

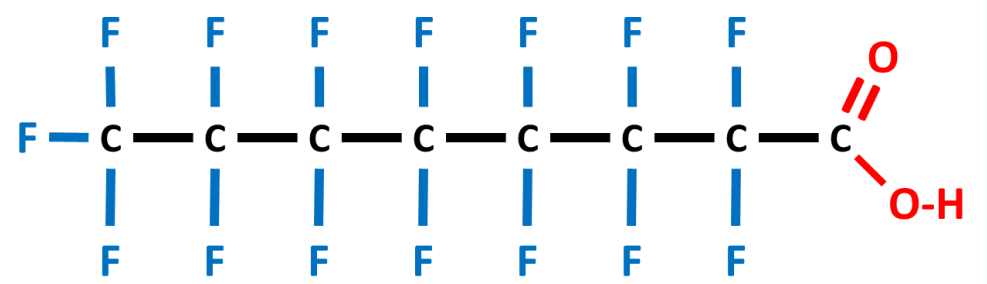


Webster Water Sewer Commission Public Hearing on PFAS

August 10, 2022

Mary Jude Pigsley, Regional Director, MassDEP Central
Regional Office

What Are PFAS?



Poly- and perfluoroalkyl Substances

A family of thousand of compounds with varying structure
(e.g, carbon chain length)

- **Extremely stable** – Heat & Stain Resistant, Water repellent
- **“Forever chemicals”** - Very persistent, do not biodegrade
- **Water Soluble**
- **Some are very toxic**
 - Slowly excreted from the body – half lives of years (1-8+ for longer-chain)
 - Developmental risks to fetus/infants
 - Endocrine disruption, effects on immune system
 - Possibly cancers (kidney, teste, pancreas, liver)

Common Uses of PFAS Since the 1950s

- Textile treatments: stain resistance/ water repellency
- Paper coatings: grease resistant
- “Waxes”: some floor, car, ski
- Hairsprays, cosmetics
- “Waterproof” down
- Manufacturing
- Aqueous Film-Forming Foam (AFFF)



Most Americans are exposed to some levels of PFAS through use of consumer products

What Are Exposures of Concern for PFAS?

Sensitive groups: *pregnant women, nursing mothers, infants, and immune compromised* drinking (and cooking with) contaminated water in a residential setting

(sensitivity – concentration – frequency)

Water uses that pose (relatively) less concern include:

- Water use by someone not considered in “sensitive group”
- Non-residential water use – *restaurants, workplace*
- Water use for other purposes – *bathing, washing vegetables*

Ways people may reduce potential exposure:

- Drink and cook with bottled water
- Use a home water treatment system (NSF certification not yet available)

Why Are Long-Chain PFAS (PFAS6) a Concern?

- **Infants and children at risk**
 - Crosses placenta
 - Expressed in breast milk
- **Toxicity at low exposure levels**
- **Persistent**
 - Do not appreciably breakdown in the environment
 - Stay for many years in the body
- **Water soluble**

Health Effects Associated with High Exposures to Long-Chain PFAS

- Effects on the immune system
Decreased response to vaccines
- Developmental effects
Decreased birth weight, delayed development
- Endocrine disruption
Thyroid hormone effects, increased risk of high blood pressure or pre-eclampsia in pregnant women
- Liver effects
Increased cholesterol and markers of stress
- Increased cancer risks
Kidney and testes
Liver and pancreas (animal data)

Additional information on health effects:

<https://www.atsdr.cdc.gov/pfas/health-effects/index.html>

Maximum Contaminant Level PFAS6

- Massachusetts drinking water standard (“MCL”) effective October 2, 2020
- **20 parts per trillion** for the total concentration of **six PFAS compounds combined**
- The MCL is health-based, protective of the most sensitive population with short-term exposure, and accounts for exposure to PFAS from sources in addition to drinking water

Maximum Contaminant Level PFAS6 (cont.)

- First year required quarterly sampling for compliance, phased in based on size of public water systems (January 2021, April 2021, October 2021)
- Every three years MassDEP will perform a review of relevant developments in the science, assessment and regulation of PFAS in drinking water

Sampling Requirements

- Compliance based on quarterly sampling at each entry point to the water distribution system
- If any PFAS is detected in an initial sample, a confirmation sample is required. Results of two samples for PFAS6 are averaged for compliance purposes
- If the average of the two samples is > 10 ppt, the system is not in violation but must sample monthly



If the average of the three samples in a quarter is > 20 ppt for PFAS6, the system is in violation and must distribute **Public Notice** materials and develop **Corrective Action Plans**

WEBSTER PFAS6 SAMPLING RESULTS 2021

Source Name	Source Code (Raw/Finished)	Sample 4/6/2021	Sample 5/3/2021	Sample 7/30/2021	Sample 8/25/2021	Sample 9/29/2021	Comment
Station 3: Well 3 Bigelow Rd	03G (Finished)	15.2 ppt	15.6 ppt	20.4 ppt	24.2 ppt	---	Q3 Average = 22 ppt (Removed from service 9/15)
Station 3: Well 3 Bigelow Rd	RW-03G (Raw)	14.6 ppt	15.1 ppt	---	---	15.5 ppt (run to waste)	
Memorial Beach WTP (blend)	MULT 2 (Finished)	5.61 ppt	ND (0)	6.3 ppt	10.4 ppt	6.8 ppt	Average = 5.8 ppt
Station 2: Memorial Beach	RW-01G (Raw)	1.86 ppt	2 ppt	---	---	---	Average = 2 ppt
Station 1: Well 1	RW-04G	4.38 ppt	4.24 ppt	---	---	---	Average = 4.3 ppt
Station 1: Well 2	RW-05G	11.1 ppt	10.3 ppt	---	---	---	Average = 11 ppt
Station 1: Well 3	RW-06G	10.4 ppt	9.54 ppt	---	---	---	Average = 10 ppt
Station 1: Well 4	RW-07G	8.03 ppt	7.36 ppt	---	---	---	Average = 7.7 ppt
Station 1: Well 5	RW-08G	14.2 ppt	14.7 ppt	---	17 ppt	---	Average = 15 ppt

Notice of Noncompliance

- Issued on October 6, 2021
- Required actions include delivering Public Notice Materials to all customers
- Also required Town to develop short-term and long-term corrective actions to return to compliance. Short-term plan was removing Bigelow Well from service; long term plan was reviewing treatment options and pursuing state funding for project



Massachusetts Department of Environmental Protection
Bureau of Water Resources – Drinking Water Program
PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) MAXIMUM CONTAMINANT LEVEL (MCL)
NOTICE OF NONCOMPLIANCE (NON)
With Violation Response/Compliance Schedule Approval (CSA) Form
M.G.L. c. 21A, § 16, 310 CMR 5.00

Attention: Public Water Supplier

A General Information	
TOWN OF WEBSTER	CITY/TOWN: WEBSTER
ATTN: GREG BALUKONIS, Interim Town Administrator	PWS ID #: 2316000
350 MAIN ST, 1 ST FLOOR	CLASS: COM
WEBSTER, MA 01570	ENF DOC#: NONCSA-CE-21-5D00012252
Email: gbalukonis@webster-ma.gov	

B Location Where Noncompliance Occurred	
38 Hill St Webster, MA 01570	
Sample Location – Bigelow Well (03G)	

C Description of Violations under M.G.L. c. 111, §§159-160 and 310 CMR 22.00	
The Department of Environmental Protection (MassDEP) Drinking Water Program has determined that you are in violation of the Per- and Polyfluoroalkyl Substances (PFAS) Rule for the following checked contaminant(s) and monitoring period(s):	

Table 1- PFAS 6

	Contaminant	Monitoring Period(s)	PFAS6 Quarterly Average (ng/L) Well 1	PFAS6 MCL (ng/L)
<input checked="" type="checkbox"/>	Per- and Polyfluoroalkyl Substances - PFAS6 (sum of the concentrations of PFOS, PFOA, PFHxS, PFNA, PFHpA and PFDA)	July – Sep 2021	22	20

Below is a description of the regulation(s) you have violated.

PFAS6 - MAXIMUM CONTAMINANT LEVEL

<input checked="" type="checkbox"/>	Your public water system violated the maximum contaminant level (MCL) specified in 310 CMR 22.07G(3)(d) for PFAS6 and monitoring period(s) listed in Table 1 above.
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D Action to Be Taken, and the Deadline for Taking Such Action	
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Within 30 days of the date of this NON, submit to MassDEP for its review and approval a written proposal setting forth how and when you propose to come into compliance with the requirements cited in Section C of this NON, by **completing and submitting the attached PFAS Response/Compliance Schedule Approval Form (“compliance plan”) and conducting all required public notice**. To return to compliance, **you must implement the compliance plan**, including the schedule for completing the activities proposed, as approved by MassDEP. If you determine that you need additional time to complete and submit the compliance plan, you may request an extension **before** the submission deadline by contacting Robert Bostwick at 508-849-4036 or by email at Robert.Bostwick@mass.gov.

Public Notice Requirement

- MassDEP form was mailed to all customers in October 2021 to inform them of the results > 20 ppt at the Bigelow Well, which had been taken off-line
- Explained that the exceedance is a violation of the drinking water standard
- Described the health effects in general and to certain sensitive groups (pregnant and nursing women, infants, and immuno-compromised individuals)
- Provided information about steps consumers could take to reduce exposure to PFAS6 in the drinking water, including using bottled water
- Identified the steps the Town was taking at that time, a point of contact for questions, and links to websites for more information

WHAT IS MASSDEP DOING ABOUT PFAS6?

Developed Drinking
Water and Cleanup
Standards

Technical Assistance
Outreach
Coordination
Training

Firefighting Foam
Take-Back Program

Working to Identify
Sources & Releases
to the Environment

Sampling &
Analyses for Public
Water Systems and
Private Wells

What Are Other States Doing?

''	PFOS	PFOA	PFNA	PFHxS	PFHpA	PFDA
U.S. EPA	70		NA	NA	NA	NA
Health Advisory	Sum of two					
MA MCL & GW standard	70 (2018 ORSG) → 20 (MCL; MCP GW standard) Sum of five → Sum of six (add PFDA)					
VT MCL		20	Sum of five			NA
CT Action Levels		70	Sum of five			NA
ME interim drinking water standard		20	Sum of six			
ATSDR Based on draft ATSDR toxicity values and EPA exposure parameters	7	11	10	70	NA	NA
NY MCL	10	10	NA	NA	NA	NA
NJ MCL	13	14	13	NA	NA	NA
CA Notification levels (Response Levels)	6.5 (40)	5.1 (10)	NA	NA	NA	NA
MI MCL	16	8	6	51	NA	NA
MN guidelines	15	35	NA	47	NA	NA
NH MCL	15	12	11	18	NA	NA
Most other states (EPA value by default)		70	NA	NA	NA	NA

What is the Federal Government Doing?

U.S. EPA PFAS Strategic Roadmap

October 2021

EPA's integrated approach to PFAS focuses 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.

U.S. EPA Updated Health Advisories

June 2022

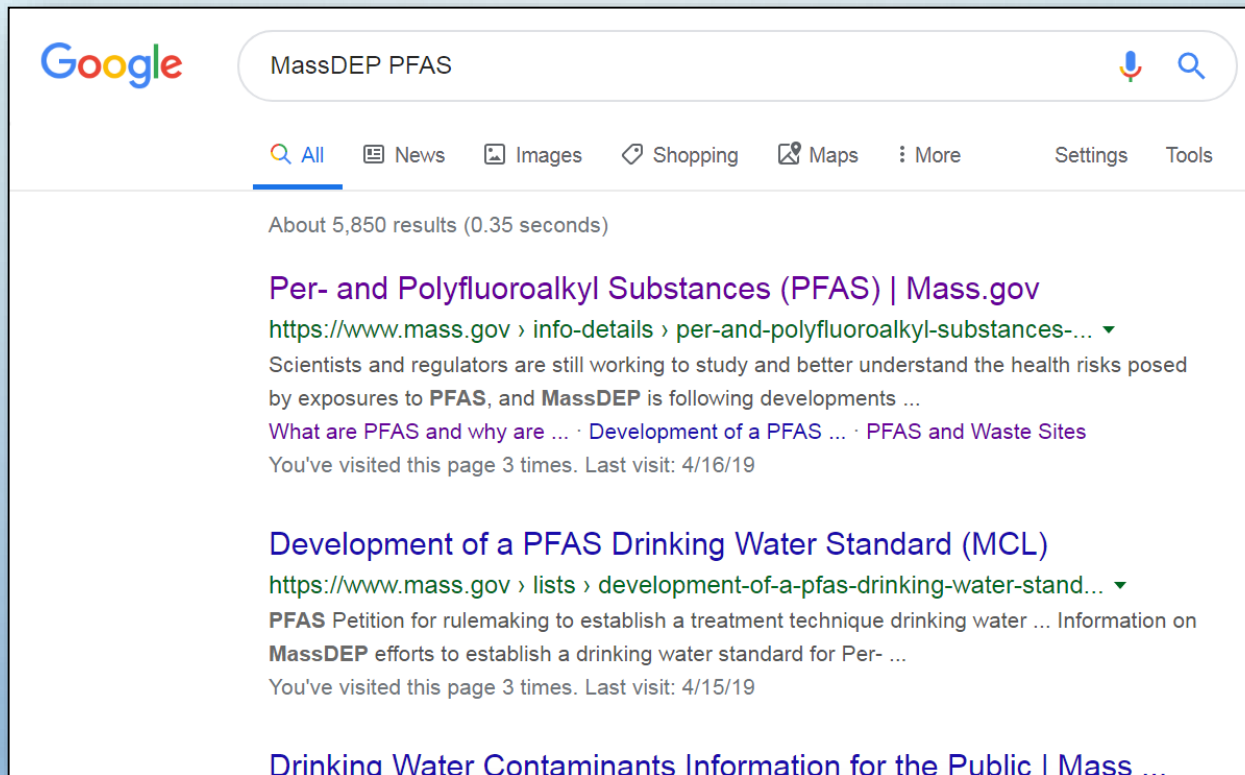
- Interim Updated Drinking Water Health Advisories for PFOA and PFOS are non-regulatory and non-enforceable
- Based on lifetime of exposure, some negative health effects may occur with concentrations of PFOA and PFOS near zero
- Also Final Health Advisories for two other PFAS compounds (PFBS and GenX chemicals)
- EPA plans to propose a national drinking water standard this fall which may include additional PFAS compounds

Drinking Water State Revolving Fund Loan Program

- EPA makes funds available to states to provide low-interest loans to help water suppliers comply with drinking water standards
- EPA allocates funding to each state and the state must provide a 20% match
- Includes projects such as new and upgraded drinking water treatment plants; projects to replace contaminated sources; new storage facilities; new distribution systems
- Competitive process requires significant benefits to public health or drinking water quality. MassDEP scores projects according to the severity of the problem being addressed and whether the proposed solution is appropriate.
- Strict deadlines for applying: applications are due August 12th
- Two priorities for construction proposals: PFAS remediation and lead reduction. PFAS projects eligible for 0% interest

More Information...

Just Google... *MassDEP PFAS*



Google search results for "MassDEP PFAS". The search bar shows "MassDEP PFAS" and the Google logo. Below the search bar, navigation links include "All", "News", "Images", "Shopping", "Maps", "More", "Settings", and "Tools". The results show "About 5,850 results (0.35 seconds)".

Per- and Polyfluoroalkyl Substances (PFAS) | Mass.gov
<https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-...>
Scientists and regulators are still working to study and better understand the health risks posed by exposures to **PFAS**, and **MassDEP** is following developments ...
[What are PFAS and why are ...](#) · [Development of a PFAS ...](#) · [PFAS and Waste Sites](#)
You've visited this page 3 times. Last visit: 4/16/19

Development of a PFAS Drinking Water Standard (MCL)
<https://www.mass.gov/lists/development-of-a-pfas-drinking-water-stand...>
PFAS Petition for rulemaking to establish a treatment technique drinking water ... Information on **MassDEP** efforts to establish a drinking water standard for Per- ...
You've visited this page 3 times. Last visit: 4/15/19

Drinking Water Contaminants Information for the Public | Mass ...




 youtube.com/MassDEP
 flickr.com/MassDEP
 Mass.Gov/DEP
 [@MassDEP](https://twitter.com/MassDEP)

Information Available on mass.gov Website



[Energy & Environmental Affairs Data Portal \(state.ma.us\)](https://state.ma.us)

Mass.gov | Executive Office of Energy & Environmental Affairs (EEA)

An official application of the Commonwealth of Massachusetts

 **Energy & Environmental Affairs
Data Portal**

HOME DASHBOARDS SEARCH DATA ▾ HELP ▾



EEA Environmental Datasets

Permits >	Facilities >	Inspections >	Enforcements >
Asbestos >	Drinking Water >	Lead & Copper in Schools/Childcare >	Waste Site Cleanup Professionals (LSP Board) >
Wetland Notice of Intent Projects >	Waste Site / Reportable Releases >	Well Drilling >	Wastewater NPDES & Residuals PFAS >

< PREVIOUS



Energy & Environmental Affairs Data Portal

HOME

DASHBOARDS

SEARCH DATA ▼

HELP ▼

Search for Drinking Water

PWS ID ?

2316000

Town ?

Select

Contaminant Group ?

Select

Raw OR Finished ?

Select

< PREVIOUS

✕ CLEAR

PWS Name ?

Class ?

Select

Chemical Name ?

Select

Collected Date ?



to



Q SEARCH