

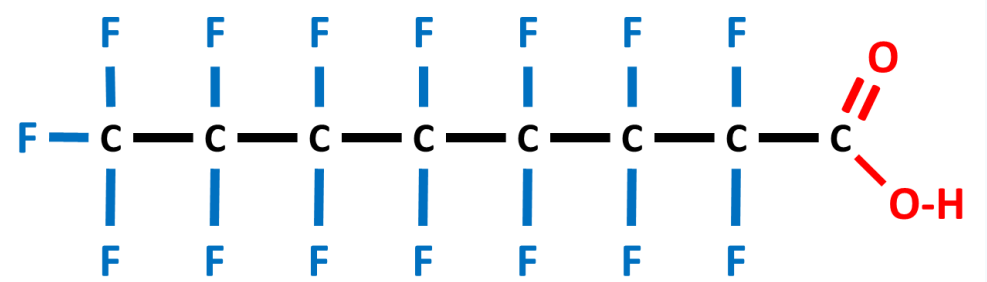
# Stow Select Board PFAS in Drinking Water

October 11, 2022

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**Kevin Daoust**, Section Chief, MassDEP Central Regional Office

# What Are PFAS?



## Poly- and perfluoroalkyl Substances

*A family of thousands 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)*

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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)

# 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>

*Where does  
your water come  
from?*



Public water supply wells: serve 25 or more people each day, even if privately owned

Private wells: fewer than 25 people, even if publicly owned



# Drinking Water and Cleanup Standards

- Cleanup standard became effective in December 2019, drinking water standard effective October 2020
- **20 parts per trillion** for the total concentration of **six PFAS compounds combined**
- The standard is health-based, protective of the most sensitive population and accounts for exposure to PFAS from sources in addition to drinking water

# Stow Community Public Water Systems

<b>PWS Name</b>	<b>Population</b>	<b>PFAS violation?</b>
Arbor Glen	132	No
Juniper Hill Water Company	220	No
Pilot Grove Apartments I	175	Yes
Pilot Grove Apartments II	134	Yes
Plantation Apartments	54	No
Regency at Stow	132	No
The Meeting House at Stow	92	No
Villages at Stow	300	No



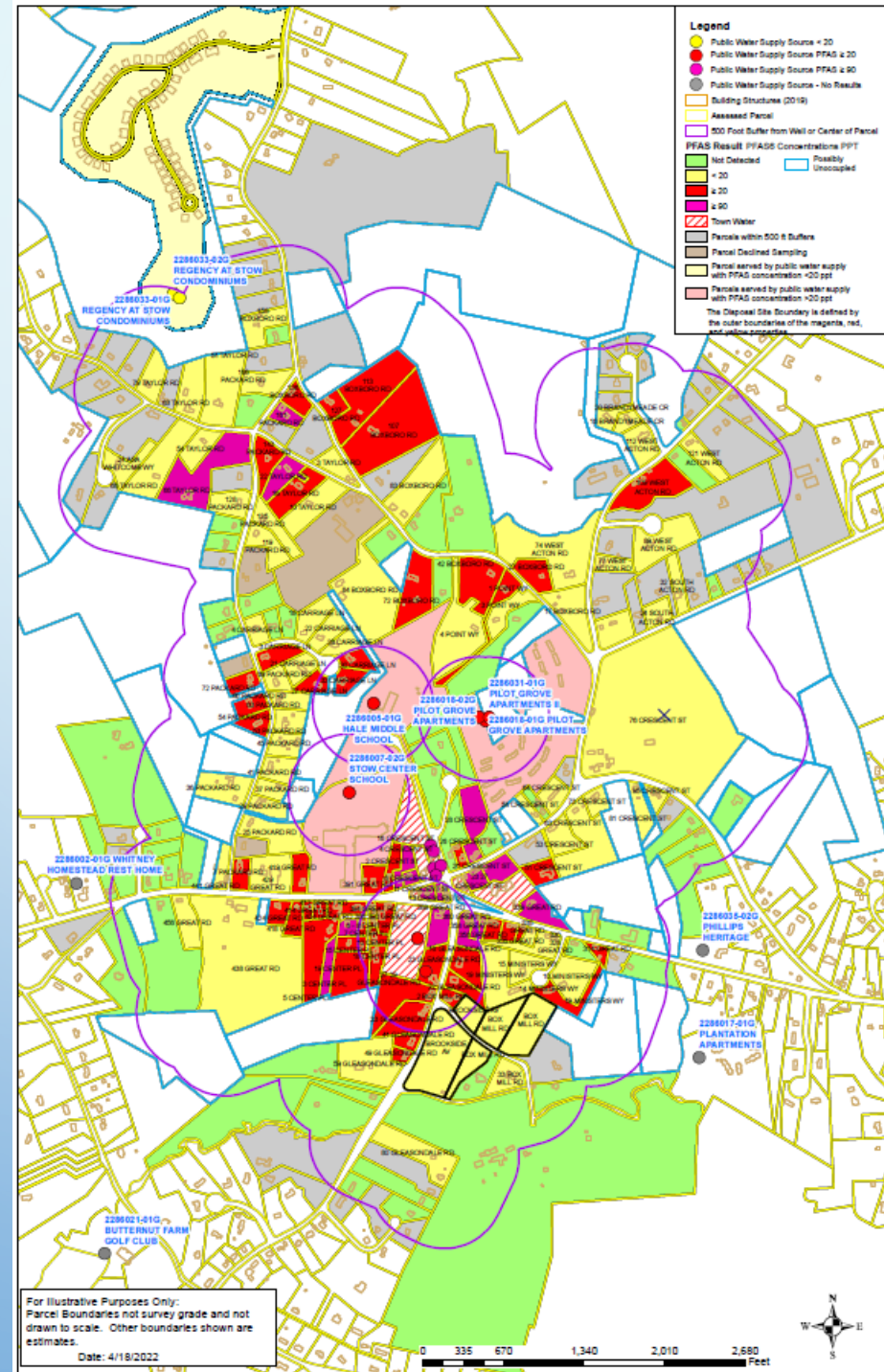
# Private Well Contamination Cleanup: General Laws Chapter 21E

- Any location where hazardous materials were deposited, stored, placed, disposed of, or have otherwise come to be located is a “Site”
- The owners, operators, persons who brought hazardous materials or arranged for materials to go to a Site are responsible to clean up to a condition of No Significant Risk
- Privatized program requires Responsible Parties to hire a Licensed Site Professional to implement the cleanup subject to review by MassDEP

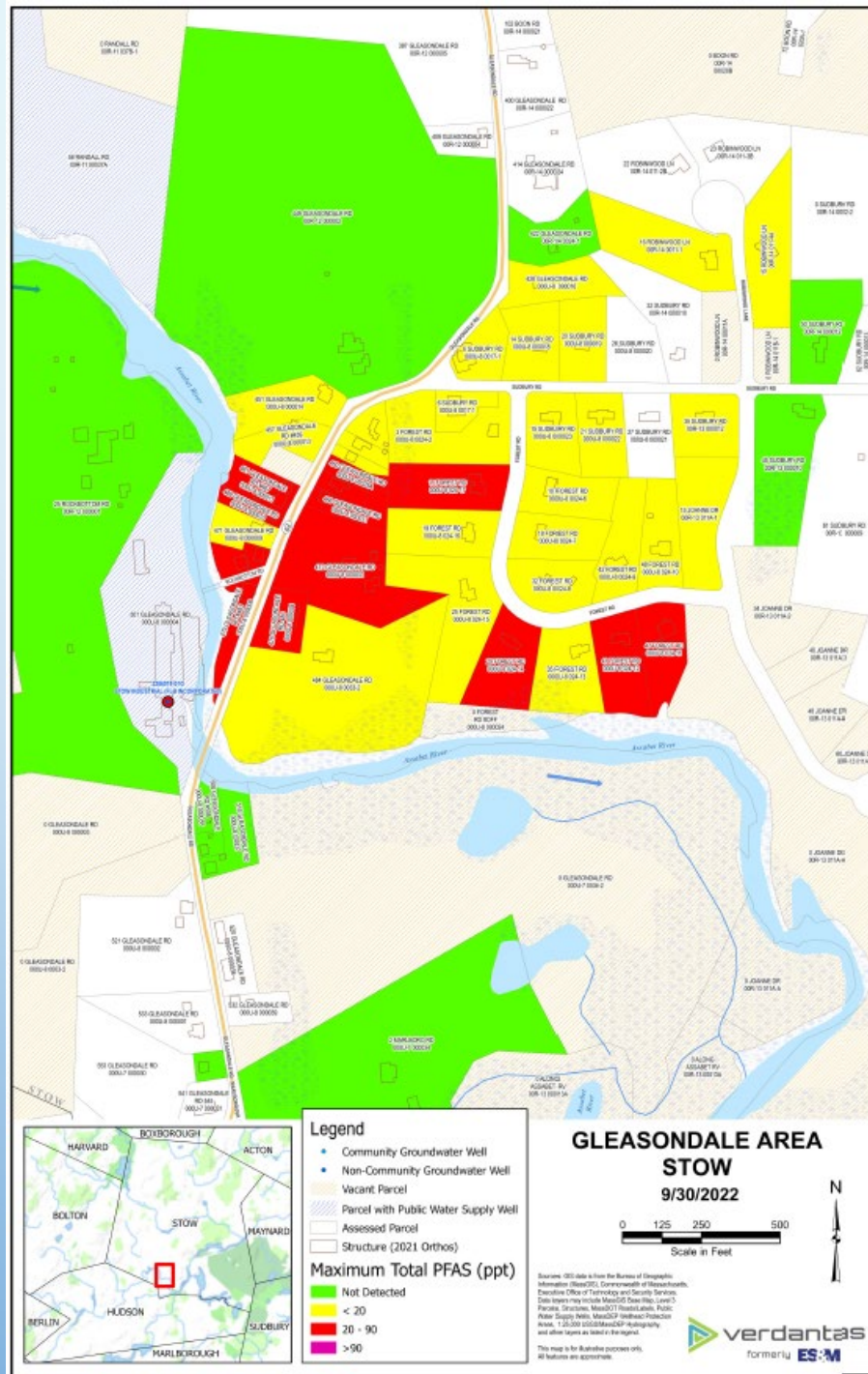


# Contaminated Sites in Stow

- Stow Center (16 Crescent Street), Town of Stow **RTN 2-0021075**
- Massachusetts Firefighting Academy, Department of Fire Services, **RTN 2-0021045**
- Former Gleasondale Mill, Stow Industrial LLC and others, **RTN 2-0021116**
- Bose (688 Great Road), **RTN 2-0021541**
- Harvard Road Area, **RTN 2-0022042**



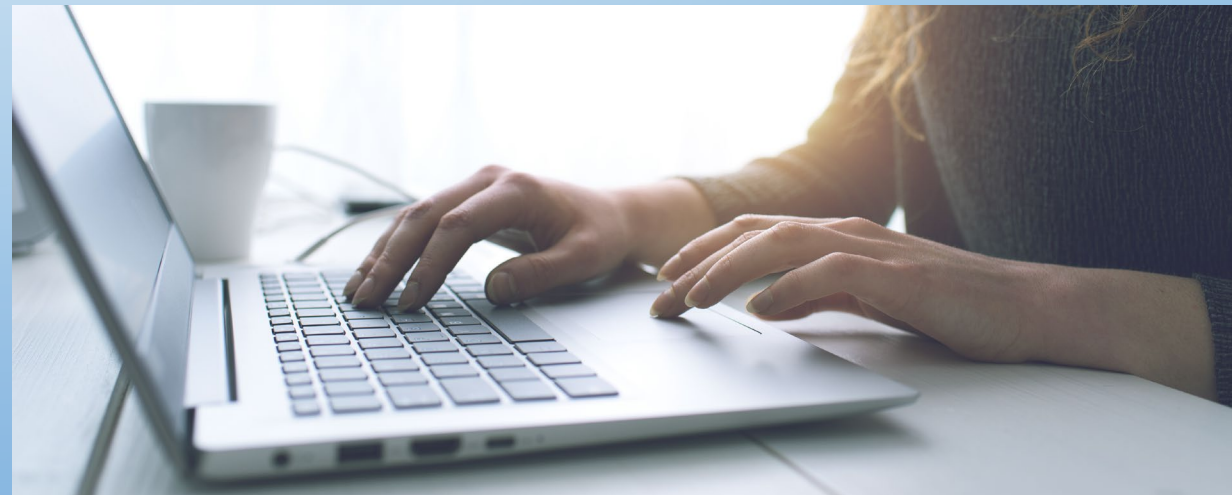




# How to find information about the Sites

On-line data portal

<https://eeaonline.eea.state.ma.us/Portal/#!/search/waste>  
esite





## Energy & Environmental Affairs Data Portal

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DASHBOARDS

SEARCH DATA ▼

HELP ▼

### Search for Waste Site & Reportable Releases

Search Type ?

Select ▼

City/Town ?

Select ▼

RTN ?

2-0021075

Address ?

Compliance Status ?

Select ▼

LSP ?

Select ▼

Site Name ?

◀ PREVIOUS

✕ CLEAR

🔍 SEARCH





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### Waste Site & Reportable Releases Results

VIEW MAP

Search Criteria RTN: 2-0021075

1/1 200 ▼

1 - 1 of 1 items

SELECT ...	RTN	CITY/TOWN ...	RELEASE ADDRES...	SITE NAME LOCATION AID ...	REPORTING CATEGO...	NOTIFICATION DA...	COMPLIANCE STATU...	COMPLIANCE DATE ..
	2-0021075	STOW	16 CRESCENT ST	FMR FIRE STATION	TWO HR	10/01/2019	TIERI	12/20/2021



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### Waste Site & Reportable Releases Information

#### Related links

[Supporting Documents](#)  
[LSP Lookup](#)



Site Number ?  
2-0021075

Site Name ?  
FMR FIRE STATION

Compliance Status ?  
TIERI

Compliance Date ?  
12/20/2021

Phase ?

RAO Class ?

Location Type ?  
SCHOOL

Source ?  
UNKNOWN

Category ?  
TWO HR

AUL Info ?

Address ?  
16 CRESCENT ST

Town ?  
STOW

Zip Code ?

Official Notification Date ?  
10/01/2019

Initial Status Date ?  
12/21/2021

No scanned files found

## Electronically Submitted Files

RTN	Form Name	Submit Date	Attachments	Notes	Trans.ID
2-21075	BWSC126 Miscellaneous Document Transmittal Form- 570	2/11/2022 1:38:27 PM	185 kb 2-21075 Town of Stow Legal Notice Tear S		1344421
2-21075	BWSC102 Release Amendment Form- 541	3/9/2022 11:55:15 AM	215 kb 2-0021075 - STOW - Call Agenda_ Bottled		1352962
2-21075	BWSC128 Recording Receipt/Issuance Form- 685	3/9/2022 11:59:38 AM	200 kb 2-0021075 - STOW - IRA Mod 2-9-2022 2-		1352977
2-21075	BWSC105 Immediate Response Action Transmittal Form- 604	3/11/2022 3:29:27 PM	276 kb STWO0001 IRA Plan Modification Letter_2		1353115
2-21075	BWSC128 Recording Receipt/Issuance Form- 685	3/29/2022 10:59:29 AM	200 kb 2-0021075 - STOW - IRA Mod 3-11-2022 3		1359086
2-21075	BWSC105 Immediate Response Action Transmittal Form- 604	4/26/2022 11:18:56 AM	19 mb STWO0001_IRA Status Report 3-RTN-2-21 160 kb STWO0001_Statement of Provision-MassD		1365531
2-21075	BWSC128 Recording Receipt/Issuance Form- 685	5/19/2022 9:00:39 AM	200 kb 2-0021075 - STOW - IRA Sts 4-26-2022 4-		1373310
2-21075	BWSC102 Release Amendment Form- 541	5/19/2022 9:28:36 AM			1373317
2-21075	BWSC126 Miscellaneous Document Transmittal Form- 570	6/7/2022 9:11:22 AM	474 kb STWO0001 IRA Schedule Update_202206		1378083
2-21075	BWSC128 Recording Receipt/Issuance Form- 685	6/16/2022 1:48:16 PM	321 kb 2-0021075 - Stow - IRA Mod Approval 03-2		1381137
2-21075	BWSC128 Recording Receipt/Issuance Form- 685	6/27/2022 9:21:09 AM	282 kb 2-0021075 - Stow - Schedule Approval 06-1		1382621

# 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

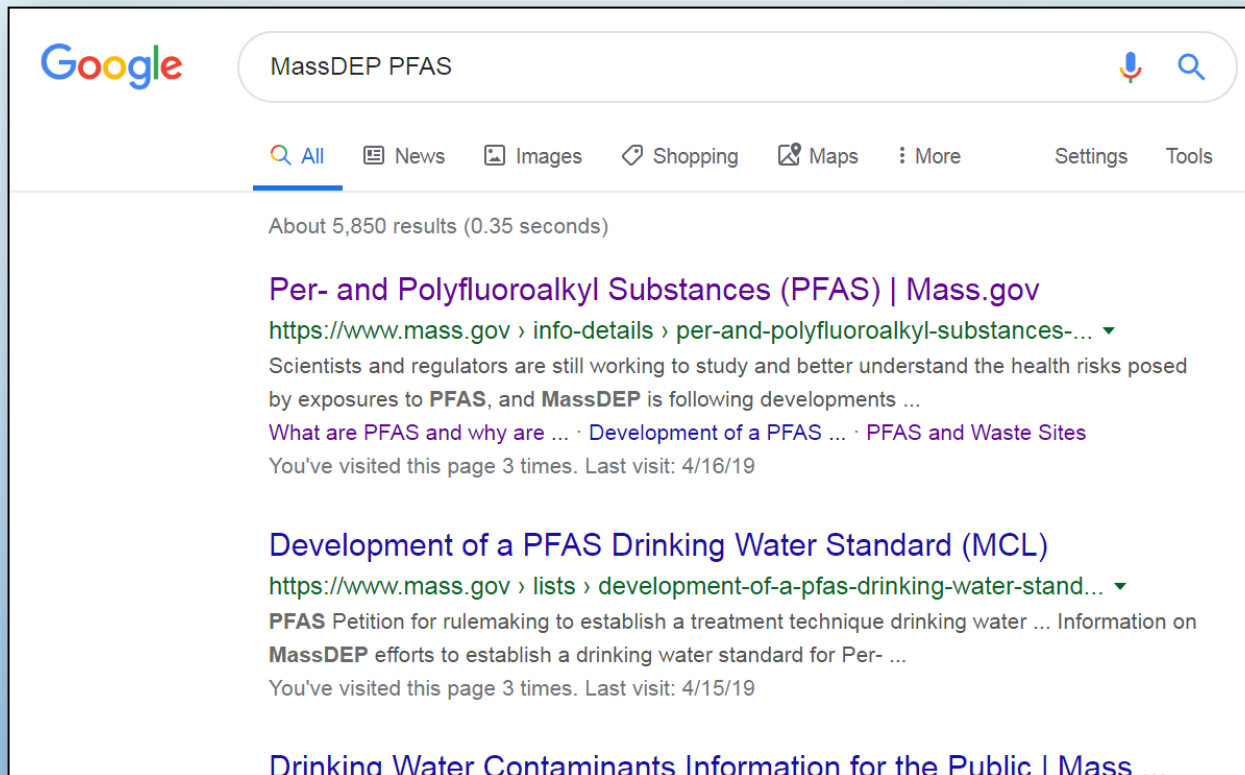
## June 2022

- 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



# More Information...

## Just Google... *MassDEP PFAS*



Google search results for "MassDEP PFAS". The search bar shows "MassDEP PFAS" and the results indicate "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](https://www.youtube.com/MassDEP)  
[flickr.com/MassDEP](https://www.flickr.com/MassDEP)  
[Mass.Gov/DEP](https://www.mass.gov/DEP)  
[@MassDEP](https://twitter.com/MassDEP)

# MassDEP addressing PFAS contamination

PFAS information

Projects by Public Water Systems PWS in Massachusetts to address PFAS contamination. This story map consists of clickable seven tabs that present interactive maps, dashboards and photographs that describe the efforts by MassDEP and the PWSs to address PFAS contamination.



## 1 Introduction

Massachusetts, along with many other states, faces an emerging public health challenge from a group of chemicals called per-and polyfluoroalkyl substances or "[PFAS](#)." The Baker-Polito Administration secured \$28.4 million in two recent supplemental budgets for water infrastructure and PFAS testing. Of that, \$8.4 million was appropriated for the testing of water supplies for PFAS for grants for the design of PFAS remediation in Public Water Systems. \$20 million was appropriated to the Commonwealth's Clean Water Trust, which makes financing available through construction loans to communities to address contamination issues.

## 2 Testing

## 3 Public Water Systems Tested

## 4 PFAS detections and



Photo of Quabbin Reservoir, courtesy of MWRA.  
For more information see [www.MWRA.com](http://www.MWRA.com)