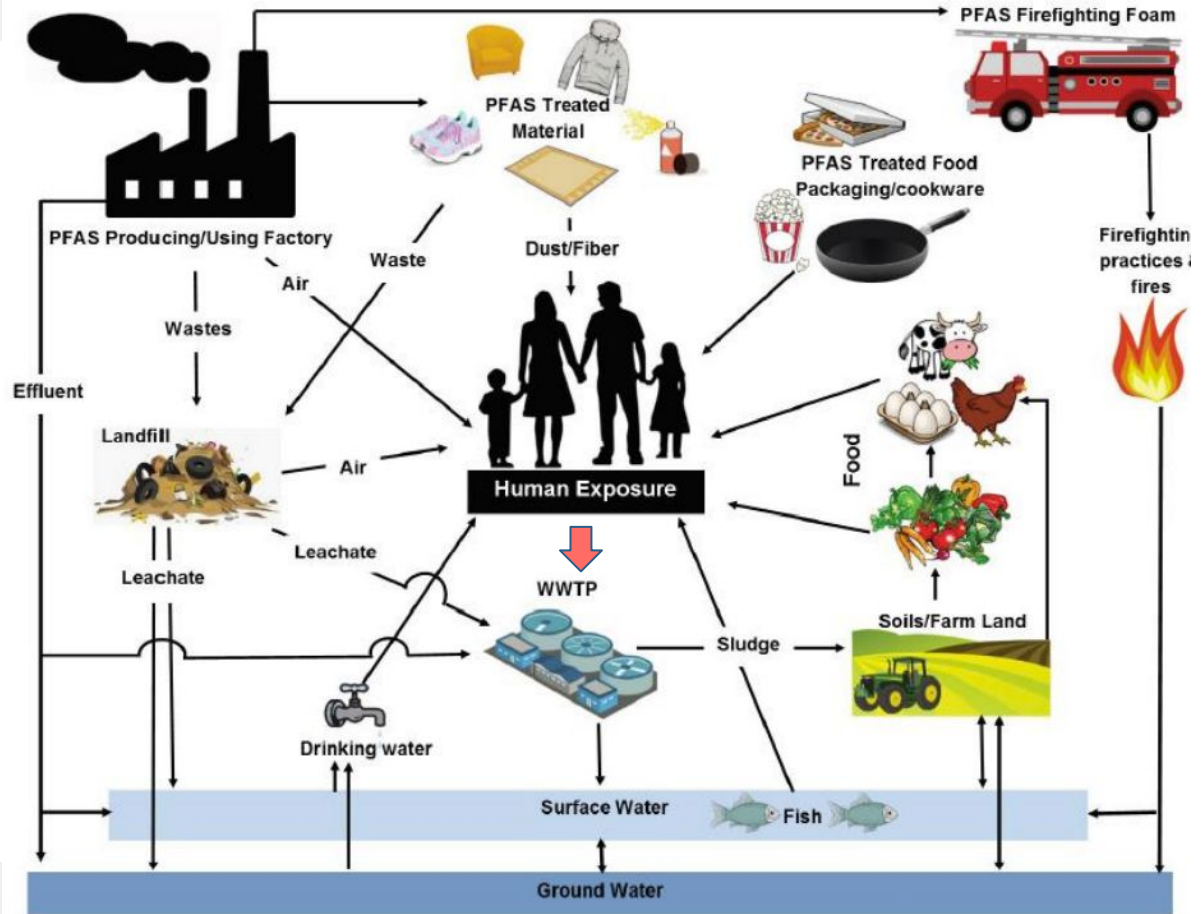


PFAS Education Materials to Address Town Water Contamination & Community Concern in Hopkinton, MA

Talia Feldscher

PFAS and Water Contamination



Background

PFAS and Health

- Forever Chemicals - in environment and human body
- Health Concerns in Pregnant Women/Infants, and those who are Immunocompromised
- Impacts on development, immune system, liver, kidneys, thyroid, reproductive system, cholesterol, cancer risk

Hopkinton



PFAS in Hopkinton

Contamination

- Measured in response to 2020 MassDEP guidance on a safe limit of 6 common PFAS chemicals at 20ppt
- Well 6 of Town Water Supply had elevated Levels
 - Out of 8 total wells, Well 6 is the largest supplier of water to the town
- Public was immediately notified, and susceptible groups were offered a rebate opportunity to purchase bottled water

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

This report contains important information about your drinking water. Please translate it or speak with someone who understands it or ask the contact listed below for a translation.

Hopkinton Water Department located in Hopkinton, Massachusetts has levels of PFAS6 above the Drinking Water Standard

What happened?

Our water system received notification of PFAS6 results showing that **our system violated the 20 ng/L PFAS6 Maximum Contaminant Level (MCL) drinking water standard during the July – September 2021 compliance period with a quarterly average of 22 ng/L at the Fruit St. Pump Station.**

Samples collected on July 28, 2021, August 26, 2021, and September 21, 2021, reported levels of PFAS6 at 20.9 and 20.5 ng/L and 24.7 ng/L, respectively. Exceedance of the MCL has been determined from these results. Compliance with the PFAS6 MCL is calculated as a quarterly average based upon the total number of samples collected during the compliance period. The location where elevated levels of PFAS6 were reported is from one of five facilities (including the Ashland Interconnection) that supplies drinking water to our system. PFAS6 levels were reported below the MCL at our other locations.

What does this mean?

This is not an emergency. If it had been, you would have been notified immediately. Although this is not an emergency, as a consumer of the water, you have a right to know what happened, what you should do, and what we did and are doing to correct this situation.

On October 2, 2020, Massachusetts Department of Environmental Protection (MassDEP) issued a new drinking water regulation setting a maximum contaminant level (MCL) of 20 nanograms per liter (ng/L) for the sum of six per- and polyfluoroalkyl substances (called PFAS6). PFAS6 includes perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), perfluorodecanoic acid (PFDA) and perfluoroheptanoic acid (PFHpA).

PFAS in Hopkinton

Public Concerns

- Public response was fearful of what contamination meant for them
 - What are PFAS
 - Extent of contamination
- Residents were unsure as to how they should respond to PFAS contamination notice
- Unsure whether to buy bottled water
- Little communication on Hopkinton's remediation plan



01

What are PFAS

02

Health Concerns

03

**Hopkinton
Contamination**

04

Mitigation Plan

Goals

**Lack of PFAS
Info/Fear for Health**



Provide information on what PFAS are, where they come from, who is susceptible, and what they do to our bodies.

**Unknown
Contamination
Source**

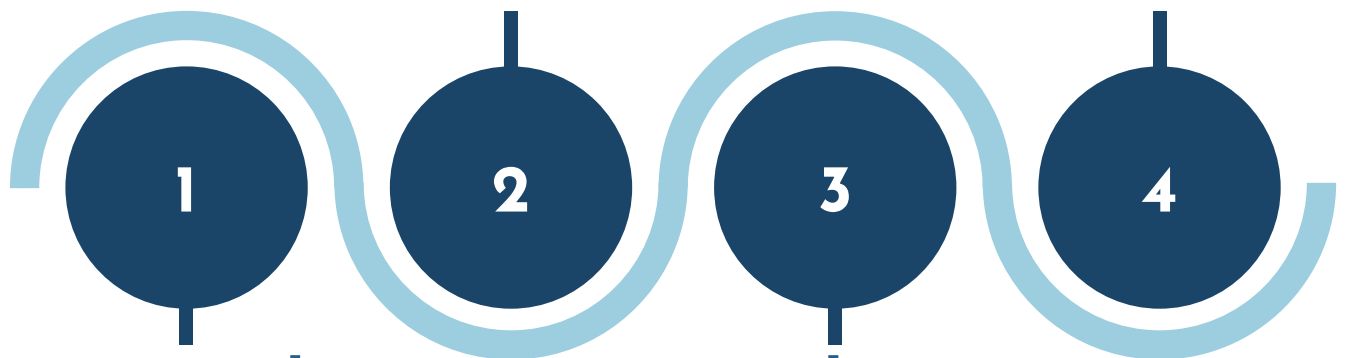


Through an environmental site assessment, determine most likely cause of contamination, and share with community.

**Remediation Plan
Unclear**



Provide transparent information about Hopkinton's remediation plan in the short and long term.



Hopkinton

Assessment of Site Contamination & Potential Sources

Material Creation

Generation of Pamphlet(s) for Public Distribution

1

Research

Comprehensive understanding of PFAS, Health Concerns, and Responses from other Health Depts.

2

Hopkinton

Address Remediation Plan & Public Concerns

3

4

PFAS in Hopkinton

Sources

- Not common contamination sources
 - Factories/Plants
 - Firefighting Foam
- Likely water treatment plant with leach field near contaminated well
 - Processing does not filter PFAS, remains in treated wastewater
 - Private Septic Tanks

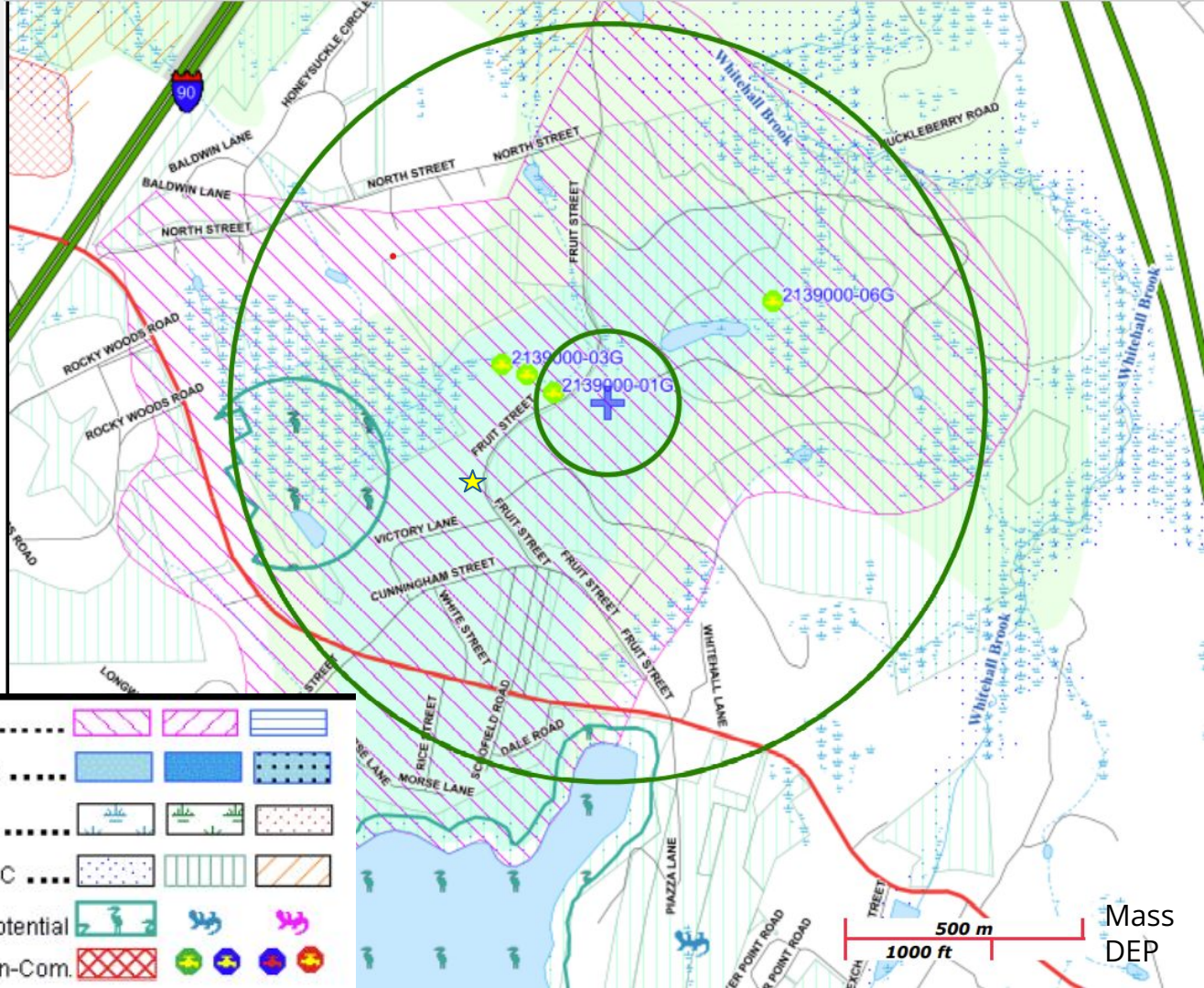


Lists of state- and tribal hazardous waste facilities

MA SHWS: Reportable Releases Database

A review of the MA SHWS list, as provided by EDR, and dated 01/19/2022 has revealed that there are 73 MA SHWS sites within the requested target property.

Site	Address	Map ID / Focus Map(s)	Page
AT MASS TNPK INTERCH	RTE 495 NORTHBOUND	A10 / 8	211
Release Tracking Number: 2-0016834			
Current Status: RAO			
QTX TRANSPORTATION R	MA TPKE MM 106W	A11 / 8	213
Release Tracking Number: 2-0016452			
Current Status: RAO			
ERB GROUP COMPANIES	MA TPKE E MM106 AT 4	A12 / 8	214
Release Tracking Number: 2-0016244			
Current Status: RAO			
RT 495 S ROADWAY REL	RT 495 RAMP TO MASS	16 / 8	219
Release Tracking Number: 2-0016760			
Current Status: RAO			
RTE 90 & RTE 495 AT	RTE 90	C18 / 8	222
Release Tracking Number: 2-0012972			
Current Status: RAO			
AT TOLL BOOTH	MA TPKE	20 / 8	226



PWS Protection Areas: Zone II, IWPA, Zone A			
Hydrography: Open Water, PWS Reservoir, Tidal Flat			
Wetlands: Freshwater, Saltwater, Cranberry Bog			
FEMA 100yr Floodplain; Protected Open Space; ACEC			
NHESP Pri-Hab of Rare Species; Vernal Pool: Cert., Potential			
Solid Waste Landfill; PWS: Com. GW, SW, Emerg., Non-Com.			

Mass
DEP

What are PFAS?

Per- and Polyfluoroalkyl chemicals (PFAS) are a group of man-made chemicals used in protective coatings on clothing, carpets, food packaging, nonstick cookware, cosmetics, and other consumer products. They are called "forever chemicals" because they do not easily break down in the environment and can take years to leave the body. These chemicals are common and have been found in the blood of almost everyone who has been tested.



What is the Safe Exposure Limit?

The contamination was identified in 2020 as a result of new guidance on safe levels of the six most common PFAS chemicals (PFAS6) from the state of Massachusetts. The state threshold is 20 parts per trillion (ppt), or 20 ng/L. Well #6 of the Hopkinton town water supply was initially measured at 22 ng/L. The threshold of 20 ng/L represents a safe level of daily exposure over one's entire life.

20 ng/L is the equivalent of 1 drop of water in an Olympic size swimming pool. The threshold was calculated as an overestimate out of an abundance of caution, taking into consideration vulnerable groups, and that water isn't our only exposure to PFAS.

Should I Be Concerned?

Most individuals do not need to worry about a short-term, low-grade elevated exposure to PFAS in water, such as the one we are currently experiencing in Hopkinton. Consuming water with elevated PFAS levels does not mean adverse effects will occur. This depends on the magnitude of PFAS elevation, the duration of exposure, and one's personal vulnerability.

However, it is recommended that certain groups, such as those shown below, should use other drinking/cooking water sources until levels are reduced. This is because these groups are more affected by PFAS than the general public. If you are concerned about your exposure or possible symptoms, please contact a trusted medical provider.

Sensitive Groups

Pregnant/Nursing Women

Infants

Those with Compromised Immune Systems



What questions do you still have about PFAS? Scan here to give your feedback on this pamphlet!

How Did This Happen?

Contamination in Hopkinton

An assessment was conducted of potential sources of contamination throughout the last few decades. The most common routes of PFAS exposure, such as chemical waste from factories/power plants or firefighting foam, do not appear to be the cause in Hopkinton.

The most likely cause is actually from human waste. Because PFAS is so common in our bodies, food, and household products, it is often found in both solid waste and wastewater. It is hypothesized that PFAS in leaching fields from the Fruit St. wastewater treatment plant, as well as from private septic tanks, entered the water supply, since some of these fields overlap with water protection zones for the town wells.

How are we exposed?

It is predicted that 60% of Americans drink water with some level of PFAS contamination. In addition, we are also exposed through our food - including fish and meat products or crops fed with certain fertilizers. Food can also become contaminated through contact with water- or grease-resistant packaging. Consumer products such as cosmetics, nonstick cookware, textiles, and cleaning agents likely also contribute to exposure.

Common Questions

If I stop drinking tap water, will I stop my PFAS exposure?

While switching your water source may reduce your exposure, it will not eliminate it entirely, as we are exposed through many aspects of our daily lives. If you choose to purchase bottled water, be sure to buy from sources that report their PFAS levels as well. Scan the QR code below for a list of bottled water brands.

Is my water contaminated?

Although only one well is above the threshold, it is the largest source of water for the town supply. Therefore, we cannot determine whether specific addresses receive water from this well, although it is likely. However, water is blended with other wells before reaching residences, so it is diluted.

Can I filter my water myself?

There are a few certified at-home filtration systems that can filter PFAS. However, these systems were designed to meet the federal health advisory of 70 ng/L, which is higher than the MA standard of 20 ng/L. As a result, we cannot certify that these systems will filter PFAS at the levels we currently see. Please note: boiling water does not remove PFAS.

What if I use a private well?

If you are concerned about the quality of water in a private well, please reach out to the Board of Health to discuss your options.

What is Hopkinton Doing?

Remediation Plan

Short term mitigation measures include a bottled water rebate program for those who are vulnerable. Scan the QR code below to learn more about this program. The contaminated water from Well #6 is also being blended with other wells to reduce PFAS concentration before it reaches residences.

Longer term plans include installing a dual carbon and resin filtration system (already underway), as well as building the infrastructure to switch Hopkinton's water source to the MWRA supply, which feeds much of Eastern MA.

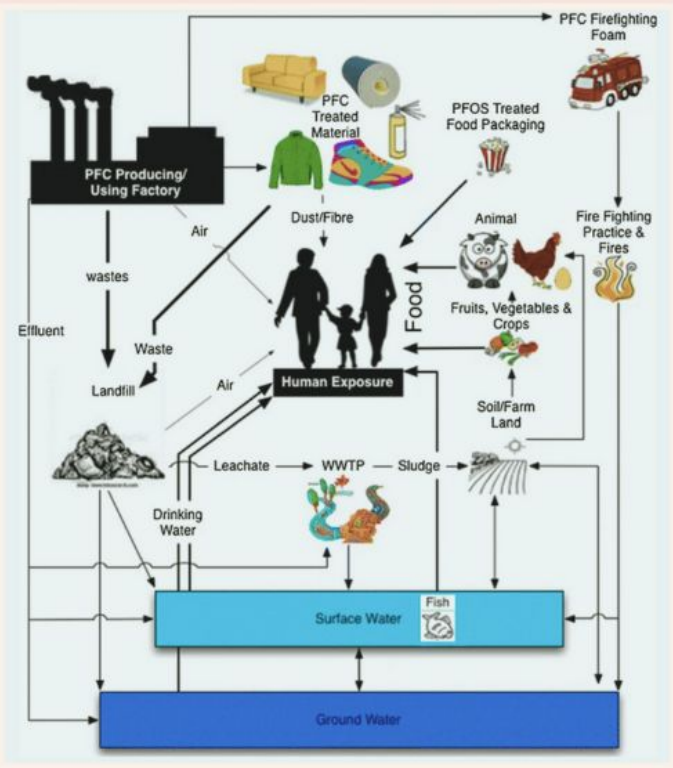


Much is still unknown about PFAS and the risk they pose to our health, but the Board of Health and Department of Public Works are dedicated to providing safe drinking water to Hopkinton residents based on the latest state health guidelines.



Scan here to learn more about PFAS in Hopkinton, to apply for the water rebate program, and to learn which bottled water brands test their water for PFAS.

PFAS in Hopkinton



Oliaei et al., 2013

Limiting PFAS exposure through drinking water is important, but be aware that clean drinking water will not stop your exposure entirely.

Based on Frequent Consumption of These Food Items...	Estimated PFAS Levels in Humans
Food products in water/grease-resistant wrapping	<div style="text-align: center;"> <p>Higher</p> <p>Lower</p> </div>
High fat/high cholesterol food products	
Meat/Fish/Dairy products	
Plant-based food products	

We are also exposed through our household products, such as carpets, clothing, cleaning agents, cosmetics, and nonstick cookware. All of these exposures work together to add up to the total PFAS burden in our bodies.

Sources: Christensen et al., 2017, Eick et al., 2021, Menzel et al., 2021, Roth et al., 2020, Kotthoff et al., 2015, Consumerreports.org.



PFAS in Hopkinton

This questionnaire aims to assess residents' knowledge of PFAS chemicals, and their presence in Hopkinton.

Email *

Valid email

This form is collecting emails. [Change settings](#)

Next Steps



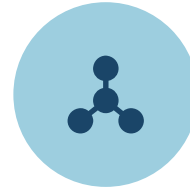
Translation

Translate pamphlet into Spanish and other commonly spoken languages among residents of Hopkinton



Distribution

Distribute pamphlet with water/tax bills. It will also be digitally available on the Hopkinton website.



Assessment

Monitor distribution, and assess effectiveness based on community feedback through google form. Modify as needed, and share resources with nearby towns facing similar issues.



Thank You!

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