Is Ayer’s Water Safe to Drink – An Update on PFAS Contamination

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Superintendent of Public Works

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Frequently Asked Questions (and Answers)

• What is PFAS?
• Why is it in Ayer’s drinking water?
• Are there health issues related to PFAS exposure?
• Is PFAS in drinking water regulated by the EPA and DEP?
• What is the Town doing about PFAS in our drinking water?
• Is Ayer’s water safe to drink?
What is PFAS?

• Per- and Poly-fluoroalkyls Substances (PFAS) are a group of man-made chemicals
• Used to make carpets, clothing, non stick pans, fabrics for furniture, paper packaging for food, fire fighting foam and industrial processes
• Perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS) and GenX of most concern
• Can travel long distances through soil, groundwater or air
• Found in over 95 percent of people in the US
PFAS Measured in Parts Per Trillion

One part per million (ppm) equals
1 inch in 16 miles
1 minute in 2 years
1 cent in $10,000
1 drop of gasoline in a full-sized car’s tank

One part per billion (ppb) equals
1 inch in 16,000 miles
1 second in 32 years
1 cent in $10,000,000
1 kernel of corn in a silo that is 16 feet in diameter and 45 feet high

One part per trillion (ppt) equals
1 inch in 16,000,000 miles
1 second in 320 centuries
1 cent in $10,000,000,000
1 drop of water in a pool covering a football field to a depth of 43 feet

A **trillion** dollars – how $100 bills would stack up

631 miles (1015.4km)
Two and a half times as high as the International Space Station

3.3 feet (1m)
The height of a chair

0.63 miles (1.01km)
Higher than the “world’s tallest building”

Burj Khalifa
0.514 miles high (0.827km)

Space Station
248 miles high (400km)

Earth
Why is it in Ayer’s drinking water?
Why is it in Ayer’s drinking water?

- Grove Pond Wellfield provides 60% of Town’s water
- Due to proximity to Fort Devens, MassDEP required Ayer to test Grove Pond Well water for **unregulated** contaminants PFOA and PFAS in September 2016
- Wells tested positive and GP Well 8 was over the 70 ppt level
Why is it in Ayer’s drinking water?
How Much PFAS is in Ayer’s Water?
5 “Long Chain” PFAS

- Grove Pond Well 1: 25.97 ppt
- Grove Pond Well 6: 24.40 ppt
- Grove Pond Well 7: 76.04 ppt
- Grove Pond Wells 6&7: 50.21 ppt
- Grove Pond Well 8 (not in service): 250.26 ppt

– February 2019 Sample Results
Are there health issues related to PFAS exposure?

• Some scientific studies suggest that certain PFAS may affect different systems in the body

• Studies in people have shown that certain PFAS may:
  – affect growth, learning, and behavior of infants and older children
  – lower a woman’s chance of getting pregnant
  – interfere with the body’s natural hormones
  – increase cholesterol levels
  – affect the immune system
  – increase the risk of cancer
Are there health issues related to PFAS exposure?

- CDC and Agency for Toxic Substances and Disease Registry (ATSDR) are preparing to conduct health study at multiple U.S. sites to learn more about the health effects of exposure PFAS
- Generally based on long term exposure
- Sensitive population includes infants, pregnant and nursing mothers
- Talk to your Dr. or Health Professional
- Lots of info on the Web
  - https://www.atsdr.cdc.gov/pfas/
Is PFAS in drinking water regulated by the EPA and DEP?

- EPA required PFAS sampling of some water supplies under the Unregulated Contaminant Monitoring Rule in 2013 (UMCR3)
- In 2016 EPA issued Health Advisory for PFOA and PFOS limit of 70 ppt
- Several States including Mass have established PFAS drinking water limits / advisories
States With Numerical PFAS Limits

Washington
- Banned in firefighting foam and food packaging
- Proposed drinking water standard

Vermont
- 20 PPT (PFAS)
- Drinking water health advisory for 5 PFAS

Massachusetts
- 70 PPT (PFAS)
- State guidance for concentrations of 5 PFAS in drinking water

New Jersey
- Set PFNA standard at 13 ppt
- Weighing proposed standards for: PFOA at 14 ppt PFOS at 13 ppt

California
- 14 PPT (PFOA)
- 13 PPT (PFOS)
- Drinking water notification guidance

Colorado
- PFOA/PFAS listed as hazardous waste
- 70 PPT (Combined PFOA/PFOS)
- Groundwater quality standard for El Paso County only

Minnesota
- 35 PPT (PFOA)
- 27 PPT (PFOS)
- Health-based guidance values

Michigan
- 70 PPT (Combined PFOA/PFOS)
- State standard for concentrations in drinking water

(Graphic: Bloomberg Environment)
Massachusetts Drinking Water Advisory

• MADEP contacted Ayer in early 2018 to advise on the upcoming change in health advisory and worked closely with the DPW to take well 8 off-line
• June 2018, MADEP issued public health guideline to address five PFAS chemicals
• Office of Research and Standards Guideline (ORSG) set limit to protect against adverse health effects for long and short term exposure
  – consumers in sensitive subgroups (pregnant women, nursing mothers and infants) not consume water when the level of the five PFAS substances, individually or in combination, is above 70 ppt
  – public water suppliers take steps expeditiously to lower levels of the five PFAS to below 70 ppt for all consumers.
EPA Action Plan

EPA’s PFAS Action Plan: A Summary of Key Actions

EPA’s PFAS Action Plan outlines concrete steps the agency is taking to address PFAS and to protect public health.

EPA’s Per- and Polyfluoroalkyl Substances (PFAS) Action Plan:
- Demonstrates the agency’s critical national leadership by providing both short-term solutions and long-term strategies to address this important issue.
- Provides a multi-media, multi-program, national research and risk communication plan to address this emerging environmental challenge.
- Responds to the extensive public input the agency has received over the past year during the PFAS National Leadership Summit, multiple community engagements, and through the public docket.

EPA is taking a proactive, cross-agency approach to addressing PFAS. The key actions EPA is taking to help provide the necessary tools to assist states, tribes, and communities in addressing PFAS are summarized below.

DRINKING WATER
EPA is moving forward with the Maximum Contaminant Level (MCL) process for PFOS and PFOA—two of the most well-known and prevalent PFAS chemicals. The Agency is also gathering and evaluating information to determine if regulation is appropriate for a broader class of PFAS.

The next step in the Safe Drinking Water Act process for issuing drinking water standards is to propose a regulatory determination. This provides the opportunity for the public to contribute to the information the EPA will consider related to the regulation of PFAS in drinking water.

CLEANUP
EPA continues strengthening enforcement authorities and clarifying cleanup strategies through actions such as designating PFOS and PFOA as hazardous substances and developing interim groundwater cleanup recommendations.

This important work will provide additional tools to help states and communities address existing contamination and enhance the ability to hold responsible parties accountable.

TOXICS
EPA is considering the addition of PFAS chemicals to the Toxics Release Inventory and rules to prohibit the uses of certain PFAS chemicals.

The Toxics Release Inventory would make information about certain PFAS releases reported by certain industrial sectors and federal facilities available. Additionally, the TSCA new chemicals program will help manage and, as necessary, reduce risk to human health and the environment from new PFAS.

MONITORING
EPA will propose nationwide drinking water monitoring for PFAS under the next UCMR monitoring cycle.

Monitoring results will improve understanding of the frequency and concentration of PFAS occurrence in drinking water, which can be used to inform regulatory action.

RESEARCH
EPA is rapidly expanding the scientific foundation for understanding and managing risk from PFAS.

Improved detection and measurement methods, additional information about PFAS presence in the environment and drinking water, better understanding of effective treatment and remediation methods, and more information about the potential toxicity of a broader set of PFAS will help EPA, states, and others better manage PFAS risks.

ENFORCEMENT
EPA uses enforcement tools, when appropriate, to address PFAS exposure in the environment and assist states in enforcement activities.

EPA seeks to support communities that have PFAS releases by using federal enforcement authorities, where appropriate.

RISK COMMUNICATIONS
EPA will work collaboratively to develop a risk communication toolbox that includes multi-media materials and messaging for federal, state, tribal, and local partners to use with the public.

This will help ensure clear and consistent messages to the public and will help address concerns related to PFAS.
What is the Town doing about PFAS in our drinking water?

• DPW has been proactive in lowering levels of PFAS to below the MassDEP Health Advisory
• Worked with EPA, DEP and Sen Warren to reach agreement with the Army to fund temporary and permanent treatment
• Provided regular updates at Selectmen’s meetings
Ayer DPW Action to Date

• DPW worked closely with MassDEP to minimize exposure of PFAS chemicals
• Initially blended Well 8 with Wells 6&7 to keep levels of PFOA and PFOS below 70 ppt
• DPW stopped using Well 8 in late February 2018
• DPW issued public notification to all residents in March 2018
• Completed treatment study in spring 2018
• Re-activated Grove Pond Well 1 for summer demand
• Completed construction of Spec Pond Well 2 replacement – tested at 900 gpm
• Cleaned and redeveloped SP Well 1A, GP 6&7
• Cleaned filter media at both WTPs
DPW Actions Cont’d

• Continue quarterly sampling of Grove Pond Wells
• Town Meeting Approved $4.2M for PFAS removal treatment system at Grove Pond – Army has agreed to cover cost
• Completed bench scale rapid column testing
• Completed design of treatment system – Bid in May
• Working with Army to install temporary treatment for GP Well 8
• Constructed emergency interconnection with Devens
TOWN OF AYER, MASSACHUSETTS

GROVE POND WATER TREATMENT PLANT

PFAS TREATMENT FACILITIES

CONTRACT NO. 19DPW08

TOWN MANAGER ✓
ROBERT PONTEBRADE

DEPARTMENT OF PUBLIC WORKS ✓
SUPERINTENDENT
MARK WETZEL, P.E.

TOWN ENGINEER
DAN VAN SCHALKWYK, P.E.

BOARD OF SELECTMEN
JANNICE L. LIVINGSTON - CHAIR
CHRISTOPHER R. HILLMAN - VICE CHAIR
SCOTT A. HOUBE - CLERK

LOCATION PLAN
AERIAL VIEW

FEBRUARY 2019

90% DESIGN SUBMITTAL
NOT FOR CONSTRUCTION
March 6, 2019 Update: This drawing set includes updates from February 28, 2019 in that Drawings C-1, C-2, C-3 and M-4 were replaced, and the existing site survey plan was inserted before the Civil drawings.

CDM Smith
BOSTON, MASSACHUSETTS

Water | Environment | Transportation | Energy | Facilities
Is Ayer’s water safe to drink?

- Ayer tests for over 90 microbial, inorganics, organics, metals, radionuclides, disinfection byproducts
- Meet all EPA Safe Drinking Water Standards
- Water is below Mass ORSG Guideline of 70 PPT for 5 long chain PFAS
- If you are concerned about any level of PFAS in your water, install a filter or use bottled water
Resources:

- MassDEP Fact Sheet – PFAS in Drinking Water: Questions and Answers for Consumers

- EPA’s Drinking Water Health Advisories can be found at:

- The Centers for Disease Control and Prevention’s Public Health Statement for PFOS and PFOA can be found at: https://www.atsdr.cdc.gov/pfas/index.html

- The CDC’s on Per- and Polyfluoroalkyl Substances (PFAs) and your health:

- NSF certified filters to reduce PFOA and PFOS concentrations in drinking water:

- Town of Ayer Web Page
  https://www.ayer.ma.us/water-department/pages/pfas-drinking-water
Questions?

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