



Investing In Your Water



MASSACHUSETTS WATER RESOURCES AUTHORITY
2017 ANNUAL DRINKING WATER TEST RESULTS



This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it.

Si usted desea obtener una copia de este reporte en español, llámenos al teléfono 617-788-1190.

La relazione contiene importanti informazioni sulla qualità dell'acqua della Comunità. Tra-durlo o parlarne con un amico che lo comprenda.

O relatório contém informações importantes sobre a qualidade da água da comunidade. Traduza-o ou peça a alguém que o ajude a entendê-lo melhor.

Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowości. Poproś kogoś o przełożenie go lub porozmawiaj z osobą, która je dobrze rozumie.

هذا التقرير يحتوي على معلومات هامة عن نوعية مياه الشرب في منطقتك. يرجى ترجمته أو التحدث مع شخص يفهمه لكي يفهم هذه المعلومات جيداً.

Η κατάσταση αναφοράς παρακολούθησης επιπέδων παρασιτότητας για το ζώσιμο νερό στις Προσκύματα για το μετασχηματιστή ή για το εξοπλισμένο με συσκευές που τα καθαρίζουν σταθμούς.

Im Bericht steht wichtige Information über die Qualität des Wassers Ihrer Gemeinschaft. Der Bericht soll übersetzt werden, oder sprechen Sie mit einem Freund, der ihn gut versteht.

這份報告中有非常重要的信息。請把它翻譯成您所在社區的語言。請您找人翻譯一下，或者請能看懂這份報告的朋友為您解釋一下。

この資料には、あなたの飲料水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか説明を受けてください。

განცხადებით, ეს არის ის, რაც თქვენს სასმელ წყალზე შედეგად გავლენას ახდენს. თუ გინდათ უფრო მეტი ინფორმაცია, გთხოვთ, დაუკავშირდეთ გვას.

આ અહેવાલમાં, આપણે આપણી સમુદાયને પીવાના પાણીની ગુણવત્તા વિશેની મહત્વની માહિતી આપી છે.

이 보고서는 여러분이 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구를 상의하십시오.

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.



Massachusetts Water Resources Authority and the Chicopee Water Dept., South Hadley F.D. #1, and Wilbraham Water Division

Where To Go For Further Information

Massachusetts Water Resources Authority (MWRA)	www.mwra.com	617-242-5323
Massachusetts Dept. Of Environmental Protection	www.mass.gov/dep	617-292-5500
Massachusetts Dept. Of Public Health (DPH)	www.mass.gov/dph	617-624-6000
Department of Conservation and Recreation	www.mass.gov/dcr/watersupply	617-626-1250
US Centers for Disease Control & Prevention (CDC)	www.cdc.gov	800-232-4636
List of State Certified Water Quality Testing Labs	www.mwra.com/testinglabs.html	617-242-5323
Source Water Assessment and Protection Reports	www.mwra.com/sourcewater.html	617-242-5323
Information on Water Conservation	www.mwra.com/conservation.html	617-242-SAVE

Public Meetings

MWRA Board of Directors	www.mwra.com/boardofdirectors.html	617-788-1117
MWRA Advisory Board	www.mwraadvisoryboard.com	617-788-2050
Water Supply Citizens Advisory Committee	www.mwra.com/wscac.html	413-213-0454

For A Larger Print Version, Call 617-242-5323.

This report is required under the Federal Safe Drinking Water Act. MWRA PWS ID# 6000000





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Dear Customer,

The Massachusetts Water Resources Authority is pleased to share with you the results of our annual water quality testing. MWRA and your local water department take hundreds of thousands of water quality tests to ensure your water is safe. The results for 2017 are excellent and we again met every federal and state drinking water standard.

Since the MWRA was created in 1984, we have invested over \$2 billion to rehabilitate and modernize the entire drinking water system. From state-of-the-art treatment, to covered storage tanks, to installing new redundant pipelines and replacing older pipes in the communities, we want to make sure the water that flows to your tap is of the highest quality. Investing in infrastructure improvements also plays a large part in the economic health of our region.

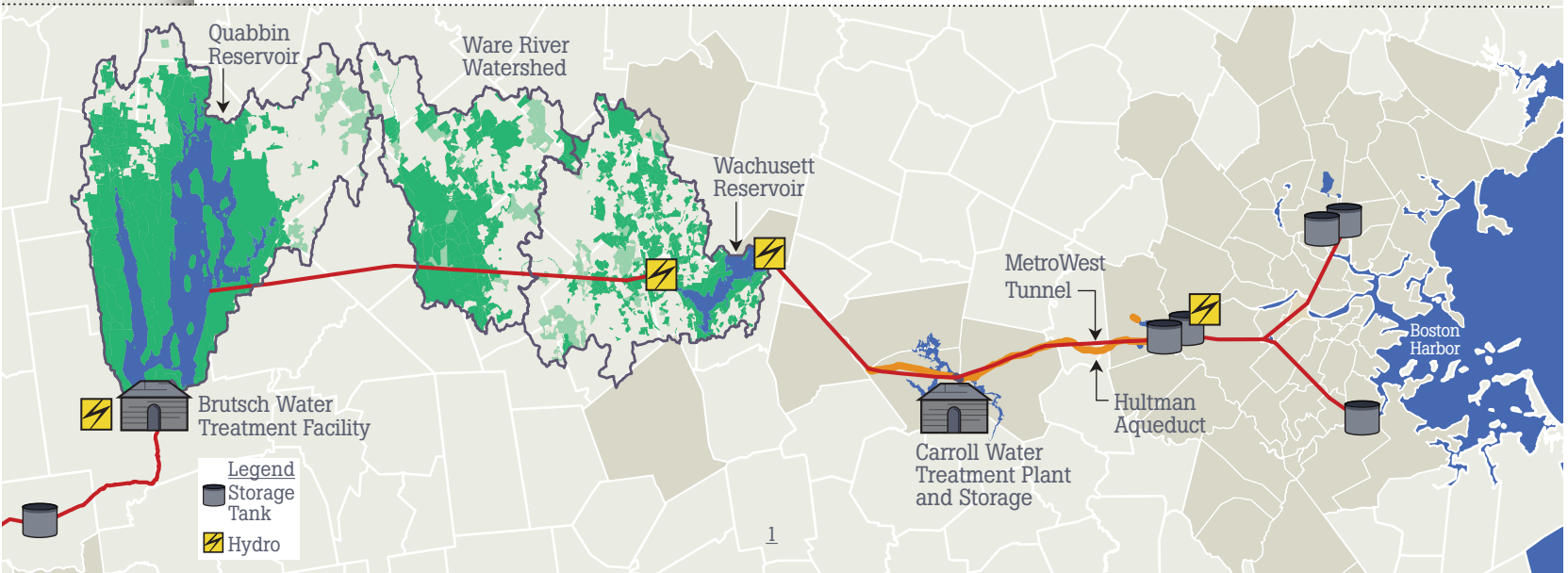
Once again, all three Chicopee Valley Aqueduct (CVA) communities were below the EPA Lead Action Level, as all three CVA communities continue to successfully treat the water they deliver to make it less corrosive. We continue to partner with the Massachusetts Departments of Environmental Protection and Public Health to make every effort to reduce the risk of lead at the tap to protect the health of the children in our member communities. More information on lead can be found on pages 4 and 5 of this report.

This report contains important information about your water system and we hope you take a few moments to read through it. MWRA has great confidence in the water we deliver to your home and we want you to share that confidence. Please contact us if you have any questions or comments about your water quality or any of MWRA's programs.

Sincerely,

Frederick A. Laskey
Executive Director

For more information on MWRA and its Board of Directors, visit www.mwra.com.



Monitoring Water Quality In Real Time. Your water is monitored by a state-of-the-art system in real time – 24 hours a day, seven days a week – to make sure it is free of contaminants. This allows MWRA to respond to changes in water quality almost immediately.

Where Does Your Water Come From?

MWRA supplies about 10 million gallons of high quality water each day to three Chicopee Valley communities: Chicopee, Wilbraham, and South Hadley Fire District #1 (FD#1). MWRA also serves 48 cities and towns in greater Boston and MetroWest. Your water comes from Quabbin Reservoir. Water from the Ware River can add to the supply at times.

Rain and snow falling on the watersheds - protected land around the reservoirs - flow into streams and then into the reservoirs. Water comes in contact with soil, rock, plants, and other material as it follows nature's path to the reservoir. While this process helps clean the water, it can also dissolve and carry very small amounts of material into the reservoir. Minerals from soil and rock do not usually cause problems in the water. But water can also transport contaminants from human and animal activity. These can include bacteria and viruses - some of which can cause illness. The test results in this report show that these are not a problem in Quabbin Reservoir's watershed.

The Quabbin watershed is protected naturally as over 90% of the watershed is covered in forest and wetlands. About 83% of the total watershed land cannot be developed. The natural undeveloped watershed helps to keep MWRA water clean and clear. Also, to ensure safety, the streams and the reservoir are tested often and patrolled daily by the Department of Conservation and Recreation (DCR).

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program Report for the Quabbin Reservoir. The DEP report commends DCR and MWRA on the existing source protection plans, and states that our "watershed protection programs are very successful and greatly reduce the actual risk of contamination." MWRA follows the report recommendations to maintain the pristine watershed areas.

Water Treatment – From the Reservoir to Community Pipelines

Your water is treated at the William A. Brutsch Facility before it enters the Chicopee Valley Aqueduct. The first treatment step is disinfection. MWRA's licensed treatment operators carefully add measured doses of chlorine, and then further treat the water with ultraviolet light (UV). Both disinfection processes are designed to kill pathogens (germs) that may be present in the water. Licensed operators in Chicopee perform additional booster disinfection at the point where the local pipes take water from the Aqueduct.



Each community also treats the water to reduce leaching of lead from home plumbing.

Investing in your System

MWRA has been working on projects to ensure clean water for years to come. MWRA completed the installation of UV disinfection in 2014 to meet new EPA standards. With UV light, CVA water now has state-of-the-art disinfection, MWRA completed a hydropower generator and pipeline to the fish hatchery in 2017 also at the Brutsch Facility. This project was completed in conjunction with the MA Division of Fisheries and Wildlife and the

MA Department of Fish and Game, and provides clean, green energy while improving the environment.

MWRA and the three CVA communities also continue to rehabilitate and replace older pipelines throughout the distribution system to improve both reliability and water quality.

Testing Your Water – Every Step of the Way

Test results show few contaminants are found in the reservoir water. The few that are found are in very small amounts, well below EPA's standards. Turbidity (or cloudiness of water) is one measure of overall water quality. There are two standards for turbidity: all water must be below 5 NTU (Nephelometric Turbidity Units), and only can be above 1 NTU if it does not interfere with effective disinfection. Typical levels at the Quabbin Reservoir are 0.3 NTU and were below the 1 NTU over 99% of the time. The highest level was 2.4 NTU, which was caused by a weather event. There was also a turbidity spike to 7.5 NTU, which was due to intake screen maintenance, but it was determined to not be representative of source water quality by DEP. None of these increases in turbidity interfered with effective disinfection.

MWRA also tests reservoir water for pathogens - such as fecal coliform, bacteria, and the parasites *Cryptosporidium* and *Giardia*. They can enter the water from animal or human waste. In 2017, no *Cryptosporidium* and *Giardia* was detected.

Test Results – After Treatment

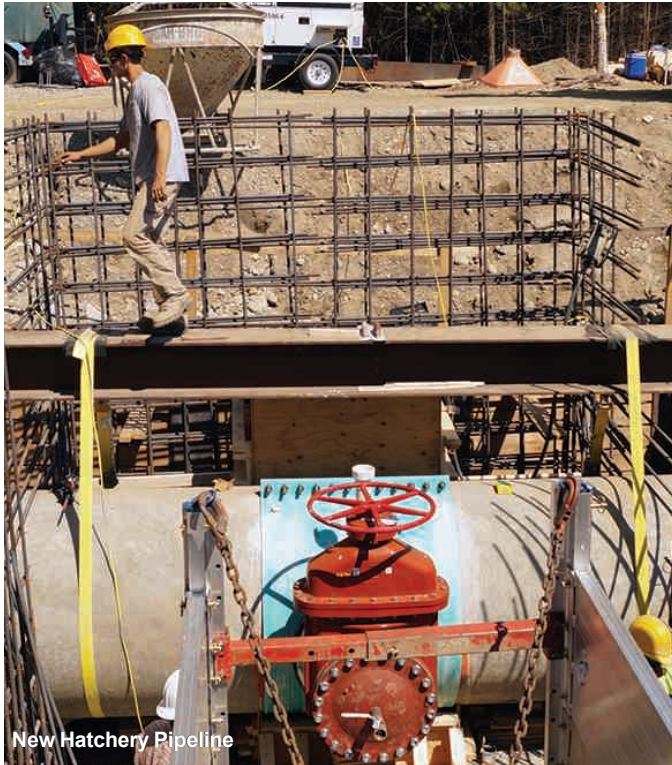
EPA and state regulations require many water quality tests after treatment to check the water you are drinking. MWRA conducts tens of thousands of tests per year on over 120 contaminants (a complete list is available at www.mwra.com). Details about 2017 test results are in the table below and on page 5.

TEST RESULTS AFTER TREATMENT

COMPOUND	UNITS	(MCL) HIGHEST LEVEL ALLOWED	(WE FOUND) DETECTED LEVEL-AVERAGE	RANGE OF DETECTIONS	(MCLG) IDEAL GOAL	VIOLATION	HOW IT GETS IN THE WATER
Barium	ppm	2	0.006	0.006	2	No	Common mineral in nature
Nitrate [^]	ppm	10	0.007	0-0.007	10	No	Atmospheric deposition

KEY: MCL=Maximum Contaminant Level. The highest level of a contaminant allowed in water. MCLs are set as close to the MCLGs as feasible using the best available technology. MCLG=Maximum Contaminant Level Goal. The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. ppm=parts per million ppb=parts per billion ns=no standard ^=As required by DEP, the maximum result is reported for nitrate, not the average.

Drink Local And Be Green! Tap water is delivered straight to your home without trucking or plastic waste. Bottled water produces over 10,000 times the amount of greenhouse gases as tap water. More than half of our energy needs for water treatment and delivery are met with green power including hydroelectric generators and solar panels.



New Hatchery Pipeline

Tests In Community Pipes

MWRA and local water departments work together to test water all the way to the tap. We test samples of water in the city and town systems each week for total coliform and *E. coli* bacteria. Total coliform bacteria can come from the intestines of warm-blooded animals, or can be found in soil, plants, or other places. Most of the time, these bacteria are not harmful. However, their presence could signal that harmful bacteria from fecal waste may be there as well. The EPA requires that no more than 5% of the samples in a given month may be positive for total coliform. *E. coli* is a pathogen found in human and animal fecal waste that can cause illness. No *E. coli* was found in any CVA community in 2017. Single total coliform positive samples were found in the South Hadley F.D. #1 in January and August (4.3%). Neither sample was above the EPA standard.

Drinking Water and People with Weakened Immune Systems

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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

Contaminants in Bottled Water and Tap Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. 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) or MWRA. In order to ensure that tap water is safe to drink, the Massachusetts DEP and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How Would I Know About A Problem With My Water Supply?

MWRA and your local water department keep close watch on the water supply. If there is a problem with your water, you would get the news by radio, television, newspapers, state and local government, health officials, and from MWRA.

Information About Cross Connections

Massachusetts DEP recommends the installation of backflow prevention devices for inside and outside hose connections. For more information on cross connections and how to help protect the water in your home as well as the drinking water system in your town, please visit www.mwra.com/crosscon.html or call 617-242-5323.

Research for New Regulations

MWRA has been working with EPA and other researchers to define new national drinking water standards by testing for unregulated contaminants. To read more about these regulations, and to see a listing of what was found in MWRA water, please visit www.mwra.com/CVA/UCMR/2017.html.

WATER SAVING TIPS FOR YOUR HOME

Indoors

- Install low-flow aerators on your faucets. You'll save 1 to 5 gallons per minute.
- Fix that leaky faucet. Worn-out washers can waste hundreds of gallons per week.
- Replace your washing machine with a high-efficiency model. You'll use 30 to 50% less water.
- Fix that leaky toilet. You'll save 50 gallons a day or more.



Outdoors

- Water your lawn overnight or before 5:00 a.m. If you water at mid-day, it will evaporate.
- One inch of water a week is plenty. After heavy rains, you may not need to water for 10 to 14 days.
- Use mulch in your flower beds. Mulch will keep roots cool and moist, and reduce weeds.



More tips are available at MWRA.com.

YOUR COMMUNITY INFORMATION

EACH COMMUNITY HAS SPECIFIC TREATMENT AND IMPROVEMENTS THAT ARE DESCRIBED BELOW.

Chicopee

Phone: 413-594-3420
PWS ID# 1061000

The Chicopee Water Department's Corrosion Control Facility continues to provide excellent water quality by adjusting the water's pH and alkalinity levels. Sodium Carbonate and Sodium Bicarbonate (baking soda) are used to make this adjustment. A phosphate blend also adds an extra level of protection by further reducing corrosion throughout the system. The benefits of these treatment processes are evident in the reduced level of dissolved metals such as lead, copper, and iron in the City's water supply.



Under the Safe Drinking Water Act, water samples must be collected specifically for the analysis of lead and copper. Household plumbing is the main contributor of these metals in our drinking water and the water's chemistry is adjusted to minimize corrosion well before it reaches the homes of Chicopee's residents.

The Chicopee Water Department was not required to collect any lead and copper samples by the Environmental Protection Agency (EPA) in 2017. This is due to the Chicopee Water Department's successful maintenance of low to absent levels of lead and copper in samples collected during 2015. The next round of lead and copper samples will be collected in the spring of 2018.

Wilbraham

Phone: 413-596-2807
PWS ID# 1339000

The Corrosion Control Facility on Miller Street in Ludlow continues to inject Sodium Silicate into the Town's drinking water in compliance with the federally mandated Lead and Copper Rule. MA DEP is requiring twenty Lead and Copper samples to be taken in the summer of 2018. Our last Lead and Copper sampling was successful with a 90th percentile of lead of 4.1 ppb that was well below the Action Level of 15 ppb.

Within the past year the Wilbraham Water Department performed the following in 2017: maintenance of the Town's 4 water booster stations; the Town's 2.1 million gallon storage tank was inspected and painted; daily maintenance was performed on the two Sodium Silicate pumps at the Corrosion Control Facility as well as grounds maintenance to the building; our crew repaired one significant water main break as well as 3 water service leaks; installed 12 new water services; flushed 115 fire hydrants and checked for proper drainage. Over 100 main line gate valves were cleaned and checked for proper operation and were exercised by crews. Leak detection was performed on 40 miles of water mains in Town; 3 leaks were found and repaired. Over 300 feet of 16" water main was replaced on Main Street over the summer of 2017 as well. The Wilbraham Water Department has many updates planned for fiscal year 2018, such as water main replacements, booster station pump upgrades, also building upgrades.

The water usage in 2017 was 389,090,000 gallons. This represents a 15% decrease from 2016.



South Hadley Fire District #1

Phone: 413-532-0666
PWS ID# 1275000

At our treatment facility located in Ludlow, Sodium Silicate is added to the water for corrosion control in order to comply with the federally mandated Lead and Copper Rule since 1998. All 30 homes in addition to 2 schools were below the Action Level for both lead and copper, with a 90th percentile for lead of 4.6 ppb, and 0.03 ppm for copper. Our next sampling round will be 2019.

We continue to improve our system by updating water mains. Water main replacements are prioritized by leak history, pipe type and the annual street paving list provided by the DPW. This collaboration results in reduced costs and extended pavement integrity. Within the past year, our crew has repaired 8 water main breaks and 4 service leaks throughout the distribution system. In addition to the repair work, 4 new services have been connected to the distribution system. This collaboration results in reduced costs and extending pavement integrity. This program will continue as funding and time permit.

This past year, we replaced a total of 2550 feet of mains on Dover Rd., Brittany Rd., Harwich Place, Camden St, and Berwyn St. including fire hydrants and water services on all streets. The new mains will ensure reliability of supply. The Board would like to sincerely thank the efforts of our staff for installing the new water mains with in-house equipment resulting in significant cost savings.

In addition, we had our 2-year anniversary inspection of the coating system at our Alvord St. water tank. The coating is holding up well and should last 25-30 years according to our consultant. We feel strongly that the Water Department – Fire District No.1 has been operated very efficiently by providing the residents with what they expect from a municipal department at the lowest possible cost. We would also like to extend our thanks to the Fire Department, Police Department, Fire District No. 2 and the Town Departments for their cooperation. Please take a moment to view our website with historical and frequently updated information about our Department at the following address www.shdistrict1.org.

MWRA Takes Customer Concerns Seriously. Every call is investigated to ensure that there are no problems with the water supply. Most complaints are related to discolored water, which is usually related to local construction or hydrant use. If you have a question or concern, please call your local water department or MWRA at 617-242-5323.



What You Need to Know about Lead in Tap Water

MWRA water is lead-free when it leaves the reservoirs. MWRA and local pipes that carry the water to your community are made mostly of iron and steel and do not add lead to the water.

However, lead can get into tap water through pipes in your home, lead solder used in plumbing, and some brass fixtures. Corrosion or wearing away of lead-based materials can add lead to tap water, especially if water sits for a long time in the pipes before it is used. Lead levels found in tap water in sampled homes have dropped significantly since the CVA communities improved treatment to make water less corrosive. This means the water is less likely to absorb lead from pipes and other fixtures.

CVA Communities Meet Lead Standard in 2017

Under Environmental Protection Agency regulations, your local water department must test tap water in a sample of homes that are likely to have high lead levels. These are usually older

homes with lead service lines or lead solder. The EPA rule requires that 9 out of 10, or 90%, of these sampled homes must have lead levels below the Action Level of 15 parts per billion (ppb). All three CVA communities were below the lead Action Level in 2017.

Important Information from EPA about Lead

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. MWRA is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If 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 at 1-800-426-4791 or www.epa.gov/safewater/lead.

MOST RECENT RESULTS	Total Trihalomethanes in ppb MCL=80 ppb (Avg) MCLG=0		Haloacetic Acids in ppb MCL=60 ppb (Avg) MCLG=0		Chlorine in ppm MRDL=4 ppm (Avg) MRDLG=4 ppm		Lead in ppb AL=15 ppb MCLG=0		Copper in ppm AL=1.3 ppm MCLG=1.3 ppm		Sodium in ppm
	Annual Average	Range	Annual Average	Range	Annual Average	Range	# Samples over AL	90% Value	# Samples over AL	90% Value	
Chicopee	46.3	18.3-59.7	33.9	20.2-54.6	0.88	0.14-1.36	1 of 30	1.9 [^]	0 of 30	0.15 [^]	17.6
South Hadley FD #1	53.4	30.9-80.3	22.1	12.2-34.7	0.65	0.02-1.19	0 of 30	4.6 [*]	0 of 30	0.03 [*]	7.22
Wilbraham	55.8	28.4-63.6	22.7	13.2-28.8	0.4	0.1-0.9	0 of 20	4.1 [^]	0 of 20	0.14 [^]	15.4

KEY: The definitions for MCL and MCLG are on page 2. AL=Action Level-The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. [^]=Results from 2015. Next sampling round in 2018. ^{*}=Results from 2016. Next sampling round in 2019. 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 or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

WHAT CAN I DO TO REDUCE MY EXPOSURE TO LEAD IN DRINKING WATER?



- Let the water run before using: fresh water is better than stale! To save water, fill a pitcher with fresh water and place in the refrigerator for future use.
- Any time water has gone unused for more than 6 hours, run each faucet used for drinking or cooking until after the water becomes cold.
- Never use hot water from the faucet for drinking or cooking, especially when making baby formula or other food for infants.
- Check your plumbing fixtures to see if they are lead-free. Read the labels closely.
- Remove loose lead solder and debris. Every few months remove the aerator from each faucet in your home and flush the pipes for 3-5 minutes.
- Be careful of places you may find lead in or near your home. Paint, soil, dust and some pottery may contain lead.
- Call the Department of Public Health at 800-532-9571 or EPA at 800-424-LEAD for health information.