

Annual Drinking Water Quality Report for Calendar Year 2020

SPRINGFIELD WATER AND SEWER COMMISSION



2020 Board of Commissioners
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The Board of Commissioners meets monthly. Please call 413-452-1300 or visit <https://waterand-sewer.org/updates/public-notice/> for meeting dates and times or to obtain extra copies of this report.

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(413) 310-3501

The Springfield Water and Sewer Commission provides this report to meet federal and state Safe Drinking Water Act Requirements.



Message from the Executive Director

Dear Customer,

Water is essential to daily life and public health; we rely on it for staying hydrated, cooking, cleaning, handwashing, and more. From the source in Cobble Mountain Reservoir to the faucet in your home, the Springfield Water and Sewer Commission takes great pride in the stewardship of your water, and ensuring every drop is safe to use and drink.

Also essential is the Commission's water workforce who operate and maintain the drinking water system 24/7/365. In 2020, the dedicated employees of the Commission continued to carry out these essential duties, while enhancing safety protocols amid the COVID-19 pandemic, to uphold the Commission's mission to provide a high-quality, uninterrupted supply of drinking water.

As part of these essential responsibilities, the Commission conducts daily water quality monitoring, and collects water samples from throughout the distribution system each day. In 2020 Commission personnel analyzed approximately 52,000 water sample tests to ensure the water distributed to homes and businesses meets strict drinking water quality standards.

The Springfield Water and Sewer Commission is pleased to share with you the 2020 Water Quality Report. This report summarizes the water quality tests from the past year and provides information about the source of your drinking water, treatment, proactive filtration plant upgrades, and other useful information.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail. This report is available online at www.waterandsewer.org/waterqualityreport.



Joshua D. Schimmel
Executive Director

Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

How We Treat Your Water

Water from Cobble Mountain Reservoir and Borden Brook Reservoir is filtered and treated at the West Parish Filters Water Treatment Plant in Westfield. After treatment, clean drinking water is delivered to retail customers in Springfield and Ludlow and wholesale customers in Agawam, East Longmeadow, and Longmeadow, at an annual average of 30 million gallons per day.

Protecting Your Water Source

Producing fresh, safe drinking water begins at the source. The Commission actively protects and manages the watershed areas surrounding its reservoirs for the purpose of water supply protection. A healthy and resilient forest surrounding a water supply performs an important first step in the water treatment process and enhances water quality.

The Commission's primary water supplies, Cobble Mountain Reservoir (Source ID 1281000-02S) and Borden Brook Reservoir (Source ID 1281000-04S), are located 20 miles west of the City of Springfield in

Blandford and Granville, Massachusetts and surrounded by 14,000 acres of protected forestland within the Little River Watershed. The unspoiled location and miles of protected land minimize the risk of water supply contamination, as the forest provides a natural buffer to surrounding development and natural filtration of potential contaminants.

The Commission is dedicated to protecting the environment and your drinking water source through an active Watershed Management Program. Active forest management includes monitoring for encroachment and potential sources of contamination; maintenance of watershed infrastructure, including roads and culverts; and other forest management activities to promote a healthy and resilient forest. While the majority of the land surrounding the reservoirs remains protected, the Commission also maintains a land acquisition program to continue to enhance source protection and water quality.

These maintenance activities, watershed monitoring, and forest management are guided by the Commission's Watershed Protection Plan and Watershed Forest Vision, which provide a blueprint for source water protection and watershed management, to safeguard the drinking water supply, not only today, but well into the future.

The Massachusetts Department of Environmental Protection (MassDEP) completed a Source Water Assessment that evaluates the susceptibility of public water supplies to contamination from surrounding land uses. A susceptibility ranking of moderate was assigned to the Commission's system using the information collected. Risks identified include residential land use, transportation rights of way, and agriculture. The complete Source Water Assessment Program report is available by contacting the Commission at **413-452-1300** or at <https://www.mass.gov/doc/western-region-source-water-assessment-protection-swap-program-reports>.

Important Information from U.S. EPA and MassDEP

What could be in the water before it is treated?

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, humans, and wildlife.

Inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

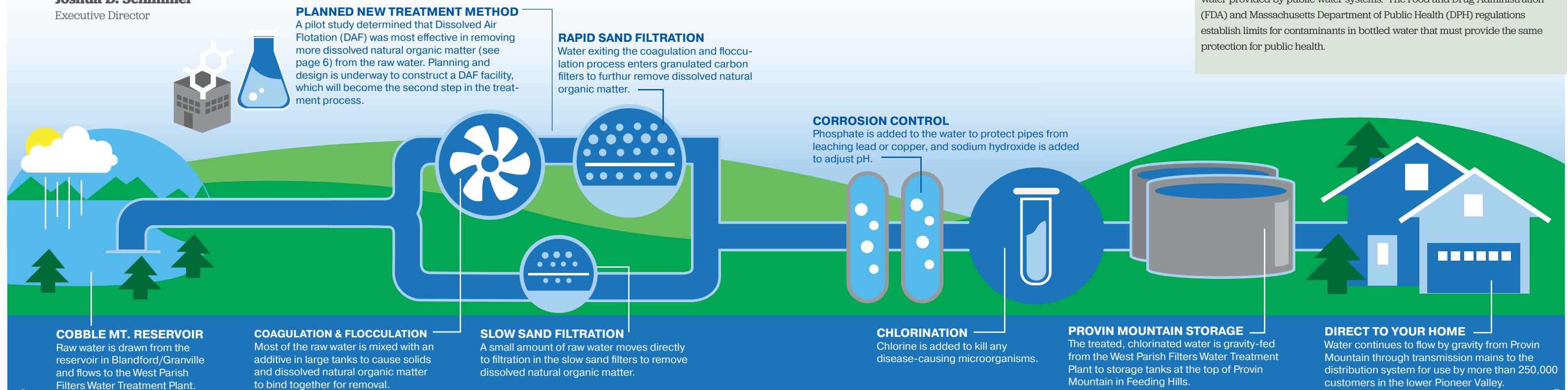
Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants can be naturally occurring or be the result of oil and gas production, and mining activities.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.



2020 SWSC WATER QUALITY INFORMATION TABLE

The table below shows detections of regulated contaminants through water quality testing in 2020 (unless otherwise specified), and how they compare to state and federal standards. The Commission's state-certified laboratory analyzed approximately 52,000 water quality tests in 2020.

Private certified laboratories were also utilized to analyze water samples. The testing results are from finished water in the distribution system. In 2020, sample results for one regulated contaminant exceeded regulatory limits. Information about this exceedance is also contained in this report.

PUBLIC WATER SUPPLY IDENTIFICATION #1281000							
DISINFECTANTS	DATE	MRDLG	MRDL	HIGHEST QUARTERLY ANNUAL AVERAGE	RANGE DETECTED AT INDIVIDUAL SAMPLING SITES	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Residual Free Chlorine (ppm)	Daily	< 4.0	4.0	0.68	ND - 1.84	No	Water additive used to control microbes
BACTERIA	DATE	MCLG	MCL	HIGHEST DETECTED LEVEL	RANGE DETECTED AT INDIVIDUAL SAMPLING SITES	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Heterotrophic Plate Counts (HPC) [‡]	Daily	N/A	TT	135	ND - 135 CFU/ml	No	HPC is an indicator method that measures a range of naturally - occurring bacteria in the environment.
INORGANICS	DATE	MCLG	MCL	HIGHEST DETECTED LEVEL	RANGE DETECTED AT INDIVIDUAL SAMPLING SITES	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Nitrate (ppm)	Yearly	0	10	0.0698	N/A	No	Erosion of natural deposits, stormwater, fertilizer run-off
Barium (ppm)	Yearly	0	2	0.0074	N/A	No	Erosion of natural deposits
RADIONUCLIDES 9/8/2015	DATE	MCLG	MCL	HIGHEST DETECTED LEVEL	RANGE DETECTED AT INDIVIDUAL SAMPLING SITES	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Gross Alpha (pCi/L)	9/18/2015	0	15	0.262	N/A	No	Erosion of natural deposits
Radium-226 & Radium-228 Combined (pCi/L)	9/18/2015	0	5	0.25	N/A	No	
TURBIDITY *	DATE	MCLG	TT	HIGHEST SINGLE MEASUREMENT	LOWEST MONTHLY PERCENTAGE	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Rapid Sand Filtration ** (NTU)	Daily Compliance	N/A	1	0.160	N/A	No	Soil Runoff
Rapid Sand Filtration ** (NTU)	Monthly	N/A	TT: at least 95% of samples per month below 0.3	N/A	100%	No	
Slow Sand Filtration *** (NTU)	Daily Compliance	N/A	5	0.30	NA	No	
Slow Sand Filtration *** (NTU)	Monthly	N/A	TT: at least 95% of samples per month below 0.3	NA	100%	No	

[‡] Heterotrophic Plate Count is not associated with health effects but is a method that measures the bacterial quality of water as an indicator of the adequacy of disinfection.

UNREGULATED****	DATE	ORSG/SMCL	MCL	HIGHEST SINGLE MEASUREMENT	RANGE DETECTED	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Sodium (ppm)	Yearly	ORSG = 20	None	13.7	N/A	No	Natural sources; runoff from use of de-icing compounds on roadways
Manganese (ppb)	Yearly	SMCL = 50	None	6	N/A	No	Erosion of natural deposits
Chloroform (ppb)	Yearly	ORSG = 70	None	9.26	N/A	No	By-product of drinking water chlorination
Bromodichloromethane (ppb)	Yearly	None Established	None	0.77	N/A	No	

2020 SWSC WATER QUALITY INFORMATION TABLE (CONTINUED)



PUBLIC WATER SUPPLY IDENTIFICATION #1281000							
DISINFECTION BY-PRODUCTS	DATE	MCLG	MCL	HIGHEST LRAA	RANGE DETECTED AT INDIVIDUAL SAMPLING SITES	VIOLATION	MAJOR SOURCES IN DRINKING WATER
TTHMs (ppb) (Total Trihalomethanes)	Quarterly	N/A	80	65.2	37.3 - 69.0	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb) (Total Haloacetic Acids)	Quarterly	N/A	60	68.1	39.5 - 80.3	Yes	By-product of drinking water chlorination
HAA5 (ppb) by site	DATE	MCLG	MCL	HIGHEST LRAA	Range Detected	Violation	Major Sources in Drinking Water
833 Page Blvd.	3/3/20, 6/3/20	N/A	60	62.2	42.2 - 62.9	Yes	By-product of drinking water chlorination
Catalina Pump Station	3/3/20, 6/3/20	N/A	60	*65.7	45.0 - 57.0	Yes	
1400 State St. - Vibra	3/3/20, 6/3/20	N/A	60	67.3	45.5 - 73.2	Yes	
Center St. Fire Station, Ludlow	3/3/20, 6/3/20, 9/1/20	N/A	60	68.1	44.1 - 80.3	Yes	
1043 Sumner Ave.	3/3/20, 6/3/20, 9/1/20	N/A	60	*66.7	41.9 - 65.3	Yes	
322 Main St.	6/3/20	N/A	60	63.1	42.4 - 74.1	Yes	

*LRAA includes samples from 4th quarter 2019. Samples collected 12/3/2019: Catalina Pump Station, 77.9 ppb; 1043 Sumner Ave., 78.6 ppb.



Pilot Testing New Treatment Methods at West Parish Filters

West Parish Filters Water Treatment Plant was originally constructed in 1909, and last underwent significant upgrades in 1974.

A modernization of the plant is currently underway (more information on page 6). Water treatment plants are carefully calibrated to the specific chemistry of the water source, and, to inform plant upgrades, a pilot study was conducted in 2019 and 2020 to determine which method is most effective in treating raw water from Cobble Mountain Reservoir.

Pictured: In the fall of 2020 pilot testing was enhanced with the use of a portable trailer. Inside, dissolved air flotation (DAF) was further tested as a potential treatment method to remove more NOM from raw water from Cobble Mountain Reservoir.



Glossary of Terms

CFU (Colony Forming Unit)

***Heterotrophic Plate Counts (HPC)** - Heterotrophic Plate Count is not associated with health effects but is a method that measures the bacterial quality of water as an indicator of the adequacy of disinfection.

LRAA (Locational Running Annual Average) - The average of four consecutive quarters of data taken at one location.

MCL (Maximum Contaminant Level) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal) - The level of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A - Not Applicable

NTU (Nephelometric Turbidity Units) - A numeric value indicating the cloudiness of water.

ORSG (Massachusetts Office of Research and Standards Guideline) - The concentration of a chemical in drinking water, at or below which adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

ppb (parts per billion)

ppm (parts per million)

pCi/L (picocuries per liter) - A measure of radioactivity.

SMCL (Secondary Maximum Contaminant Level) - The highest level of a contaminant that is allowed in drinking water for the secondary contaminants. These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

TT (Treatment Technique) - A required process intended to reduce the level of a contaminant in drinking water.

* **Turbidity** - A measure of the cloudiness of water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system.

** **Rapid Sand Filtration** - The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed a maximum of 1.0 NTU in any single measurement.

*** **Slow Sand Filtration** - The turbidity level of the filtered water shall be less than or equal to 1.0 NTU in 95% of the measurements taken each month and shall not exceed a maximum of 5.0 NTU in any single measurement.

**** **Unregulated Contaminants** - Substances for which EPA has set guidelines but not established drinking water standards.



West Parish Filters Water Treatment Plant in Westfield

Cross Connection Control Program

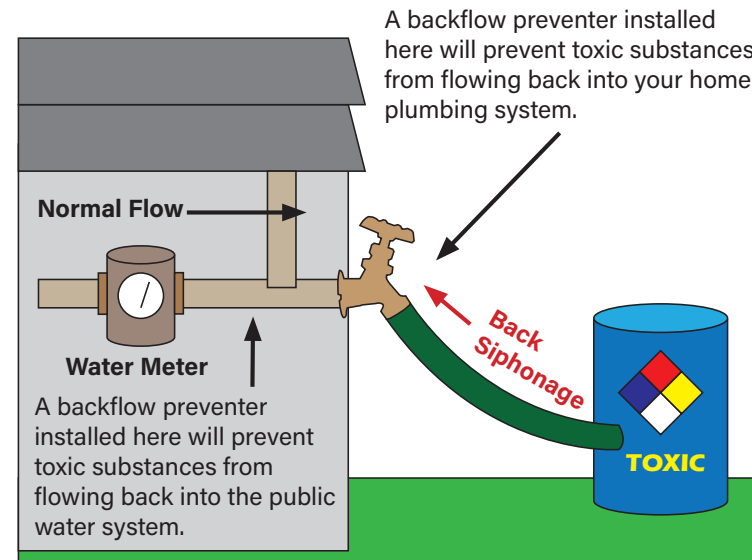
A cross connection is formed at any point where a drinking water line connects to a polluted source, such as boilers, air conditioning systems, fire sprinkler systems, irrigation systems, laboratory equipment, plating tanks, or chemical vats. In residences, a common cross connection is a garden hose attached to a fertilizer or chemical sprayer container, or a hose inserted into a pool. If water pressure drops, perhaps due to nearby fire hydrant use or a water main break, the resulting vacuum can pull pollutants back into the water system.

To prevent contamination through cross connections:

- **Never submerge a hose in soapy water buckets, pet watering containers, pools, tubs, sinks, drains, or chemicals.**
- **Never attach a hose to a chemical sprayer without a backflow preventer.**
- **Buy and install an inexpensive hose connection vacuum breaker on every threaded water fixture.**
- **Buy appliances and equipment with a backflow preventer.**

If you are an owner of industrial, institutional, or commercial property, you must have your facility's internal plumbing surveyed for cross connection hazards, install proper backflow devices, or eliminate cross connections entirely. For more information, contact the Commission's Cross Connection Control Program at 413-310-3501.

Backflow Prevention



Public Notification - Haloacetic Acid (HAA5)

Maximum Contaminant Level (MCL) Exceedance

In 2020 the Commission had three quarterly exceedances of the MCL for haloacetic acids (HAA5), which were reported to MassDEP. The MCL, or regulatory limit, for HAA5 is 60 parts per billion (ppb) for the locational running annual average (LRAA) at a sample station. The LRAA is determined by averaging the prior four quarterly samples at one location. In accordance with regulations, the Commission issued a Public Notification in bills, the news media, and the internet for each exceedance.

This was not an emergency, and there was no immediate or short-term health risk. Customers were and are still advised that they can drink and use their water as usual. HAA5 is regulated due the potential health risks if consumed at elevated levels over decades or a lifetime. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. More information and full 2020 HAA5 test results are available at:

<http://waterandsewer.org/haa5-frequently-asked-questions/>

Customers with further questions about this notice may call **413-452-1300**.

How does HAA5 Form?

HAA5 forms when chlorine, required for disinfection, interacts with naturally dissolved organic matter (NOM). NOM enters Cobble Mountain Reservoir, the main source of the Commission's drinking water supply, through rain and snow runoff from the surrounding forest. The amount and types of dissolved NOM in Cobble Mountain Reservoir require an increased amount of chlorine to maintain safe disinfection.

What is the Commission Doing to Reduce HAA5?

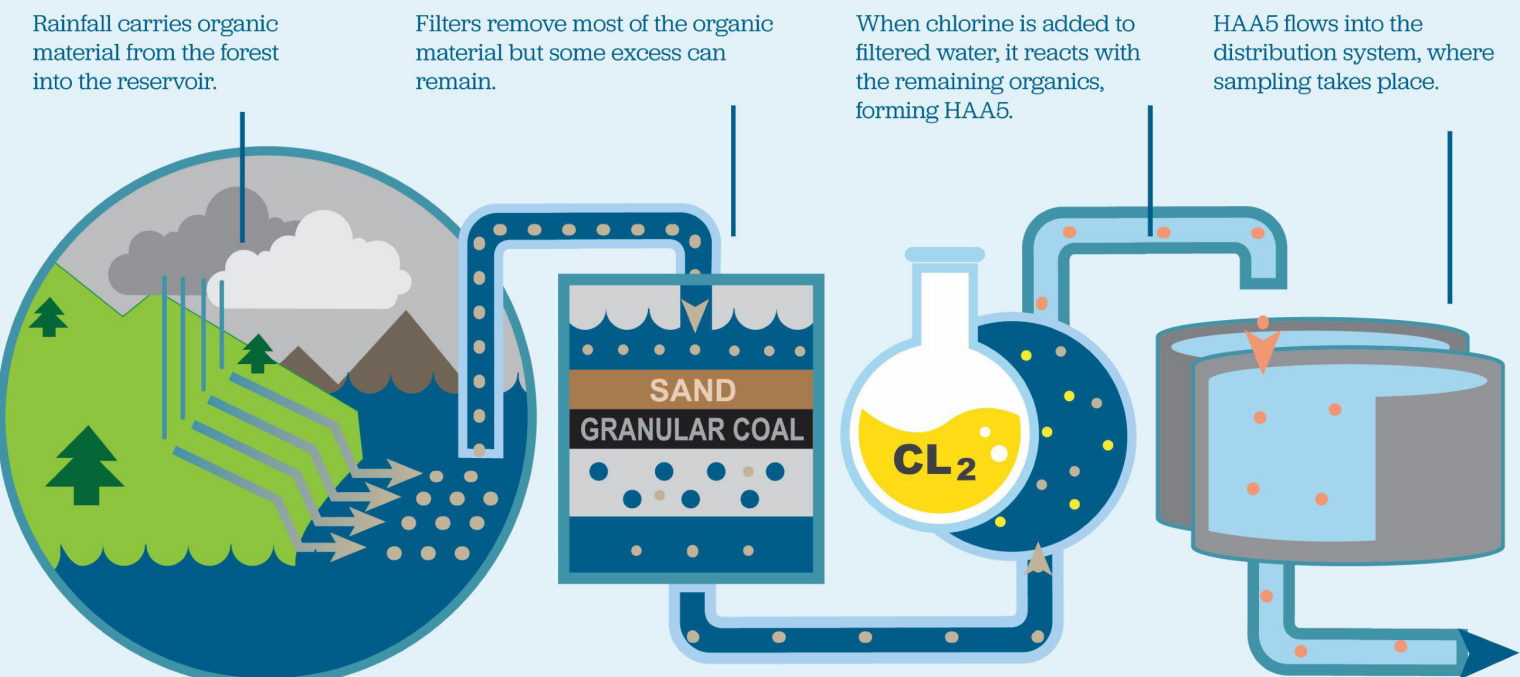
Quarterly sampling conducted in 2020 indicated that dissolved NOM levels generally decreased from previously elevated levels. The improvement in water quality results is due to changes in the reservoir raw water quality as well as measures implemented by the Commission to reduce HAA5 levels. These measures include reducing water storage time; optimizing treatment processes and chlorine dosages; and flushing the distribution system.

In addition to short-term measures, the Commission has been actively working to permanently prevent elevated HAA5 since 2015, when it initiated a comprehensive planning process to upgrade the West Parish Filters Water Treatment Plant. While the Commission has regularly optimized existing plant processes to meet regulatory changes over the years, the plant's last comprehensive upgrade was in 1974. Regulations related to HAA5 were first adopted in 1998, and revised in 2012.

A pilot study launched in 2019 and concluded in fall 2020 to determine the most effective treatment process to remove more dissolved NOM and reduce HAA5. Results from the pilot study are being used to inform the design of the permanent treatment plant upgrades necessary to reduce disinfection by-products, including HAA5.

A panel of national experts convened by the Commission is guiding these activities. The design of the permanent treatment plant upgrades is scheduled to begin in FY22. After the design is approved by MassDEP, construction is expected to begin in FY24.

HALOACETIC ACID (HAA5) - How Does it Form?



IMPORTANT WATER INFORMATION INFORMACIÓN IMPORTANTE SOBRE EL AGUA

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Ce rapport contient des renseignements très importants sur votre eau potable. Veuillez le traduire ou parler à quelqu'un qui le comprend.

Este relatório contém informações muito importantes sobre a sua água potável. Por favor, traduzir ou falar com alguém que entende.

Questo rapporto contiene informazioni molto importanti sulla vostra acqua potabile. Si prega di tradurlo o parlare con qualcuno che lo capisce.

Raport ten zawiera bardzo ważne informacje na temat swojej wody pitnej. Proszę przetłumaczyć lub porozmawiać z kimś, kto go rozumie.

Báo cáo này có chứa thông tin rất quan trọng về nước uống của bạn. Xin vui lòng dịch nó hoặc nói chuyện với một ai đó hiểu nó.



Follow us on Facebook and Twitter! @SpfldWaterSewer



Using Water Wisely

While the 22.5 billion gallon capacity of Cobble Mountain Reservoir is a plentiful supply for our region's water needs, efficient water use is always a good idea. In the summer months, water usage can increase up to 30% due to lawn watering or other outdoor uses. For tips and information on using water wisely outdoors, visit

<https://waterandsewer.org/residential/household-water-tips/outdoor-water-tips/>.

Did you know?

The Commission's Residential Leak Detection Program helps customers identify potential leaks and faulty fixtures in their homes. Want to get a handle on where you can save water in your house? Contact the Commission's Operations Center at 413-310-3501 to schedule an audit - first visit is free!



Lead and Drinking Water

Lead is not present in the source water in Cobble Mountain Reservoir or treated water entering the distribution system. The most common sources of lead poisoning are paint and dust containing lead. In cases where lead is detected in drinking water, it is usually due to leaching from pipes that contain lead, such as lead service lines, or plumbing, fixtures, or solder in the home/building. Leaching is most likely to occur when the water is not moving, generally overnight or at other times when water is not used for several hours.

In 1992 the Commission began to proactively remove lead service lines from the distribution system. As of November 2005, all known lead service lines have been removed and replaced. At the treatment plant, water is treated with orthophosphate to inhibit the corrosion of home/building plumbing and to help prevent lead from leaching into water. Testing for the presence of lead and copper is regulated under EPA's Lead and Copper Rule. Testing takes place in three-year cycles.

Health Risks of Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Commission is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the **Safe Drinking Water Hotline (1-800-426-4791)** or at <http://www.epa.gov/safewater/lead>.

LEAD AND COPPER SAMPLING TABLE - 2018

SUBSTANCE	MCLG	Action Level (AL)	90th PERCENTILE SAMPLE	SAMPLING SITES EXCEEDING THE ACTION LEVEL	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Copper (ppm)	1.3	AL = 1.3	0.0814	0 out of 50	No	Corrosion of household plumbing systems
Lead (ppb)	0	AL = 15.0	4.7	2 out of 50	No	

The above table represents the last round of lead and copper sampling that took place in the summer of 2018. The next required round of lead and copper sampling will take place in the summer of 2021 per regulatory requirements.

AL (Action Level) - The concentration of a contaminant that if exceeded, triggers treatment or other requirements that a water system must follow.

90th Percentile - Out of every 10 homes sampled, 9 were at or below this level.

MCL (Maximum Contaminant Level) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.