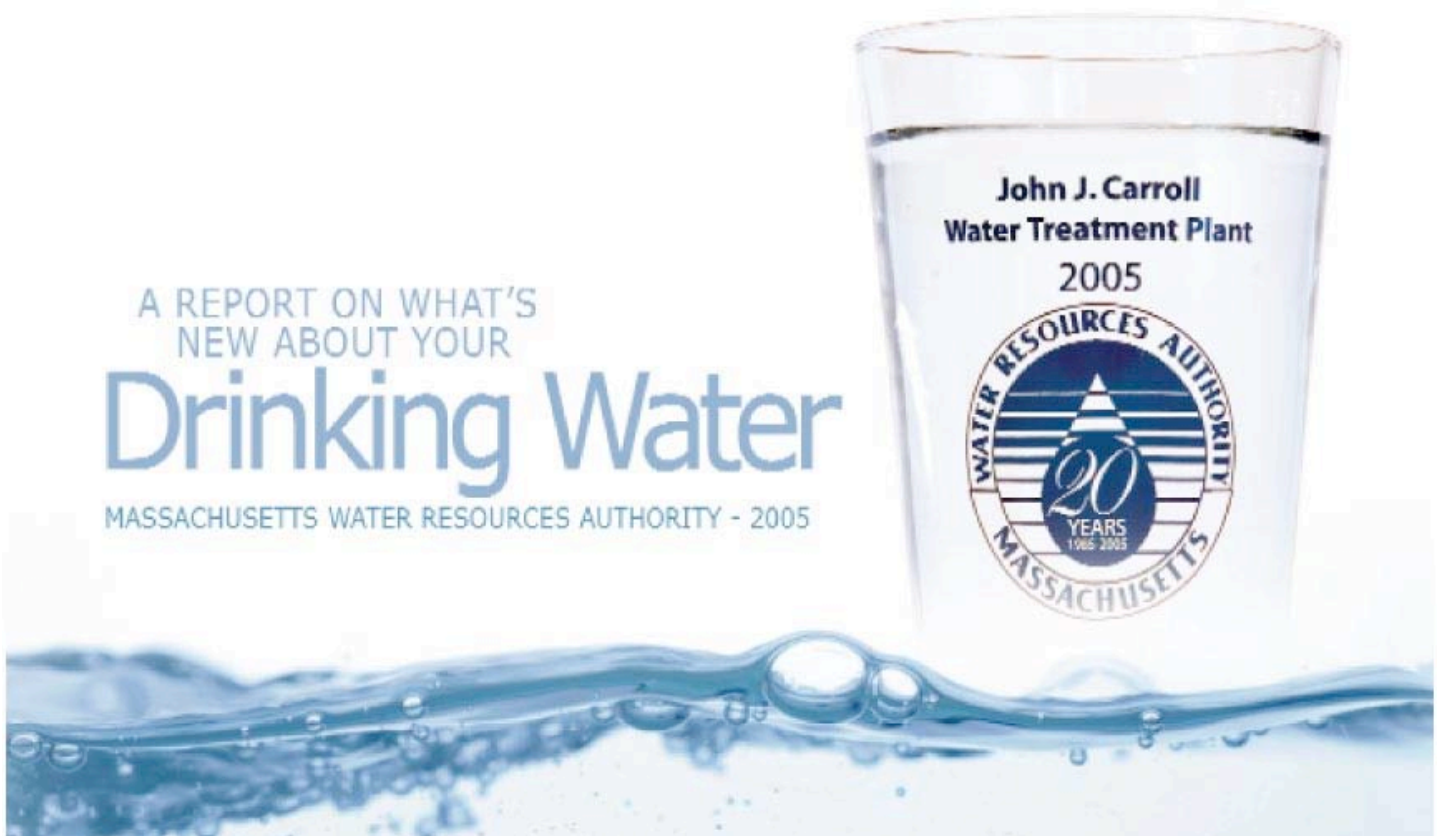


Massachusetts Water Resources Authority

Annual Report on Drinking Water Quality - 2005

CVA Communities - web edition



This is a "right-to-know" report required by U.S. environmental protection laws. It contains important information on the quality of your drinking water!

<p>What does your water supply consist of? Is it surface water or groundwater? How is it treated? How is it distributed to your home?</p>	<p>What are the major water quality issues in your community? How are they being addressed? How can you help?</p>	<p>What are the major water quality issues in your community? How are they being addressed? How can you help?</p>	<p>What are the major water quality issues in your community? How are they being addressed? How can you help?</p>	<p>What are the major water quality issues in your community? How are they being addressed? How can you help?</p>	<p>What are the major water quality issues in your community? How are they being addressed? How can you help?</p>	<p>What are the major water quality issues in your community? How are they being addressed? How can you help?</p>	<p>What are the major water quality issues in your community? How are they being addressed? How can you help?</p>
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FOR A LARGE PRINT VERSION OF THIS REPORT CALL 617-242-5323.



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Dear Customer:

The Massachusetts Water Resources Authority is pleased to send you the annual report on your drinking water quality. The report describes the journey the water takes from the reservoir to your tap and contains other important information regarding the water we deliver to your home. Under strict federal and state guidelines, the MWRA and your local water department take many water quality samples each week. The results for 2005 are excellent. Of the 120 contaminants we test for each year, MWRA met every standard. Simply put, MWRA's water is top quality.

MWRA and your local water department have continually improved the Chicopee Valley system. In 2005 construction began on a parallel pipeline project to provide redundancy and reliable delivery. Future projects include treatment improvements to meet recent changes to regulations. These advances will ensure dependable, top quality water for future generations.

I hope you will take a few moments to read this report. The Board of Directors and the men and women of the MWRA take pride in being the stewards of one of the greatest water systems in the country. We want you to have confidence we have in the water we deliver to over 2 million customers. Please contact us if you have any questions or comments about your water quality, or any of MWRA's programs.

Sincerely,

Frederick A. Laskey
MWRA Executive Director

YOUR THOUGHTS

Help us improve this report by sending your comments. Give us a call, send a letter or e-mail, and let us know what you think.

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where does your water come from?

MWRA supplies wholesale water to three Chicopee Valley communities: Chicopee, Wilbraham, and South Hadley Fire District #1 (FD#1). MWRA also serves 47 cities and towns of greater Boston and MetroWest. Your water comes from Quabbin Reservoir. Water from the Ware River can add to the supply at times. The reservoir provides about 10 million gallons of high quality water each day to Chicopee, Wilbraham, and South Hadley Fire District #1.

Rain and snow falling on the watersheds - protected land around the reservoirs - turn into streams that flow to 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, viruses, pesticides and fertilizers - some of which can cause illness. The test results in this report show that these are not a problem in Quabbin Reservoir's watershed.

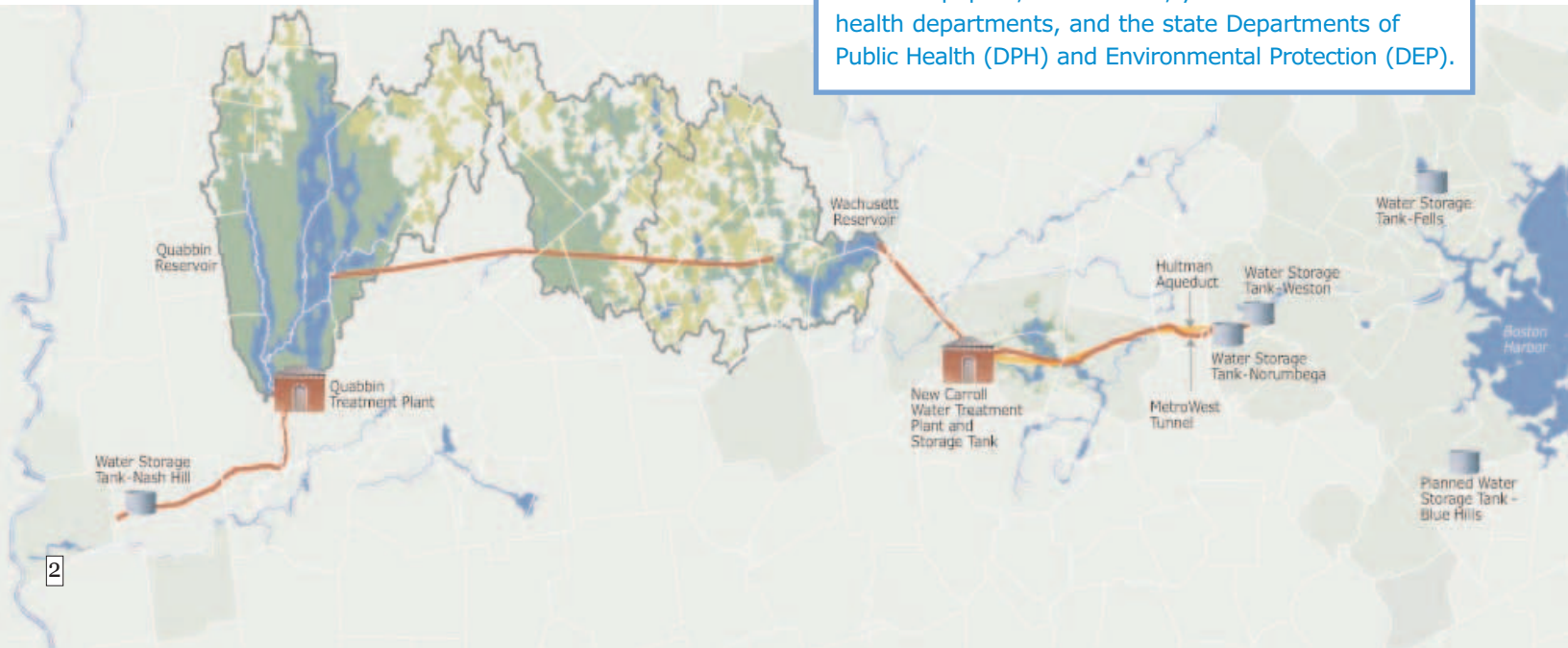
Quabbin watershed is protected naturally as over 90% of the watershed is covered in forest and wetlands. About 83% of the total watershed land cannot be developed. The natural undeveloped watershed helps to keep MWRA water clean and clear. Also, to ensure safety, the streams and the reservoir are tested 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 and Wachusett Reservoirs. The report notes that wildlife (birds and aquatic animals), agriculture, transportation corridors, transmission lines, and residential land use are the key issues in the watershed. 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." The report recommends that DCR and MWRA maintain present watershed plans and continue to work with the residents, farmers, and other interested parties to maintain the pristine watershed areas.



HOW WOULD I KNOW ABOUT A PROBLEM WITH THE WATER SUPPLY?

MWRA and your local water department keep a close watch on the water supply. If there is a problem with your water, you would get the news by radio, television and newspapers, from MWRA, your local water and health departments, and the state Departments of Public Health (DPH) and Environmental Protection (DEP).





improvements to the water system

Water must travel through the 15-mile Chicopee Valley Aqueduct and through some of the hundreds of miles of local distribution pipes under your streets before it reaches your tap. To continue providing high quality water, each part of the water system needs routine maintenance and, when necessary, improvements or new facilities.

MWRA-The covered Nash Hill Storage Tanks were completed in June 1999 to replace the Nash Hill open reservoir. This tank helps to lessen the risk that contamination will get into your tap water. The treatment facilities were completed in the summer of 2001. The new facilities provide more efficient disinfection for your water.

In 2005, on-line water quality monitoring was added at Nash Hill to ensure better monitoring of the water supply. Also, construction began on the two-year Pipeline Redundancy Project in both South Hadley and Chicopee and will continue through 2006.

Chicopee-In 2005, the Chicopee Water Department continued on improvements to its distribution system with 8,000 feet of new ductile iron water mains installed during the year. Approximately 900 feet of 4-inch cast iron pipe and 400 feet of 6-inch cast iron pipe were replaced with 8-inch ductile iron on Cyman Drive to boost fire protection in the area. Nearly 1,200 feet of new ductile iron was installed along Ellerton Street, Old Lyman Road and Montville Street. In addition to water mains installed by the Chicopee Water Department, new developments, such as Chicopee Marketplace, Caddyshack Drive, Fairview Village, and Pleasant Haven Condos added approximately 5,500 feet of pipe to the system. The Chicopee Water Department also conducted a leak survey of its 255 miles of water mains. The survey yielded 13 leaks, all of which were repaired. Chicopee will also begin the process of replacing its SCADA (Supervisory Control and Data Acquisition) computer system. The new system will allow better control of the treatment process and communication with remote equipment.

Wilbraham-During 2005, the list of duties performed by the Water Division personnel included but was not limited to: 4 water breaks repaired, 30 new water service installations, the replacement of two fire hydrants damaged by motor

cycle accidents, 221 work orders of various tasks, 12 frozen water pipes thawed, 93 testable backflow prevention devices tested, over 250 water quality samples, and 3,824 meters were read in March and September. Total water usage in 2005 was 420,303,000 gallons.

The Brookmount Drive, Glenn Drive, and MacIntosh Drive water booster stations were maintained, and the Old Orchard Road water booster station had significant changes to allow for a more constant motor and pump operation. On Pidgeon Drive, the Water Division is installing a water main along with water service laterals. During 2005, 120 feet of 8 inch ductile iron water main was installed along with two water service laterals. There was a large water break on Saturday, October 29, 2005, near Stony Hill Road just south of the Mill River. On-call and supervisory personnel responded to shut-off mainline valves and isolate the area within 1.5 hours, though nearly 400,000 gallons of water was still lost. The Cottage Avenue Bridge was closed in July 2005 and will remain closed until the summer of 2006. Significant changes to the water mains on the bridge are likely, as these are the mains that supply our source water, and were highlighted for improvement in 2005's Vulnerability Assessment.

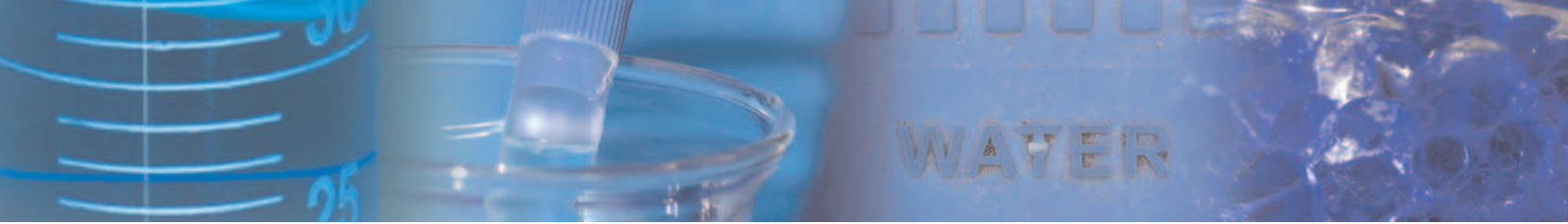
South Hadley Fire District No. 1-As part of our continued commitment to improving the distribution system, approximately 1900 ft. of water main has been replaced in the falls section of the District. In the past year, the District's personnel replaced 1200 ft. of 8" and 6" A.C. pipe with 8" ductile iron pipe on Summit St. In addition, 700 ft. of 8" and 4" cast iron pipe were replaced with 8" ductile iron pipe on Prospect St. The new mains will ensure reliability of supply, flow for fire protection and improved water quality. We are fortunate to have personnel and equipment in order to complete projects in-house resulting in considerable cost savings to the ratepayers.

The District has begun our 1.1 million dollar upgrade to our Ludlow Facility. The project consists of a new booster pump, building improvements, and a permanent Sodium Silicate corrosion control system. The projected completion date for this project is August 2006.

INFORMATION ABOUT CROSS CONNECTIONS

For information on cross connections and how to help protect the water in your town, please visit www.mwra.com or call 617-242-5323 for more information.





testing every step of the way

IS MY WATER CONSIDERED HARD OR SOFT?

Your water is considered soft, and is good for laundry and shampooing. Water is measured by "hardness", which is the amount of dissolved minerals in your water. MWRA water has a hardness of about 12 mg/l (or less than 1 grain/gallon by older measures). For comparison, hard water would have greater than 75-mg/l harness. If you have any questions on the character of your water, feel free to contact us.

Tests Before Treatment

We test the water as it leaves the reservoir to see how well protected our watershed is. 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. Typical levels at Quabbin reservoir are 0.3 NTU (Nephelometric Turbidity Units). Quabbin's turbidity level was always below EPA's standard of 5.0 NTU. It was below the stricter Massachusetts standard of 1.0 NTU 99.99% of the time, with the highest value at 1.43 NTU. This did not interfere with effective disinfection.

MWRA also tests reservoir water for pathogens - such as fecal coliform, bacteria, viruses, and the parasites *Cryptosporidium* and *Giardia*. They can enter the water from animal or human waste. All test results were well within state and federal testing and treatment standards.

Tests After Treatment

EPA and State regulations also require many water quality tests after treatment to check the water you are drinking. MWRA follows - and even goes beyond - these tests. We conduct tens of thousands of tests per year. This testing allows us to better monitor your water.



WHAT DOES THIS TABLE TELL ME? EPA requires that we test for over 120 contaminants. For a complete list, go to www.mwra.com. MWRA found only those noted in this report. WHAT IS THE BOTTOM LINE? The water quality is excellent. All of the levels are below EPA's allowable limits.

Reservoir Water Test Results - After Treatment								
Compound	Units	(MCL) Highest Level Allowed	(MCLG) Ideal Goal	(We found) Detected Level-Average	Violation	Range of Detections	How it gets in the water	
Barium	ppm	2	2	0.007	No	0.006-0.007	Common mineral in nature	
Fluoride	ppb	4	4	0.1	No	0.05-0.1	Natural deposits	
Nitrate	ppm	10	10	0.02	No	0.01-0.02	Breakdown of disinfectants	

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 Avg=Average



results for treated water-in community pipelines

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 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. If a water sample tests positive for total coliform, we run more specific tests for *E.coli*. *E.coli* is a pathogen found in human and animal fecal waste that can cause illness.

HOW DID WE DO IN 2005? No coliforms were found in any CVA community system in 2005.

Water Treatment - From Reservoir to Community Pipelines

Because of its excellent watershed conditions and protection, Quabbin Reservoir does not need a filtration step in its treatment. The state Department of Environmental Protection set special conditions in 1991 to maintain Quabbin's high quality water.

But, even high quality water must be properly treated. MWRA's licensed treatment operators treat water at the reservoir before it enters the Chicopee Valley Aqueduct. The first treatment step is the primary disinfection where we carefully add measured doses of chlorine to water to kill pathogens that may be present. Licensed operators from CVA communities perform additional booster disinfection at the point where the local pipes take water from the Aqueduct. This process, called residual disinfection, protects the water while in the local pipes. Each community also treats the water to reduce leaching of lead from home plumbing.

Chicopee Water Department:

The treatment plant adds sodium carbonate, sodium bicarbonate (baking soda), and a phosphate blend to adjust the water's chemistry. This treatment has proven to be very effective in reducing the corrosion of both the city's water mains and home plumbing. "Red" water problems (from iron water mains) and green staining of fixtures (from copper in home plumbing) have been eliminated. Lead concentrations have decreased significantly as well since the start of this treatment. Due to a recent EPA review, Chicopee will be required to increase its number of samples and sample sites used to monitor lead and copper levels in the water. Previously, Chicopee was on a reduced monitoring plan which required

sampling from 30 sites once every 3 years. This year, two rounds of samples from 60 sites will be required. This number of samples will be reduced next year if our treatment process continues to maintain low lead and copper results.

Wilbraham:

The Water Department's Corrosion Control Program (CCP) was implemented in 1997 continues to operate very well. The effectiveness of our CCP is determined by lead and copper sampling analysis. Prior to 2006, the Water Division was on reduced monitoring which required sampling 15 sites within the distribution system for lead and copper levels every three years. Following a recent review by EPA, the District is required to sample 60 sites twice prior to January 1, 2007.

The Water Division signed an administrative consent order with the Massachusetts DEP and received approval of design for the Corrosion Control Facility Upgrade at the MWRA's underground chamber in Ludlow. Work on this facility will begin after the MWRA pipeline redundancy project is completed.



South Hadley Fire District #1:

The District continues the successful use of sodium silicate for corrosion control in order to comply with the federally mandated Lead and Copper Rule. Prior to 2006, the District was on reduced monitoring which required sampling 15 sites within the distribution system for lead and copper levels every three years. Following a recent review by EPA, the District is required to sample 60 sites twice prior to January 1, 2007. Dependent upon the success of those samples, the District may be allowed to reduce the amount of sample sites and test yearly.




lead in your tap water: what you should know

All three CVA communities met the EPA standards for 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 water. However, lead can get into tap water through pipes in the 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 use.

What Are We Doing About Lead?

Your local water department tests tap water at a number of homes in the communities. But not just any homes. Under Environmental Protection Agency regulations, homes that are likely to have high lead levels - usually older homes likely to have lead service lines or lead solder—must be tested. 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).

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. All three CVA communities met the EPA standards for lead in tap water in 2005.

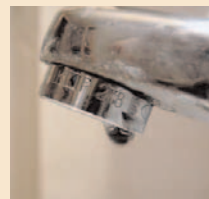


WHAT CAN I DO TO REDUCE EXPOSURE TO LEAD?

- Be careful of places you find lead in or near your home. Paint, soil, dust, and some pottery may contain lead.
- Run the tap until after the water feels cold. To save water, fill a pitcher and place in refrigerator for future use.
- Never use hot water from the faucet for drinking or cooking - especially when making baby formula or other food for infants.

- Ask your local water department if there are lead service pipes leading to your home.
- Test your tap water. Contact MWRA at 617-242-5323 or www.mwra.com for more tips and a list of certified labs.
- Call the Department of Public Health at 1-800-532-9571 or EPA at 1-800-424-LEAD for health information.

IMPORTANT INFORMATION FROM EPA ABOUT LEAD



Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap until after it is cold before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

What does this table tell me? This table lists results for lead, copper, sodium, and disinfection by-products including trihalomethanes and haloacetic acids. All results for lead, copper, sodium, and disinfection by-products were IN COMPLIANCE with drinking water regulations. *Note:* Westover AFB took two samples for asbestos at pipes that may contain asbestos. Neither sample detected any asbestos.

Local Test Results for 2005											
Your City or Town	Total Trihalomethanes (TTHMs) in ppb MCL=80 ppb MCLG=0		Haloacetic Acids (HAA5) in ppb MCL=60 ppb MCLG=0		Lead in ppb Action Level (AL) of 15 ppb MCLG=0		Copper in ppm Action Level (AL) of 1.3 ppm MCLG=1.3 ppm		Chlorine in ppm MRDL-4 ppm MRDL=4 ppm		Sodium in ppm
	Annual Average	Range	Annual Average	Range	# Homes Above AL	90% Value	# Homes Above AL	90% Value	Annual Average	Range	
Chicopee	39	25-51	28	19-48	0 of 31	3	0 of 31	0.18	0.65	0.1-1.40	11.6
South Hadley FD #1	47	32-58	18	5-26	1 of 15	12	0 of 15	0.03	0.3	0.1-0.8	5.8
Wilbraham	45	30-62	19	1-33	1 of 16	12.6	0 of 16	0.09	0.3	0.2-0.6	6
Westover-Air Force Base	43	32-50	36	2-52	0 of 6	2	0 of 6	0.18	0.56	0.1-1.1	NA

Definitions for **MCL** and **MCLG** are on page 3. **MRDL** - Maximum Residual Disinfectant Level. The highest level of a disinfectant allowed in drinking water. There is 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. **AL**=Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **ppm**=parts per million **ppb**=parts per billion

important EPA and DEP information

Drinking Water and People with Weakened Immune Systems:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 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. Their presence 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 (617-242-5323).

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



MY WATER IS CLOUDY OR DISCOLORED ONCE IN A WHILE. CAN I DRINK IT?

You can safely drink, cook with, or bathe in this water. If you have a concern, call MWRA or your local water department. Water is piped under pressure throughout the system. Sometimes air can become trapped in the water causing cloudiness. This happens more often in cold weather. This cloudiness is only temporary, and the water clears up in a short time. Rust from old pipes can cause rust to be carried along. This can happen when the valves are being repaired, the system is being flushed or tested, or fire hydrants are in use. Wait until the water is clear before doing laundry to avoid staining clothes.

WHERE TO GO FOR FURTHER INFORMATION

	websites	phone
Massachusetts Water Resources Authority (MWRA) Massachusetts Department of Environmental Protection Department of Conservation & Recreation (DCR) Massachusetts Department of Public Health (DPH) US Centers for Disease Control and Prevention (CDC) List of State Certified Water Quality Testing Labs Source Water Assessment and Protection Report	www.mwra.com www.mass.gov/dep www.mass.gov/dcr/ www.mass.gov/dph www.cdc.gov www.mwra.com/water/html/qual6.htm www.mwra.com/sourcewater.htm	617-242-5323 617-292-5500 617-626-1250 617-624-6000 800-311-3435 see MWRA 617-242-5323
public meetings MWRA Board of Directors MWRA Advisory Board Water Supply Citizens Advisory Committee	www.mwra.com/02org/html/gov.htm www.mwraadvisoryboard.com www.mwra.com/02org/html/wscac.htm	617-788-1117 617-742-7561 413-586-8861
community water systems Chicopee Water Department South Hadley Fire District #1 Wilbraham		413-594-3420 413-532-0666 413-596-2807

If you would like more in-depth information on your water quality, a monthly report is available. Please visit our website www.mwra.com or call 617-242-5323. Thank you for reading this report.

water conservation



Wasting water can add up quickly. On average, a family of four uses 90,000 gallons of water each year; each person uses about 65 gallons of water each day. Consumers are discovering that more efficient water use can reduce the impact on the water supply and their wallets. Here are some ways to make your home and your habits more water efficient.

Fix Leaks

A leaky faucet is easy to see. But hidden leaks in the toilet, under the sink, or behind a washing machine can waste large amounts



of water and can also damage floors and ceilings. Take a reading of your water meter. Check again in an hour. If the reading has changed, you've got at least one leak. Investigate!

Install a Low-Flush Toilet

Toilets account for over a third of the water used in most homes. Installing a new ultra low-flush toilet will save thousands of gallons each year and can reduce your bathroom water use by more than half.

Install a Low-Flow Showerhead and Faucet Aerator

Some showerheads may still use over 5 gallons per minute. A low-flow showerhead uses 2.5 gallons or less and can save you over 20 gallons per 10-minute shower. In one year, that's over 7,000 gallons. Faucets can use 2 to 7 gallons of water per minute – a low flow-aerator can reduce the flow by about 25%.

Follow Outdoor Water Saving Ground Rules

Summer is an especially important time to save water. Water consumption can increase up to 50% in the summer months due to outdoor water use.

More Tips

For more water saving ideas, call 617-242-SAVE or go to www.mwra.com.



Outdoor Water Saving Ground Rules

- ☼ Water your lawn (and other landscaping) in the early morning or evening to avoid evaporation.
- ☼ Be sure sprinklers water only your lawn, not the pavement.
- ☼ Never water on a windy, rainy, or hot day.
- ☼ Never use the hose to clean debris from your driveway or sidewalk. Use a broom.
- ☼ Apply mulch around flowers to reduce evaporation, promote plant growth, and control weeds.



The Inch Rule

Most lawns, shrubs, vegetables, and flowers need just one inch of water per week. If there has been an inch of rainfall during the week, you don't have to water at all.

Overwatering can actually weaken your lawn by encouraging shallow roots that are less tolerant of dry periods and more likely to be damaged by insects.

