sites subject to the RSRs.

- Utilize EPA's RfD of 0.00002 mg/kg/day
- Soil Direct Exposure Criteria – use equations in RSR Section 22a-133k-2(b)(5)
- Groundwater Protection – Adopts CT DPH's DWAL of 70 ppt for \sum PFOA, PFOS, PFHxS, PFNA, and PFHpA

OR

- Calculate Site-Specific Criteria for DEEP review and approval



REMEDIATION STANDARD REGULATIONS



Remediation Standard	APS Criterion*
Residential Direct Exposure Criterion	1.35 mg/kg
Industrial/Commercial Direct Exposure Criterion	41 mg/kg
GA Pollutant Mobility Criterion	1.4 µg/kg
GB Pollutant Mobility Criterion	14 µg/kg
Groundwater Protection Criterion (Adopts DPH Drinking Water Action Level)	70 ng/L
Surface Water Protection Criterion	In Development

*Applies to Σ PFOA, PFOS, PFHxS, PFNA, & PFHpA

RELEVANT WEB LINKS
[APS webpage](#)
[APS Fast-Track Approval Form](#)



SIGNIFICANT ENVIRONMENTAL HAZARDS

CGS Section 22a-6u(c)

After July 1, 2015, if a TEP in the course of investigating and remediating pollution on or emanating from a parcel determines **pollution has affected a** public or private drinking **water supply well...with any substance** from the release **for which there is no RSR criterion**,

- TEP shall notify client and owner of property within 7 days
- Owner of parcel that is the source of pollution to a drinking water well shall, within 30 days:
 - 1) Perform confirmatory sampling of well and submit report to Commissioner with a plan for further action, and
 - 2) Notify Commissioner in writing



GENERAL PERMIT FOR GROUNDWATER REMEDIATION WASTEWATER



- Issued 2/21/18, includes emerging contaminants
- Section 3(b)(1)(B)(xii) – Authorization requires:
 - 1) Complete and sufficient registration, and
 - 2) Commissioner-issued **Approval of Registration** if Commissioner determines ECs “are present at levels that require development of site-specific monitoring requirements and/or discharge limitations.”
- Section 5(a) – Required screening analysis:
 - Section 5(a)(2)(F) – Analysis for ECs with Clean Water Act approved methods. Ongoing screening or effluent monitoring required if directed in writing by Commissioner.
 - Section 5(a)(2)(G) – Analysis of wastewater for any pollutant “toxic, hazardous, or detrimental” or “having the potential to bioaccumulate, bioconcentrate or adversely affect aquatic life” that has been “handled, stored, released, or disposed of at or adjacent to the site where wastewater originates.”



Next Steps

AMBIENT & SURFACE WATER PROTECTION CRITERIA

Remediation Standard	APS Criterion*
Residential Direct Exposure Criterion	1.35 mg/kg
Industrial/Commercial Direct Exposure Criterion	41 mg/kg
GA Pollutant Mobility Criterion	1.4 µg/kg
GB Pollutant Mobility Criterion	14 µg/kg
Groundwater Protection Criterion (Adopts DPH Drinking Water Action Level)	70 ng/L
Surface Water Protection Criterion	In Development

GUIDANCE ON ANALYSIS OF NON-DRINKING WATER MATRICES

- Sampling methods
- Analytical methods
- Analytes to be reported

*Applies to Σ PFOA, PFOS, PFHxS, PFNA, & PFHpA

QUESTIONS?

[DEEP PFAS Webpage](#)

Contact Information:

Raymond.Frigon@ct.gov
Shannon.Pociu@ct.gov
Anna.Hagstrom@ct.gov





Per- and Polyfluoroalkyl Substances (PFAS) From an LEP's Perspective

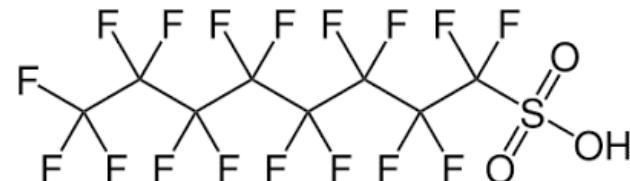
Remediation Round Table

July 2020



Agenda/Objective

- Challenges for LEPs
 - Discuss 3 challenges we have encountered as LEPs practicing in Connecticut
- Preliminary Sampling Trends in CT
 - Based on property usage
 - Caution, small data set



Challenges For LEPs

#1: Potential for Cross Contamination During Sampling

- Potential for PFAS to be present in many items
 - Used in everyday life
 - Present in sampling equipment
 - Alpha Labs/TRC

How you can address

- Review materials and equipment, don't forget to call drillers
- Develop PFAS-specific sampling SOPs
- Train staff
- **Use blanks to confirm and defend data**



Cross Contamination

Our experience with blanks

Collected 45 equipment, field and/or trip blanks

- 6 different samplers
- 9 different labs
- Majority of analyses included 24 or more PFAS compounds

Results

- 40 blanks were ND (90%)
- Reporting limits of 0.002-0.009 ug/L



Cross Contamination

Outliers

1. Trace PFBA detected in 4 blanks, same site and event
 - 3-10 ng/L
 - Connecticut 5 not detected
 - Early sampling, suspect was present in blank water
2. Single groundwater sampling event, one of multiple blanks
 - Concentrations in ppb range, orders of magnitude greater than site concentrations
 - Two additional quarterly rounds of sampling confirmed initial site groundwater results with no blank detection

Conclusions

It is possible to prevent cross contamination

- Blanks, although costly, are recommended to confirm sampling procedures and defend data



2: Background Contributions

- Similar to cross contamination, potential for background contributions
- Published background soil study in Vermont:
 - PFOA and PFOS detected state-wide

Our results in CT

- 21 background samples from four sites
- Hydrogeology understood well
- PFAS detected in all samples but one
- Primary constituents: PFOS, PFOA, PFHxS



Background Results

Location	Possible Sources	# Samples	# Detects	CT5 Range (ng/L)	Maximum Total PFAS
Industrial	Manufacturing: - Plastics - Coating - Plating Fire suppression Fire training WWTP Landfills	7	7	6 samples @ 8 – 95 1 sample @ 195	413
Commercial/ Residential	Fire houses Car wash Septic systems Dry cleaners? Salvage yards?	11	10	9 samples @ ND - 15 2 samples @ 50 & 59	95



Background Summary

- Likely background contributions exist at all sites
- If detect PFAS, need to check for background contributions
- Need to evaluate if its actually background, not airborne deposition from stack or vents at Site
 - Use Conceptual Modeling Process



3: Baseline Clean-up Criteria

- Additional polluting substance criteria
 - Soil (both PMC and DEC)
 - Groundwater just GWPC, no SWPC
- For GB Sites, the GWPC typically do not apply so no current numeric clean-up criteria
- Surface water guidance levels based on human fish consumption are in the 5 to 15 ppt range
 - Same order of magnitude as background
 - Hopeful we can develop policy to address so sites can be brought to closure



Lack of Criteria for all Constituents

- CT APS addresses 5 compounds
 - We are currently looking for 24 or more PFAS
 - How do we address those other than the CT 5
 - Hopeful we can develop policy to address, so sites can be brought to closure

General Trends

- Car Wash
- General Manufacturing
- Plating
- Fire Training



Car Wash



Closed for 10 years

Collected 6 waste water samples - underground wash water recycling tanks

- Sum of CT 5 ranged from 32 to 98 ng/L
- 3 samples exceeded 70 ng/L action level
- PFOA primary constituent detected

Groundwater samples from two downgradient wells

- Sum of CT 5 were 624 and 1,287 ng/L
- Total PFAS at 859 and 1,603 ng/L
- PFOA and PFHxS primary constituents



General Industry Trends (3 Sites)

Groundwater

Two sites multiple locations above upper end of range of background

1. Aerospace testing facility
 - *likely historic foam fire suppression systems*
2. Coating and adhesives manufacturer
 - *historic product landfills*



GB Sites, no current groundwater criteria

Soil

- Data from one site (GB), many NDs
- No exceedances of APS criteria including Res DEC



General Industrial

Business Type	Media Sampled	# Samples	# Detects	Sum of CT5	Primary PFAS	Max Total PFAS
Cardboard Manufacturer (Inactive)	Groundwater	6	6	27 - 57 ng/L	PFOS	NA
Coating & Adhesive Manufacturer (Active)	Soil	57	12	0.3 - 9.7 ppb	PFOS	37.3 ppb
	Groundwater	23	22	4 – 35 ng/L 1 @ 904	PFOS & PFOA	1,011 ng/L
Aerospace Testing Facility (Active)	Groundwater	17	17	300 - 5,100 ng/L	PFOS & PFOA	10,742 ng/L



Plating Trends

Groundwater – 4 Sites

- Present in all samples
 - 10 times or more > than background
- At one site, highest concentration detected downgradient of WWTP
- All GB groundwater sites
 - no current groundwater clean up criteria



Plating

Current Status	Media Sampled	# Samples	# Detects	Sum of CT5	Primary PFAS	Max Total PFAS
Active	Groundwater	2	2	115 - 138 ng/L	PFOS & PFOA	152 ng/L
Historic	Soil	1	0	NA	NA	NA
	Groundwater	1	1	276 ng/L	PFOS & PFHxS	307 ng/L
Historic	Groundwater	3	3	587- 641 ng/L	PFOS & PFHxS	710 ng/L
Historic (WWTP Included)	Groundwater	4	3	ND<4 - 6,400 ng/L	PFOS & PFOA	7,031 ng/L



Fire Training:

- Sites with highest impact
 - Consistent with trends across US
 - Present at sites not used for decades
 - Present at sites with no existing knowledge of use
 - All yielded exceedances of 70 ng/L standard
- No exceedances of APS Res DEC
- Three sites in GA areas



General Fire Training

Area Type Type	Media Sampled	# Samples	# Detects	Sum of CT5	Primary PFAS	Max Total PFAS
Active Municipal Fire Training (No known use of AFFF)	Soil	6	1	134 ppb	PFOS	NA
	Groundwater	3	3	2 to 116.6 ng/L	PFOS & PFHpA	NA
Industrial (Historic Fire Training Area)	Groundwater	6	6	78-606 ng/L	PFOS & PFHxS	900 ng/L
Industrial (Historic Fire Training Area)	Soil	9	9	0.91 to 1.73 ppb	PFOA	1.73 ppb
	Groundwater	3	3	512-1,390 ng/L	PFOS & PFHxS	1,500 ng/L



Active Regional Fire Training School

Media Sampled	# Samples	# Detects	Sum of CT5	Primary PFAS	Max Total PFAS
Soil	29	26	8 - 424 ppb	PFOS & PFHxS	440.8 ppb
Groundwater	6	6	424 - 48,903 ng/L	PFOS & PFHxS	49,997 ng/L
Potable Water	6	4 (same property)	168-208 ng/L	PFOA	396 ng/L



Closing Thoughts:

- In general, if you look for PFAS you have a good chance of finding them
 - Have found non detect concentrations, especially in soil
- Cross contamination is preventable
 - Good planning – use blanks to confirm
- Have to consider background contributions, use CSM
- Have not seen an exceedance of APS Res DEC
- Site Closure
 - Hopeful that we can develop policies to address SWPC and all constituents evaluated



Contact



A faint, light blue molecular network graphic is positioned in the background, consisting of numerous small circles of varying sizes connected by thin lines, creating a complex web-like structure.

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Questions or Comments?

Please Speak into Microphone
and state your name

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Remediation Roundtable



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A vibrant, abstract background image of a coastal landscape. The foreground is filled with lush green fields and rolling hills. In the distance, a body of water with deep blue and teal hues stretches towards a hazy horizon. The overall composition is dynamic, with brushstrokes creating a sense of movement.

Remediation Roundtable

Next meeting: October 20, 2020