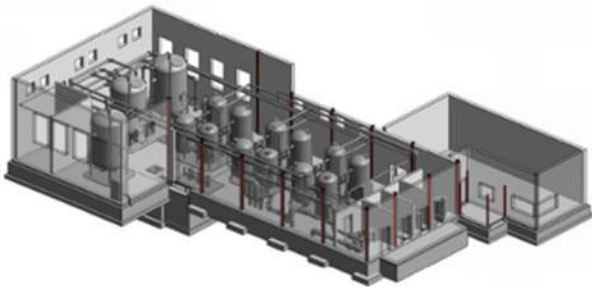
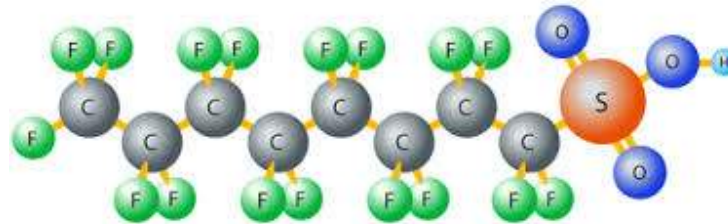


New Hampshire Water Pollution Control Association

Current and Anticipated PFAS Regulatory Impacts on WWTF Management



April 14, 2023



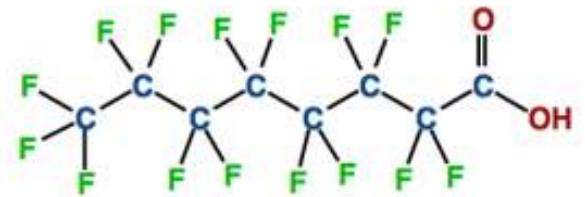
AGENDA

- What are PFAS and why do we care?
- Where are PFAS used for and how do they get into our environment.
- Current Regulatory Status
 - EPA vs State
 - Wastewater/Direct Discharge.
 - Biosolids.
 - Surface Water.
- What can You Expect?
- What can you Do?

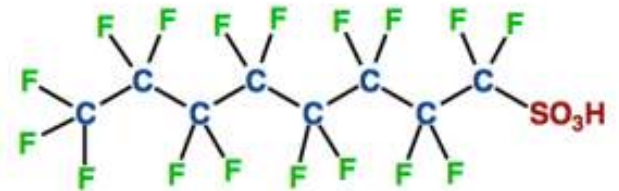


What are PFAS?

- Per- and Polyfluoroalkyl Substances (EPA Definition)
- PFAS are partial to fully fluorinated, organic compounds that have been produced in the largest amounts within the United States
- PFAS are the family of synthetic chemicals that include long chains of carbon and fluorine
- Have unique lipid- and water-repellent characteristics, and are used as surface-active agents in various high-temperature applications and as a coating on surfaces that contact with strong acids or bases



PFOA - perfluorooctanoic acid



PFOS - perfluorooctanesulfonic acid

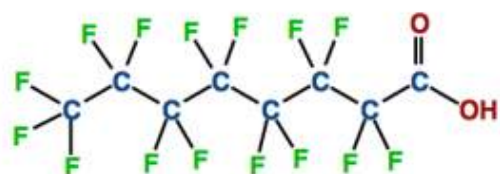
Structural Makeup

- Perfluorinated Alkyl Acids (Terminal, NO BREAKDOWN)
 - Negatively charged
 - Low vapor pressure
 - Water soluble

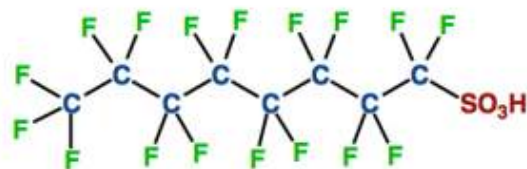
PFAAs generally act as surfactants with tail in the air and head in water

Perfluorinated TAIL

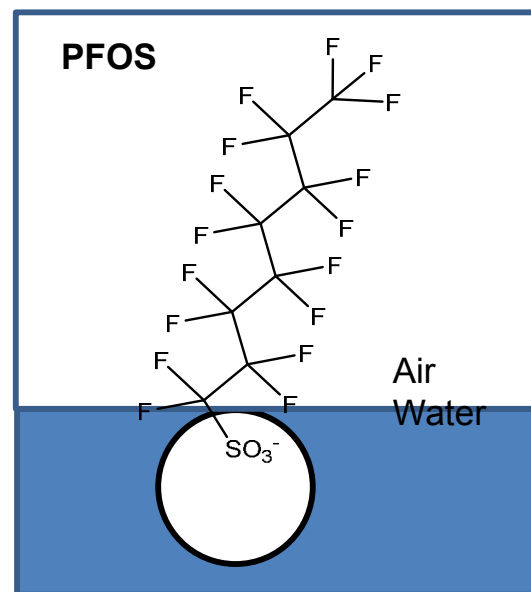
Anionic HEAD



PFOA - perfluorooctanoic acid

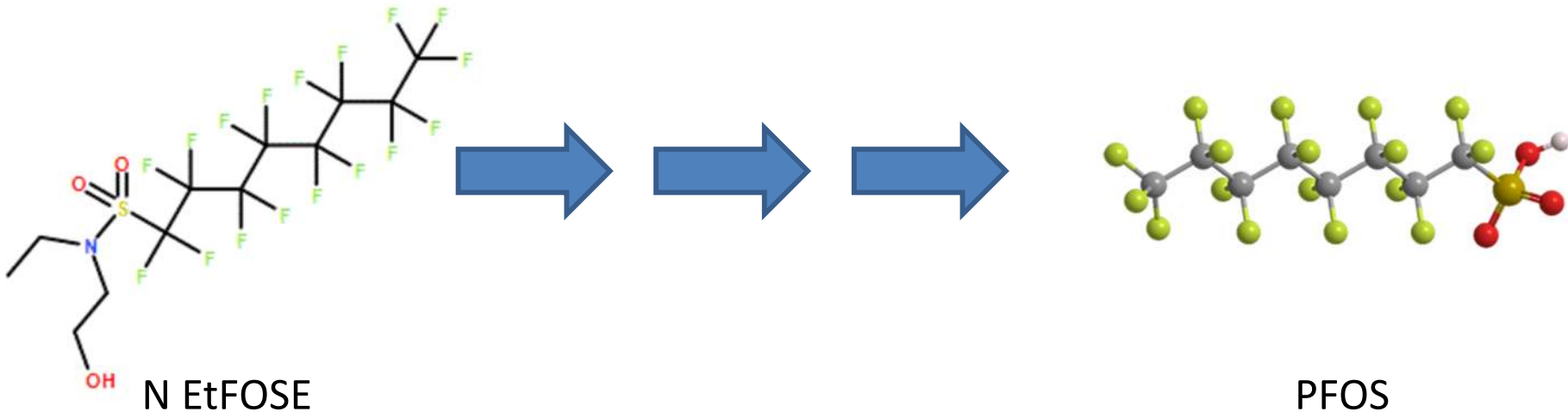


PFOS - perfluorooctanesulfonic acid



Precursors

- Polyfluorinated Alkyl Substance (Abiotic and Biotic Breakdown Possible)
 - State of charge may dominate retardation
 - Anions > Cations > Zwitterions
 - Short Chains generally migrate faster
 - Cation exchange onto soils may be significant....on par with organic carbon
 - **Transformation into Perfluorinated end products may occur with distance from source and/or oxidization.**

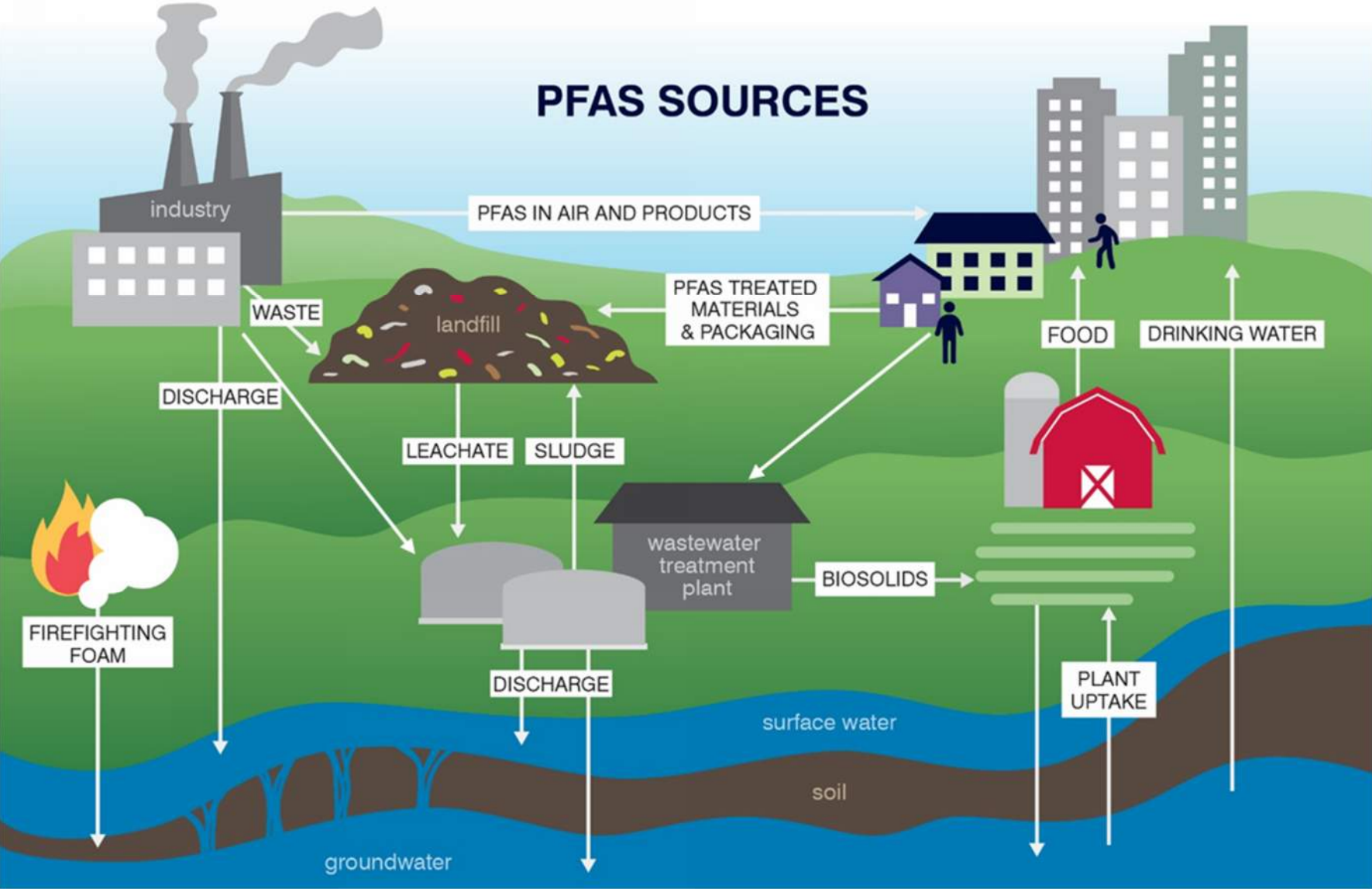


Historical Uses

- Used in fire fighting and odor control foams, Aqueous Film-Forming Foam (AFFF)
- Also used in industrial and commercial products including:
 - Textiles and leather products (Gore-Tex, Polartec)
 - Metal plating
 - Stain-resistant fabric
 - Photographic industry/photolithography
 - Semi-conductors
 - Paper and packaging (fast food wrappers)
 - Coating additives (Teflon)
 - Cleaning products
 - Pesticides



PFAS SOURCES



Who's Driving Regulation?

OEPA

United States
Environmental Protection
Agency

PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024



EPA's integrated approach to PFAS is focused on three central directives:

- **Research.** Invest in research, development, and innovation to increase understanding of PFAS exposures and toxicities, human health and ecological effects, and effective interventions that incorporate the best available science.
- **Restrict.** Pursue a comprehensive approach to proactively prevent PFAS from entering air, land, and water at levels that can adversely impact human health and the environment.
- **Remediate.** Broaden and accelerate the cleanup of PFAS contamination to protect human health and ecological systems.

31 Key EPA Actions

Publish national PFAS testing strategy	<i>Expected Fall 2021</i>
Ensure a robust review process for new PFAS	<i>Efforts Ongoing</i>
Review previous decisions on PFAS	<i>Efforts Ongoing</i>
Close the door on abandoned PFAS and uses	<i>Expected Summer 2022</i>
Enhance PFAS reporting under the Toxics Release Inventory	<i>Expected Spring 2022</i>
Finalize new PFAS reporting under TSCA Section 8	<i>Expected Winter 2022</i>
Undertake nationwide monitoring for PFAS in drinkingwater	<i>Final Rule Expected Fall 2021</i>
Establish national primary drinking water reg for PFOA and PFOS	<i>Proposed Rule Fall 2022, Final Rule Expected Fall 2023</i>
Publish the final toxicity assessment for GenX and five additional PFAS	<i>Expected Fall 2021 and Ongoing</i>
Publish health advisories for GenX and PFBS	<i>Expected Spring 2022</i>
Restrict PFAS discharges from industrial sources	<i>Expected 2022 and Ongoing</i>
Leverage NPDES permitting to reduce PFAS discharges to waterways	<i>Expected Winter 2022</i>
Publish multi-laboratory validated analytical method for 40 PFAS	<i>Expected Fall 2022</i>
Publish updates to PFAS analytical methods to monitor drinkingwater	<i>Expected Fall 2024</i>
Publish final recommended ambient water quality criteria for PFAS	<i>Expected Winter 2022 and Fall 2024</i>
Monitor fish tissue for PFAS and evaluate human biomarkers for PFAS	<i>Expected Summer 2022</i>
Finalize list of PFAS for use in fish advisory programs	<i>Expected Spring 2023</i>
Finalize risk assessment for PFOA and PFOS in biosolids	<i>Expected Winter 2024</i>
Propose to designate certain PFAS as CERCLA hazardous substances	<i>Proposed rule expected Spring 2022; Final rule expected Summer 2023</i>

31 Key EPA Actions

- Issue advance notice of proposed rulemaking on various PFAS under CERCLA
- Issue updated guidance on destroying and disposing of certain PFAS-containing materials
- Build the technical foundation to address PFAS air emissions
- Develop and validate methods to detect and measure PFAS in the environment
- Advance the science to assess human health and environmental risks from PFAS
- Evaluate and develop technologies for reducing PFAS in the environment
- Engage directly with affected communities in every EPA Region
- Use enforcement tools to better identify and address PFAS releases at facilities
- Accelerate public health protections by identifying PFAS categories
- Establish a PFAS Voluntary Stewardship Program
- Educate the public about the risks of PFAS
- Issue an annual public report on progress towards PFAS commitments



- Expected Spring 2022*
- Expected by Fall 2023*
- Expected Fall 2022 and Ongoing*
- Ongoing Actions*
- Ongoing Actions*
- Ongoing Actions*
- Expected Fall 2021 and Ongoing*
- Ongoing Actions*
- Expected Winter 2021 and Ongoing*
- Expected Spring 2022*
- Expected Fall 2021 and Ongoing*
- Winter 2022 and Ongoing*



EPA's PFAS Strategic Roadmap: A Year of Progress

November 2022

- 1) Proposed to designate two PFAS as CERCLA hazardous substances
- 2) Released drinking water health advisories – **Proposed MCLs (6 PFAS) 2023**
- 3) Laid the foundation for enhancing data on PFAS.
This included an order under EPA's National PFAS Testing Strategy requiring companies to conduct PFAS testing, and nationwide sampling for 29 PFAS in drinking water starting in 2023
- 4) Began distributing \$10 billion in funding to address emerging contaminants under the Bipartisan Infrastructure Law (BIL).
- 5) Expanded the scientific understanding of PFAS. >30 scientific publications by EPA
- 6) Translated the latest science into EPA's cross-agency PFAS efforts.
- 7) Engaged with the public.

Status of PFAS Wastewater Regulations - EPA

EPA Discharge Permits

NPDES PERMITS (EPA Region 1)

- Many ~~DRAFT~~ NPDES permits recently issued with Per- and Polyfluoroalkyl substances sampling requirements (Report Only)
 - Use DRAFT EPA Method 1633 (previous permits delayed sampling until method approval)
 - Quarterly Sampling – Influent, Effluent and Sludge - PFHxS, PFHpA, PFNA, PFOS, PFOA, PFDA
 - **Sludge Disposal Concerns - dried sludge from \$18 to \$38 dry ton, \$140/ton wet sludge**
 - Targeting specific industries via Industrial Pretreatment Program (IPP) Requirements
 - Only requiring 1 grab sample per year

WHAT ARE THE REGULATORY LEVELS?.....none defined as yet

Status of PFAS Wastewater Regulations - EPA

- In April 2022, EPA proposed aquatic life criteria for PFOA (freshwater acute 49 mg/L and chronic 0.094 mg/L) and PFOS (freshwater acute 3.0 mg/L and 0.0084 mg/L chronic).

Table 1. Draft Recommended Freshwater Aquatic Life Water Quality Criteria for PFOA and PFOS

Criteria Component	Acute Water Column (CMC) ¹	Chronic Water Column (CCC) ²	Invertebrate Whole-Body	Fish Whole-Body	Fish Muscle
PFOA Magnitude	49 mg/L	0.094 mg/L	1.11 mg/kg ww	6.10 mg/kg ww	0.125 mg/kg ww
PFOS Magnitude	3.0 mg/L	0.0084 mg/L	0.937 mg/kg ww	6.75 mg/kg ww	2.91 mg/kg ww
Duration	1-hour average	4-day average	Instantaneous ³		
Frequency	Not to be exceeded more than once in three years, on average	Not to be exceeded more than once in three years, on average	Not to be exceeded more than once in ten years, on average		

¹ Criterion Maximum Concentration.

² Criterion Continuous Concentration.

³ Tissue data provide instantaneous point measurements that reflect integrative accumulation of PFOA or PFOS over time and space in aquatic life population(s) at a given site.

Proposed PFAS Designation as “Hazardous Substance”

September 6, 2022 - EPA proposes to designate PFOA and PFOS, including their salts and structural isomers -- as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund. [2022-18657.pdf \(govinfo.gov\)](#)

- Opens/Reopens Existing hazardous waste sites to PFAS assessment and remediation
- Potentially impacts disposal methods and costs for water treatment materials (carbon, ion exchange resin)
- Potentially impacts WWTF discharges, sludges, biosolids and their disposal
- Potentially impacts landfill operations – accepting materials and leachate treatment

Upcoming Milestones

Address PFAS in Biosolids:

EPA is working to complete a full risk assessment on PFOA and PFOS in biosolids for release in 2024. The Agency is set to reach a milestone in its biosolids efforts in late 2022 by releasing a draft biosolids risk-assessment screening framework for scientific peer review, which will estimate high end exposures for a wide range of chemical contaminants due to use and disposal of biosolids. PFAS in biosolids is an issue that requires enhanced coordination, and the Agency commits to working with key partners across the federal government, states, and the water, solid waste, and agricultural sectors

EPA's Approach

Consider the Lifecycle of PFAS. As EPA and its partners research, restrict, and remediate PFAS, the Agency will account for the breadth of potential contamination pathways and the potential impacts on a range of stakeholders from drinking water and wastewater treatment plants to farmers and ranchers.

Get Upstream of the Problem. EPA is committed to preventing PFAS from entering the environment in the first place. This is reflected in the Agency's actions to reduce PFAS discharges to waterways, their use in new ways, and gather new data on the prevalence, use, and effects of additional PFAS chemicals.

New Hampshire

ENVIRONMENTAL Fact Sheet



29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WEB-29

2022

Interim Best Management Practices for Emerging Contaminants in Certified Biosolids

What are biosolids?

"Biosolids" are defined by RSA 485-A:2, XXII as "any sludge derived from a sewage wastewater treatment plant that meets the standards for beneficial reuse specified by the Department [of Environmental Services]." In other words, biosolids are made by taking sludge produced from a sanitary source, such as a wastewater treatment facility (WWTF), and treating it in order to use it for beneficial use. In order to produce biosolids, a facility must obtain a certificate from the Sludge Quality Certification (SQC) Program through the New Hampshire Department of Environmental Services (NHDES). This program sets the standards that sludge is required to meet before it can be made into biosolids and used for beneficial use. More information about this program can be obtained from the [Sludge Quality Certification Fact Sheet](#).

What are emerging contaminants?

The EPA defines emerging contaminants "as a term used by water quality professionals to describe pollutants that have been detected in water bodies that may cause ecological or human health impacts, and typically are not regulated under current environmental laws. Sources of these pollutants include agriculture, urban runoff and ordinary household products (such as soaps and disinfectants) and pharmaceuticals that are disposed to sewage treatment plants and subsequently discharged to surface waters." Per- and polyfluoroalkyl substances (PFAS) are considered emerging contaminants. NHDES monitors emerging contaminants and works to establish screening standards within the SQC Program to protect human health and the environment.

Interim Best Management Practices

For industrial and commercial establishments:

- Educate the rate payers of your facility about emerging contaminants such as PFAS compounds. Inform them that your community produces biosolids and educate them on how they can help maintain high quality biosolids.
- Encourage them to avoid products that contain emerging contaminants. Suggest that they begin asking and investigating if those compounds are in the products they use. If so, they should seek to use other alternatives.

- Inform these partners that the NHDES Pollution Prevention Program (NHPPP) provides free, non-regulatory, confidential assistance with any pollution prevention questions. They can also provide information on new technologies, pollution prevention products and vendors, and fact sheets. Please contact them at [\(603\) 271-6460](tel:603-271-6460) for assistance.

For your facility:

- Screen and test your collection system and incoming side streams to determine if any sections contribute higher levels of emerging contaminants and trace the contaminants back to the source.
- Ensure your pretreatment program is prepared, involved and ready to investigate for emerging contaminants.
- Maintain a budget in order to screen for emerging contaminants.
- Screen septage and/or landfill leachate to evaluate if these sources will negatively impact the quality of your biosolids.
- Create an education program for residents on the benefits of biosolids and explain what they can do to help create reduce emerging contaminant loading onto the WWTF. Encourage them not to use or buy products that contain emerging contaminants.
- Document your efforts and include them in your SQC annual report.

For more information

Dealing with emerging contaminants is a challenge and NHDES encourages communities that produce biosolids to stay involved and informed on these issues. While NHDES will provide timely communication on important issues, you can still reach out to us at any time. If you have questions, comments or concerns, please contact the NHDES Residuals Management Section at [\(603\) 271-3571](tel:603-271-3571) or SludgeandSeptage@des.nh.gov. We are also available to provide technical assistance or to discuss any of the information provided in this fact sheet.

Primarily "Source" Reduction....and Monitoring

USGS Statewide Survey – Phase 1 – “Background”

Per- and polyfluoroalkyl substances (PFAS) and related chemical and physical data are presented from 100 shallow soil sampling locations within the State of New Hampshire.

- At all 100 locations, samples were collected from 0 to 6” in depth.
- At 50 locations, samples were collected from 6 to 12”
- At 6 of these locations soil profiles were collected every 6” to 36”

Analyses included 36 PFAS compounds, 36 PFAS compounds post-total oxidizable precursor assay (TOPA), total organic carbon (TOC), moisture content, pH, and autoclaved-citrate extractable protein.

Quality control samples included source-solution blanks, equipment blanks, and replicates.

[Statewide survey of shallow soil concentrations of per- and polyfluoroalkyl substances \(PFAS\) and related chemical and physical data across New Hampshire, 2021 - ScienceBase-Catalog](#)

USGS Statewide Survey – Phase 2 – Sorption

Soil samples were collected from locations with known PFAS contamination and nearby sites with similar soil characteristics but low expected PFAS concentrations.

Finished biosolids were collected directly from facilities at the final stage of processing and before distribution.

Air-dried soils and biosolids were then used for a series of batch and column experiments to determine water/solid distribution coefficient (K_d) values.

All batch and column experiments were run for 10 days.

Calculated K_d values are presented for every PFAS compound with detections in the solid and water phases and, with caution, can be used to help constrain estimates for PFAS mobility in the New Hampshire environment.

[Solid/Water Partitioning of Per- and Polyfluoroalkyl Substances \(PFAS\) in New Hampshire Soils and Biosolids: Results from Laboratory Experiments at the U.S. Geological Survey - ScienceBase-Catalog](#)

USGS Statewide Survey – Phase 3 - Leaching

The two sites, the former Brentwood Fire Training Area and White Farm,

- materials known to contain PFAS were used at each site.
- White Farm is an active farm where biosolids have been applied for several years
- Brentwood Fire Training Area, PFAS-containing aqueous film-forming foams were used

Soil samples were collected in a gridded pattern over the site.

Analyses included 36 PFAS compounds, TOPA, TOC,

Groundwater samples were collected and analyzed for PFAS

Lysimeter was installed and a composite sample was collected.



NHNPR

[Field-scale Investigation of Per- and Polyfluoroalkyl Substances \(PFAS\) Leaching from Shallow Soils to Groundwater at Two Sites in New Hampshire, 2021-2022 - ScienceBase-Catalog](#)

USGS Statewide Survey - Reporting and Regulating

Reporting expected in Summer.

Regulatory adjustments expected before end of year

Targeting multiple “standards” for determination of application rates

- Soil type
- Total organic carbon

Results will be utilized to set biosolids “screening levels” akin to SVOCs.

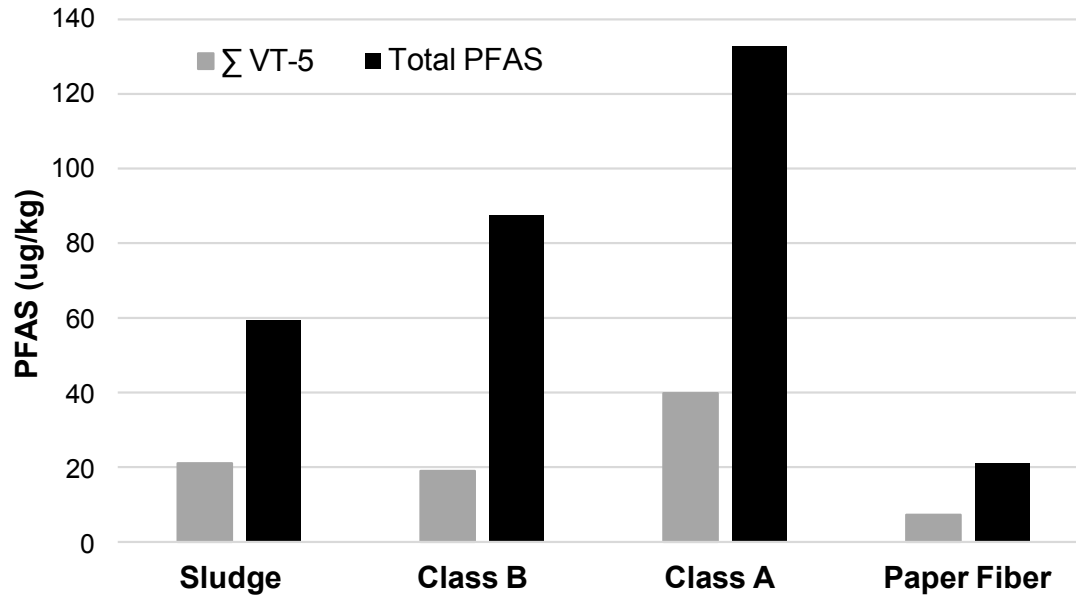
- Modify Application Rates
- perform soil quality monitoring

Sludge Quality Certifications will be revised 11/23

- Monitoring for PFAS quarterly?
- Method 1633 – 40 individual PFAS (>\$400/sample)

Env-Wq 800 revision in 2025 likely to have PFAS MCL

Average PFAS (ppb) in Samples of Residual Materials Vermont



PFAS levels in Common Soil Amendments



Product	PFAS Derivatives		
	PFBS (ppb)	PFOS (ppb)	PFOA (ppb)
Maine DEP Screening Standards	1,900	5.2	2.5
Organic Soil Amendments			
Food & Yard Waste Compost (Choi)	N/D	N/D	4.1
Country Soil Mushroom Compost	N/D	8.1	N/D
Coast of Maine – Quoddy Blend Compost	N/D	0.4	N/D
Sprague’s Leaf & Yard Waste Compost	N/D	0.8	0.5
Benson’s Surf & Turf Compost	N/D	0.9	0.6
Espoma Garden Tone Fertilizer	N/D	15.0	N/D
Neptune Harvest Liquid Fertilizer	N/D	4.6	1.0
Dried Hen Manure, Maine	N/D	33.0	N/D
We Compost It Food Waste Compost	N/D	0.8	4.1
Mr. Fox Food Waste Compost	N/D	N/D	5.2
Class A Biosolids Products			
Darmouth Compost	0.5	2.4	3.5
Greater Lawrence Sanitary District, Fertilizer	0.0	5.3	0.8
Ipswich Compost	1.7	2.1	3.4
Nantucket Compost	0.4	2.8	1.2
Hawk Ridge Screened Compost, Maine	6.2	19.0	12.2
Hawk Ridge SuperMulch, Maine	15.0	2.0	5.9
Residential Septage (Maine)	N/D	70.8	N/D

PFAS is Widespread

Common residential and commercial food waste that makes up compost and fertilizer products have regulated PFAS compounds.

While biosolids may contain PFAS, **many common organic soil amendments can also exceed Maine’s screening standard.**

Current regulatory efforts are primarily focused on source reduction, industrial monitoring, and many forms of research.

Future federal and state regulations should consider all products containing PFAS, not just biosolids.

“Background”

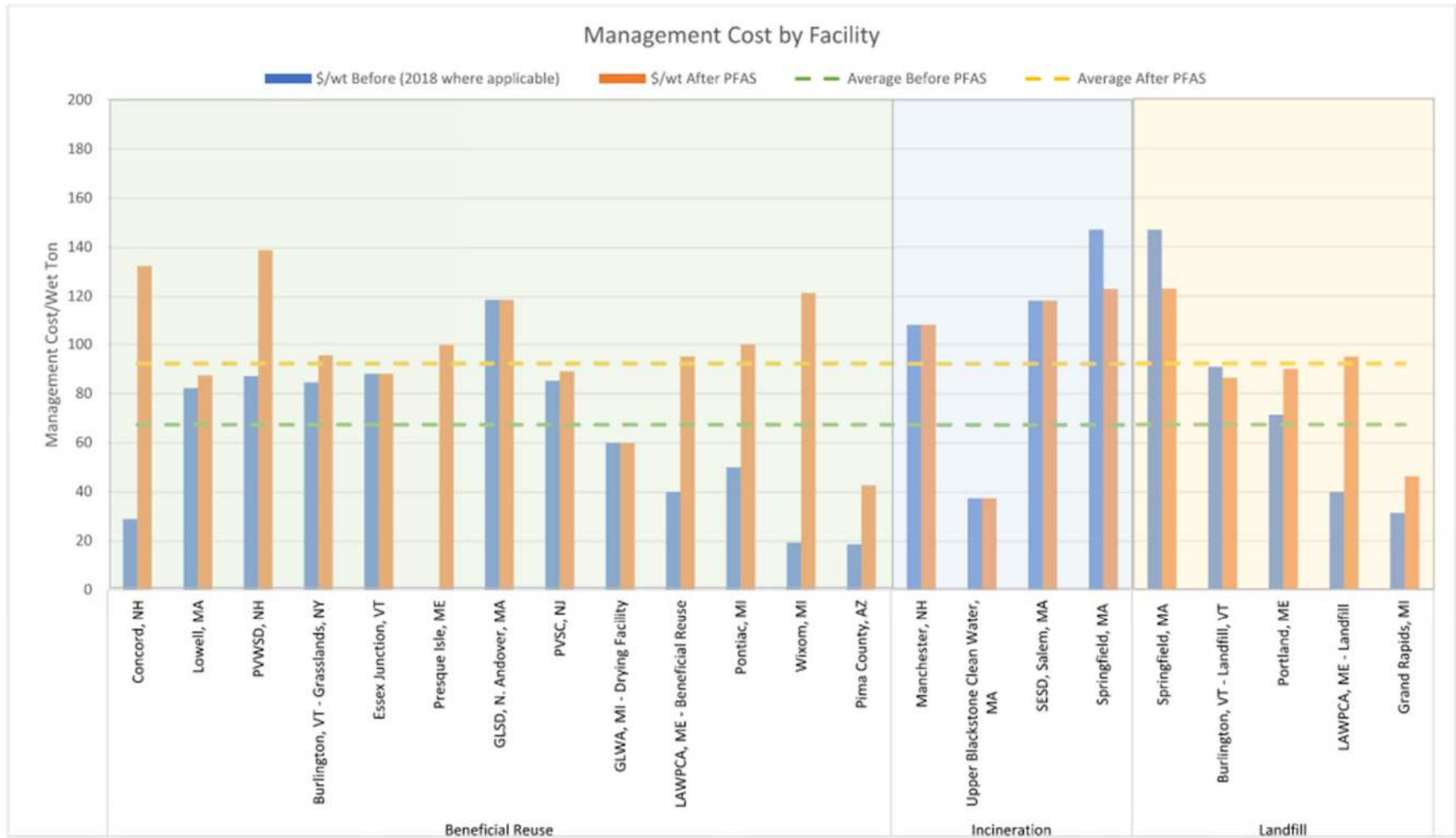
SOIL ng/g - ppb	Vermont	Maine
PFAS	Background Study Proposed Upper Tolerance Limit	Background Study Proposed Upper Tolerance Limit
PFBA	--	--
PFBS	0.590	0.074
PFPeA	--	0.298
PFHxA	0.87	0.656
PFHxS	0.380	0.097
PFHpA	0.840	0.237
PFOA	1.600	1.680
PFOS	3.400	5.320
PFNA	0.440	0.329
PFDA	0.390	0.163
PFDS	0.150	0.246

	Solid (ng/g)	Leachate (ng/L)
WWTF Sludge	7.5	66
Composted Sludge	ND/<0.9	61
Residential	69	430

Sources

PFAS Background in Vermont Shallow Soils, UVM,
Sanborn Head, 3/24/19

Background Levels of PFAS and PAHS in Maine
Shallow Soils, Sanborn Head, April 2022



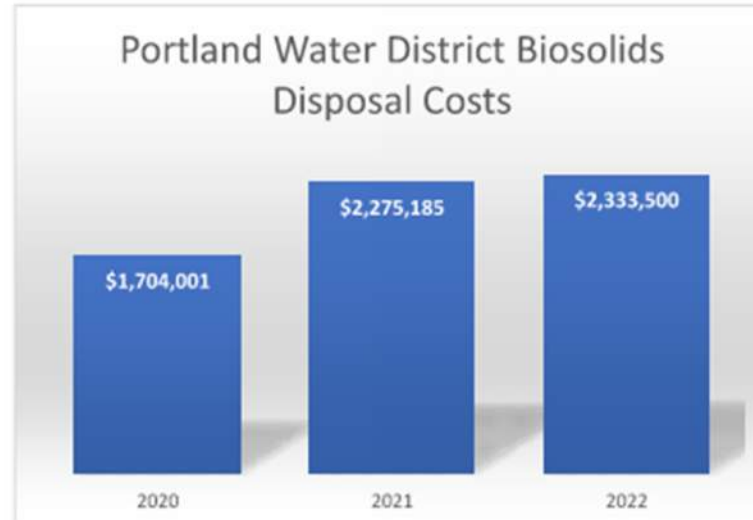
[1] Facilities with more than one biosolids processing method are listed under both management designations

Figure 2-1. Comparison of biosolids handling costs before and after PFAS concerns by end-use method.

Impacts of PFAS Biosolids Disposal

Year	Cost, average annual wet tons
2020	\$1,704,001
2021	\$2,275,185
2022	\$2,333,500

37% increase from 2020 to 2022

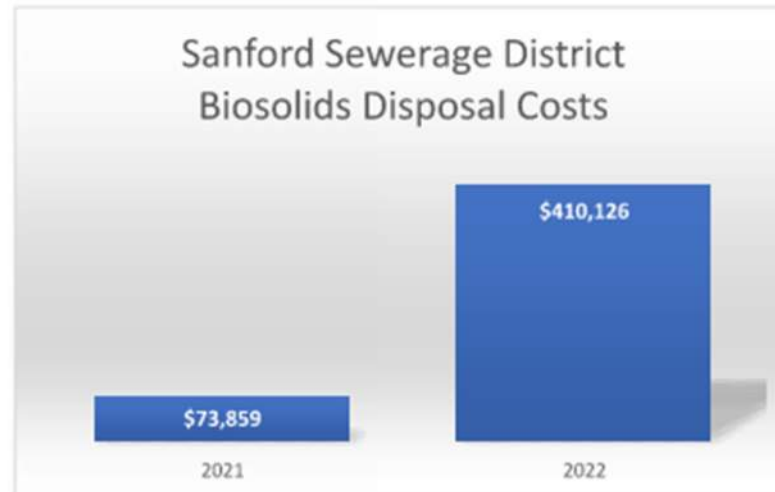


37% Increase
19.8 MGD

Year	Cost, average annual wet tons
2021	\$73,859*
2022	\$410,126*

455% increase from 2021 to 2022

**Not reflective of annual bond payment in approximate amount of \$140,000. Landfill closure anticipated within two years, which will increase Sanford's costs.*



455% Increase
8.8 MGD

Cost Increases Appear to Have Disproportionate Impact Smaller Municipalities

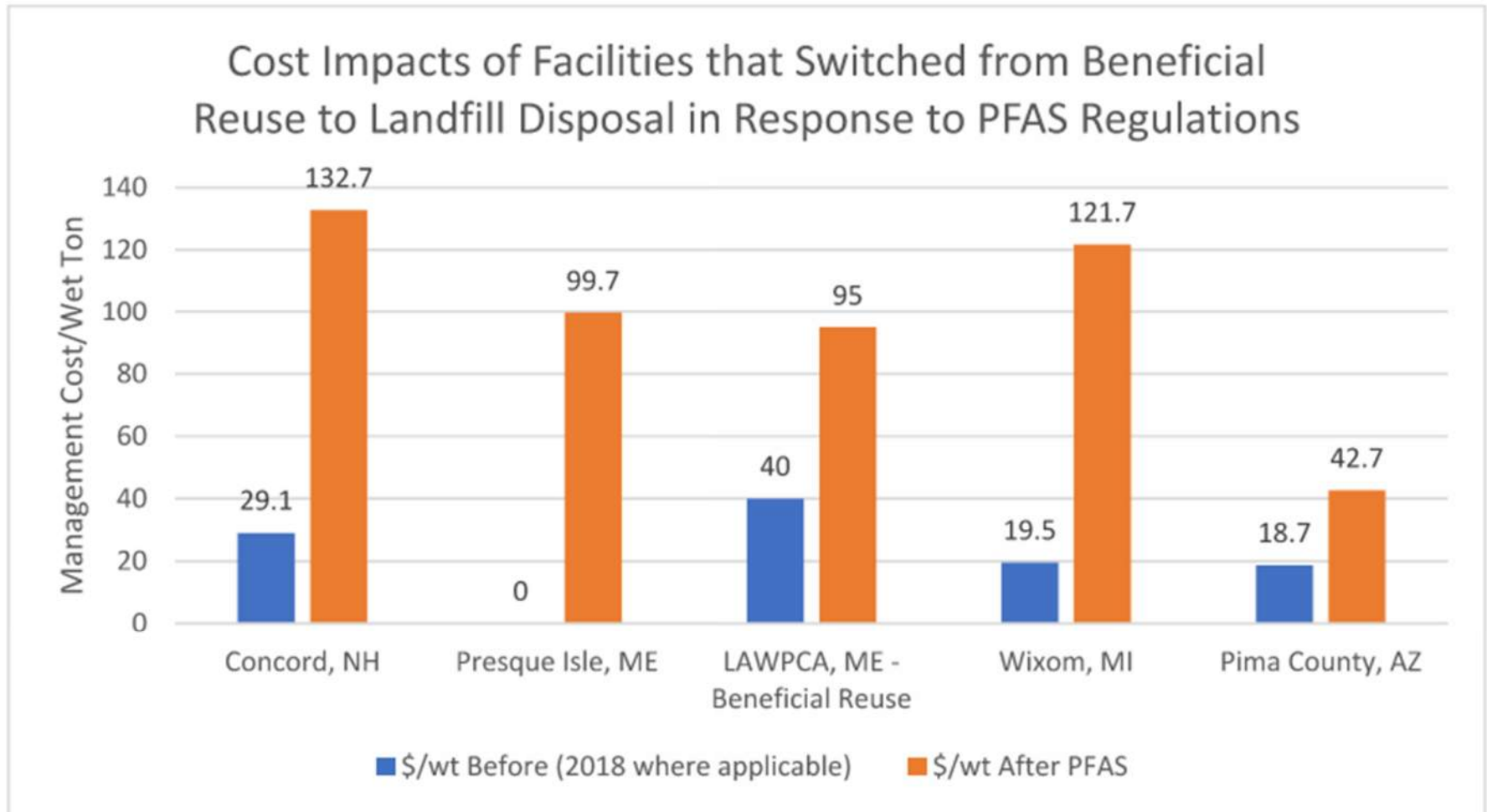


Figure 2-3. Comparison of biosolids disposal costs before and after PFAS concerns for facilities that switched from beneficial reuse to landfill disposal methods.

Source: Cost Analysis of Impacts on Municipal Utilities and Biosolids Management to Address PFAS Contamination, WEF/CDMSmith, 2020

Impacts of PFAS Biosolids Land Application

Maine bans use of sewage sludge on farms to reduce risk of PFAS poisoning

Sludge used as crop fertilizer has contaminated soil, water, crops and cattle, forcing farmers to quit



📍 Stoneridge Farm in Arundel, Maine, was poisoned by PFAS after the owners used sludge from water treatment facilities as fertilizer. Photograph: Tristan Spinski/The Guardian

Maine last month became the first state to ban the practice of spreading PFAS-contaminated sewage sludge as fertilizer.

Songbird Farm
Unity, Maine
Johanna Davis and Adam Nordell

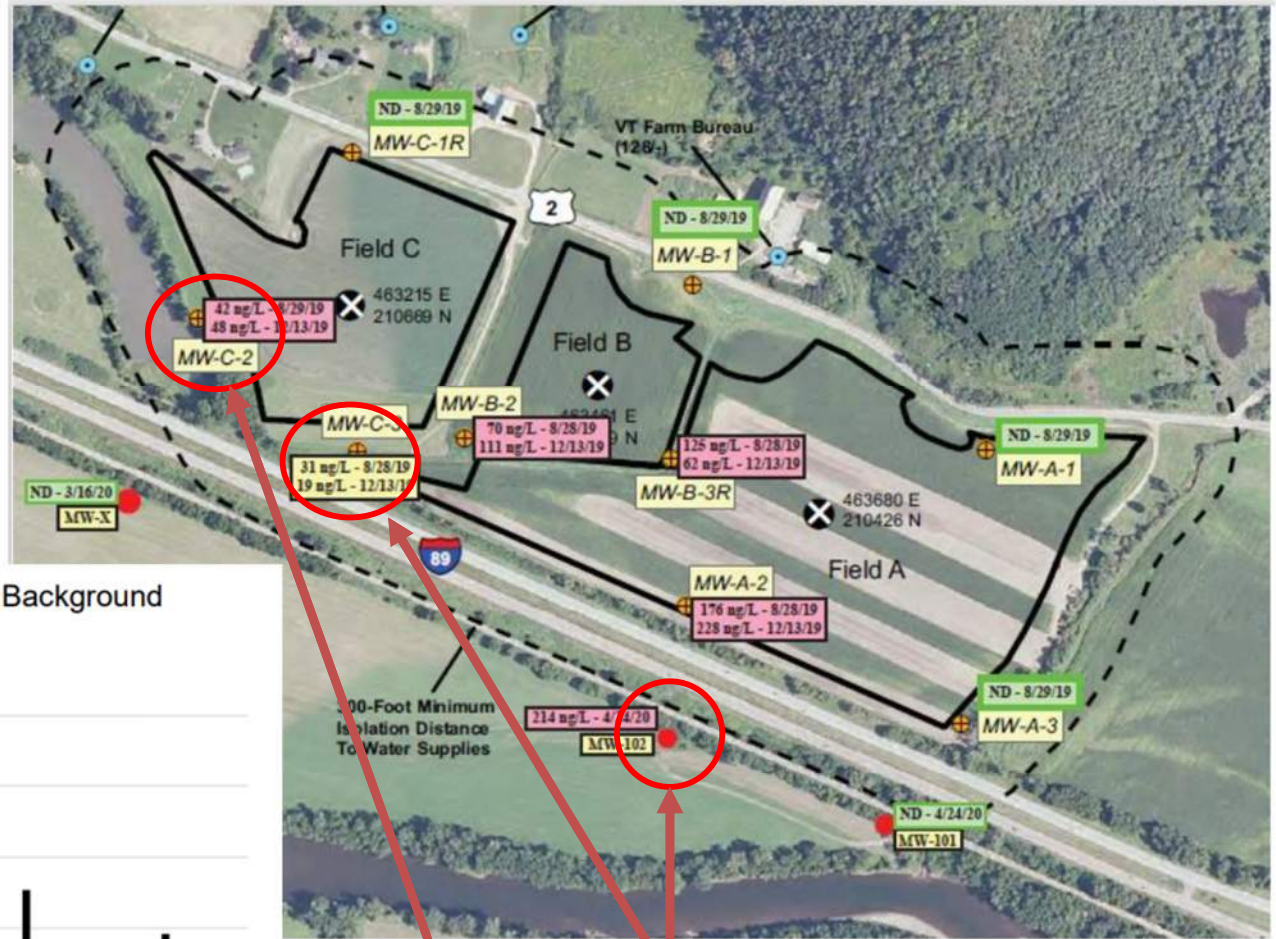
The discovery of PFAS contamination in our soil, water and in our bodies has thrown our lives into crisis. Sludge derived PFAS has upended our farm business, thrown our livelihood into question, devalued our land and created an enormous amount of stress about potential health consequences for us and for our four year old child. How can we begin to quantify the impact this is having on our family?



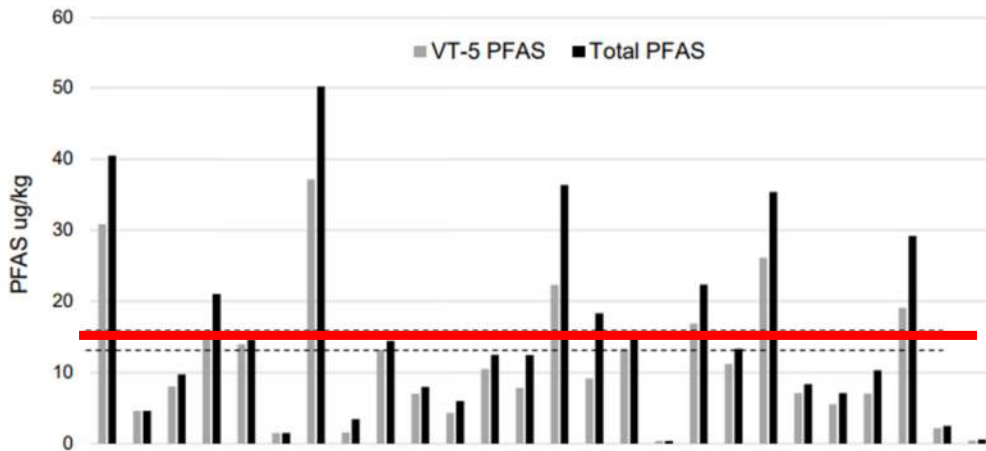
“Since discovering PFAS contamination on multiple farms last year, Maine has served as a national model to stop its continued spread.”



Historical Land Application Site
 20+ years
 Septage and Class B



Soil PFAS (ppb) in Land App Sites vs Background



Groundwater Exceedances

Why So Unpredictable....

- No regulatory PFAS concentration limits for effluent or residuals.
- No regulatory PFAS concentration limits for surface water.
- No regulatory PFAS concentration limits for soil
- No PFAS limits for biosolids disposal at landfills, incinerators or land application in NH.



Seems Simple....

REGULATORY LIMITS BEING DEVELOPED ARE VERY LOW....and slow

- Proposed EPA MCLs much lower than current NHDES....it is assumed all other media will be regulated to mimic these low concentrations.
- Due to uncertainty, landfills/incinerators/composters are choosing to limit intake of PFAS containing materials....sort of...they still take in consumer products, food waste....
- Due to uncertainty, public outcry for “ZERO” is dominating discussions

Other Sludge/Biosolids Handling Options

- Trucking to other States and Canada for landfilling/incineration/composting...not a sustainable or “Green” initiative.
- Sludge Drying....reduction in mass leaving a facility can help, but they are also energy intensive, reducing some saving.
- Incineration does not appear to destroy all PFAS – Studies indicate that PFAS remain in the scrubber waters and air discharge...potentially representing another PFAS “source”.
- “Treatment” methods to capture and/or destroy PFAS in wastewater and biosolids is in its infancy....and expensive

Summary of PFAS Related to Wastewater

- If you look for it, you will find it.
- No known WW related limits yet in any state. EPA has monitoring/reporting in NPDES permits.
- States/entities doing testing of sludge and land application sites.
- Discerning “background” from “impact” is difficult
- Maine banned all land application in 2022.
- Sludge handling pricing already going up and PFAS exclusions and/or surcharge clauses showing up in hauling and disposal contracts.



Proposed “BioHub” for PFAS Research and Innovation

- Primary Drivers include: NEIWPCCC, NEBRA, Maine Water Environment Association and Maine DEP
- Goal = Build a Center to research and vet emerging technologies for biosolids management and PFAS destruction
- Find sustainable large scale solutions
- Seeking Congressional Grant Funding
- Years away...but you have to start somewhere
- [Regional Residuals BioHub • NEIWPCCC](#)
- [NEIWPCCC BioHub — NEBRA \(nebiosolids.org\)](#)

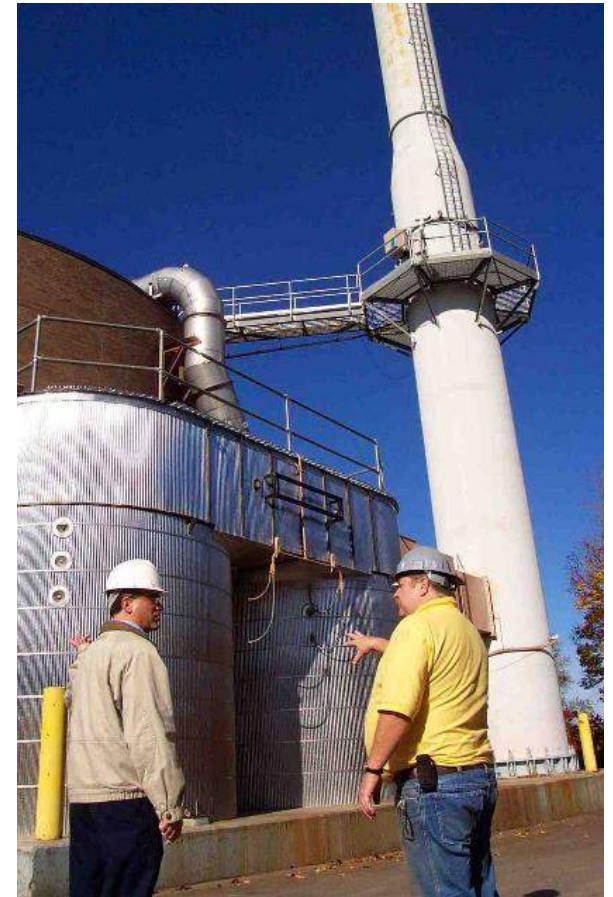


House Bill 1546

- Passed June 6, 2022 and Effective as of January 1, 2023
- Enables DES to adopt rules relative to airborne PFAS
- Limits air emissions to a pre-determined annual emissions limit
- Primarily geared towards industrial facilities, but “indeterminable impacts” could be felt at municipalities that operate WWTFs, incinerators, sludge dryers, landfill gas to energy facilities, and/or soil remediation units.
- How do we move forward? When will the shoe drop?

Crystal Ball of PFAS Regulatory World in NH

- Surface Water and Discharge Regulations will not be in place for years
- No clear path currently seen for effluent “treatment”
- **Biosolids screening levels will be set this year, certifications will require PFAS analyses**
- No clear path currently seen for “treatment” of PFAS in residuals/biosolids
- Public Outcry and “Citizen Science” will continue to drive decision making



NEBRA

What Can We Do?

- Look upstream in the sewershed for “point sources” and begin a dialogue about pretreatment.
- Begin aggressively planning for implementation of residuals volume reduction
 - Grants and Loans for planning, design and implementation?
 - Coordinate with neighboring communities for “regional” solution?
- Adjust budgets to account for massive increase in sampling and handling costs
 - (is 400% enough?)
 - Raise Rates Now – begin accumulating the capital needed for match/payments
- **GET THE WORD TO THE STREET! Legislatures, Councils, Customers**
 - NHWPCA, NEBRA, NEWEA, WEF, NHDES, Customers

Now is the Time to Discuss Options and Cost Implications – Plan Ahead

Important Web Site Resources

- NHDES PFAS Home - [Welcome to the NHDES PFAS Response Website | DES - PFAS Blog](#)
- NHDES BIOSOLIDS - [Biosolids | DES - PFAS Blog \(nh.gov\)](#)
- NHDES SURFACE WATER - [Surface Water Quality | DES - PFAS Blog \(nh.gov\)](#)
- ITRC - [PFAS — Per- and Polyfluoroalkyl Substances \(itrcweb.org\)](#)
 - [Biosolids and Per- and Polyfluoroalkyl Substances \(PFAS\) \(itrcweb.org\)](#)
- EPA - [Per- and Polyfluoroalkyl Substances \(PFAS\) | US EPA](#)

Questions?