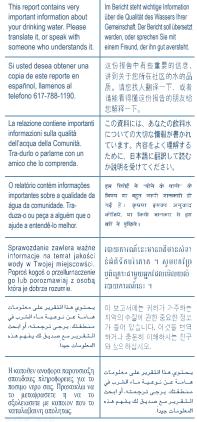
## YOUR AWARD WINNING WATER

Drinking Water Test Results 2014 Massachusetts Water Resources Authority



Massachusetts Water Resources Authority and Your Local Water Department

This report is required under the Federal Safe Drinking Water Act. MWRA PWS ID# 600000

#### 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
	Department of Conservation and Recreation	www.mass.gov/dcr/watersupply.htm	617-626-1250
-	Massachusetts Dept. of Public Health (DPH)	www.mass.gov/dph	617-624-6000
	US Centers for Disease Control & Prevention (CDC)	www.cdc.gov	800-232-4636
	List of State Certified Water Quality Testing Labs	www.mwra.com/o4water/html/testinglabs.html	617-242-5323
	Source Water Assessment and Protection Reports	www.mwra.com/sourcewater.htm	617-242-5323
-	Information on Water Conservation	www.mwra.com/conservation.html	617-242-SAVE
	Public Meetings		
	MWRA Board of Directors	www.mwra.com/o2org/html/boardofdirectors.htm	617-788-1117
1	MWRA Advisory Board	www.mwraadvisoryboard.com	617-788-2050
_	Water Supply Citizens Advisory Committee	www.mwra.com/o2org/html/wscac.htm	413-213-0454

For a large print version, call 617-242-5323.





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Dear Customer,

Clean, fresh water that tastes great – that's what you expect when you fill your glass, and that's what MWRA delivers right to your faucet. In fact, MWRA water was chosen as the best tasting in the country in 2014 at an annual conference of water specialists.

And it's not just the taste of the water that's good. MWRA takes hundreds of thousands of tests each year, and your water met every state and federal drinking water standard. System-wide, we remain below the Lead Action Level. Please read the letter on page 4 for more information on your community's local water system.

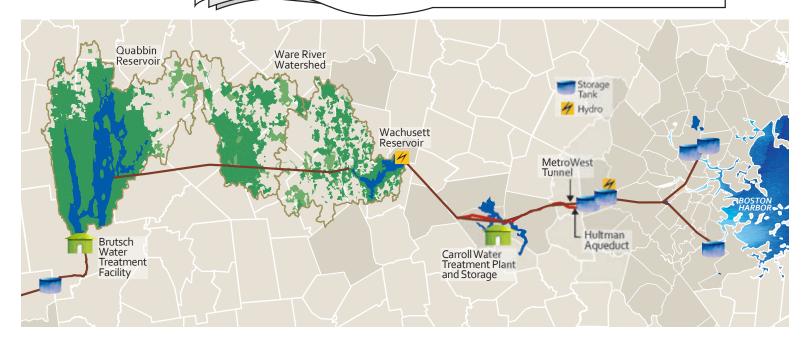
There are several reasons our water tastes so good, beginning with high-quality source water. Next is the state-of-the-art treatment we provide - starting with ozone in 2005 and then adding UV light in 2014. After treatment, the water does not see the light of day until it reaches your tap. MWRA is now finishing up construction of the last of its covered water storage projects with the Spot Pond Tank in Stoneham slated for completion later this year.

We hope you take a few moments to read this report. We want you to have the same 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,

while to have y

Frederick A. Laskey Executive Director





#### WHY YOUR WATER TASTES GREAT - HIGH QUALITY SOURCE WATER

Your water comes from the Quabbin Reservoir, about 65 miles west of Boston, and the Wachusett Reservoir, about 35 miles west of Boston. These pristine reservoirs supply wholesale water to local water departments in 51 communities. The two reservoirs combined supplied about 200 million gallons a day of high quality water to consumers in 2014. Your water also comes from local water supplies. Please see page 4 for more information.

The Quabbin and Wachusett watersheds are naturally protected with over 85% of the watersheds covered in forest and wetlands. To ensure safety, the streams and reservoirs are tested often and patrolled daily by the Department of Conservation and Recreation (DCR).

Rain and snow falling on the watersheds protected land around the reservoirs - turn into streams that flow to the reservoirs. This water comes in contact with soil, rock, plants, and other

material as it follows its natural path to the reservoirs. While this process helps to clean the water, it can also dissolve and carry very small amounts of material into the reservoir. Minerals from soil and rock do not typically 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 data in this report show that these contaminants are not a problem in your reservoirs' watersheds.

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program report for the Quabbin and Wachusett Reservoirs. 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. Your water also comes from local supplies that have a separate report.

#### **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 the water) is one measure of overall water quality. All water must be below 5 NTU (Nephelometric Turbidity Units), and water can only be above 1 NTU if it does not interfere with effective disinfection. In 2014, turbidity was always below both the 5.0 and 1.0 NTU standards, with the highest level at 0.62 NTU. Typical levels at the Wachusett Reservoir are 0.3 NTU.

MWRA also tests reservoir water for pathogens such as fecal coliform, bacteria, viruses, and the parasites *Cryptosporidum* 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.

#### **TESTING RESULTS - AFTER TREATMENT**

EPA and state regulations require many water quality tests after treatment to check the water you are drinking. MWRA conducts hundreds of thousands of tests per year on over 120 contaminants (a complete list is available on www.mwra.com). Details about 2014 test results are in the table below. The bottom line is the water quality is excellent. For results on your local water, please see page 4.



#### Sodium facts ~~~~~

Sodium in water contributes only a small fraction of a person's overall sodium intake (less than 10%). MWRA tests for sodium monthly and the highest level found was 34.8 mg/L (about 9 mg per 8 oz. glass). This would be considered **Very Low Sodium** by the Food and Drug Administration.

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	0.008	0.007-0.009	2	No	Common mineral in nature
Monochloramine	ppm	4-MRDL	1.9	0-3.9	4-MRDLG	No	Water disinfectant
Fluoride	ppm	4	1.02	0.87-1.1	4	No	Additive for dental health
Nitrate^	ppm	10	0.06	0.01-0.06	10	No	Atmospheric deposition
Nitrite^	ppm	1	0.006	ND-0.006	1	No	Byproduct of water disinfection
Total Trihalomethanes	ppb	80	13.3	3.7-17.3	ns	No	Byproduct of water disinfection
Haloacetic Acids-5	ppb	60	10.2	0-15.9	ns	No	Byproduct of water disinfection
Total Coliform	%	5%	1.0% (Aug)	ND-1.0%	0	No	Naturally present in environment
Combined Radium	pCi/L	5	1.76	1.76	0	No	Erosion of natural mineral deposits

**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. **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. **ppm=**parts per million **ppb=**parts per billion **ns=**no standard **pCi/L=**picoCurie per liter ^As required by DEP, the maximum result is reported for nitrate and nitrite, not the average.

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## WHY YOUR WATER TASTES GREAT - WATER TREATMENT

One of the reasons that the Boston area water tastes so good is that MWRA has state-of-the-art treatment at the John J. Carroll Water Treatment Plant in Marlborough. Since 2005, your water has been treated with ozone - produced by applying an electrical current to pure oxygen. Ozone has ensured strong protection against microbes and viruses, improved water clarity, and makes the water taste better. Starting in 2014, we also added ultraviolet (UV) disinfection, further improving the quality of the water. UV light is essentially a more potent form of the natural disinfection from sunlight, and ensures that any pathogens potentially in our reservoirs are rendered harmless.

In addition, the water chemistry is adjusted to reduce corrosion of lead and copper from home plumbing. Fluoride is added to promote dental health, and in April 2015 the dose was lowered to 0.7 ppm based on CDC recommendations. Last, we add monchloramine, a mild and long lasting disinfectant to protect the water as it travels to your home. Your local water supply may have different treatment. Please see page 4 for more information.



#### **TESTS IN COMMUNITY PIPES**

MWRA and local water departments test 300 to 500 water samples 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, they 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 month may be positive. If a water sample does test positive, we run more specific tests for E.coli, which is a bacteria found in human and animal fecal waste and may cause illness. No E.coli was found in any MWRA community in 2014. If your community found any total coliform, it will be listed within the community letter on page 4.

#### Award winning tap water!

In 2014, MWRA and the Boston Water and Sewer Commission won **Best Tasting Water in the US** at the American Water Works Association Annual Conference. We competed against water suppliers from across the country. MWRA also received the Public Water System Award for excellent performance from the Massachusetts Department of Environmental Protection.



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/UCMR/Partial/2014.html**.

#### 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

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. The 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.

#### INFORMATION ABOUT CROSS CONNECTIONS

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

#### Tap water - the smart choice ------

Although tap water and bottled water have to meet the same standards, tap water is delivered straight to your home without trucking or plastic waste. Bottled water produces over 10,000 times the amount of greenhouse gasses compared to tap water. Tap water costs less than a penny per gallon, while bottled

water can cost between \$1 and \$8 per gallon. Tap water is the smart choice!



### CITY OF MARLBOROUGH DEPARTMENT OF PUBLIC WORKS Water & Sewer Division

135 NEIL STREET \* MARLBOROUGH, MA. 01752

508-624-6910 \* Fax 508-460-3632

David R. Lavallee General Foreman Water & Sewer Division Public Water Supply # 2170000

#### CITY OF MARLBOROUGH WATER SYSTEM Drinking Water Report

This is an annual report on the quality of water delivered by the City of Marlborough to its residents and businesses. It complies with the Federal Safe Drinking Water Act (SDWA) requirement for "Consumer Confidence Reports" and contains information on the source of our water, its makeup and health risks associated with any contaminants. Safe water is vital to our community. Please read this report carefully and if you have any questions, call the numbers listed below.

The City of Marlborough's water supply comes from three sources: Massachusetts Water Resources Authority (MWRA), Lake Williams and Millham Reservoir. During calendar year 2013, the City of Marlborough Department of Public Works supplied 1.78 billion gallons of water for use by our customers.

Pursuant to the SDWA, the City of Marlborough is required to monitor its drinking water on a regular basis for specific man-made and naturally occurring contaminants. Results of regular monitoring are an indicator of whether or not our drinking water meets applicable health standards. Testing results for 2014 show the city in compliance with lead and copper limits. The city plans to continue its incentive program to encourage participation by residents in our sampling program, its program for removing lead service pipes as part of our street reconstruction projects, and treating its drinking water to keep the lead and copper limits below the maximum contaminant levels.

#### Water Quality Table

The Water Quality Table below provides information on the results of the city's testing program and is based upon samples taken during 2013. Terms used in the table are defined below or within the table itself.

Regulated Contaminants	Date(s) Collected	Result or Highest RAA*	Range	MCL	MCLG	Violation (Y/N)	Possible Sources
Inorganic Contaminant	ts						
Nitrate (ppm)	5/15/14	0.25		10	10	Ν	Runoff from fertilizer use; erosion of natural deposits
Barium (ppm)	5/15/14	0.026		2	2	N	Erosion of natural deposits
Fluoride (ppm)	5/15/14	1		4**	4	N	Water additive that promotes strong teeth
<b>Disinfectants and Disin</b>	fection Byprod	ucts	•				
Haloacetic Acids (HAA5s) (ppb) Total	Quarterly	14.25*	9 - 31	60		N	By-products of drinking
Trihalomethanes (TTHMs) (ppb)	In 2014	20.85*	11 - 53	80		Ν	water chlorination
Total Chlorine (ppm)	42 Samples per Month	2.20*	0.16 - 3.6	4	4	N	Water additive used to control microbes

#### MARLBOROUGH DPW -- 2014 FINISHED WATER TEST RESULTS

\* Highest RAA= highest running annual average over four consecutive quarters.

\*\* Fluoride also has an SMCL of 2 ppm.

Lead and Copper	Date(s) Collected	90 <sup>th</sup> Percentile*	Action Level	MCLG	# of sites sampled	# of sites above AL	Exceeds AL (Y/N)	Possible Sources
Lead (ppb)	4/16/14 10/14/14	8.8 12	15	0	60 60	4 4	N N	Corrosion of household plumbing
Copper (ppm)	4/16/14 10/14/14	0.056 0.090	1.3	1.3	60 60	0 0	N N	Corrosion of household plumbing

\* Nine out of every 10 homes sampled were at or below this level. This number is compared to the action level for each contaminant.

Unregulated and Secondary Contaminants	Date Collected	Result	SMCL	ORSG	Possible Sources
Nickel (ppm)	5/15/14	0.002		100	Natural sources
Sodium (ppm)	5/15/14	140		20*	Natural sources; runoff from road salt
Iron (ppb)	5/15/14	0	300		Natural sources; corrosion of cast iron pipes
Manganese (ppb)	5/15/14	0.016	50	300**	Erosion of natural deposits

\* Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure or congestive heart failure should be aware of the levels of sodium in their drinking water where exposures are being carefully controlled.

**\*\*** US EPA and MassDEP have established health advisory levels for manganese to protect against concerns of potential neurologic effects.

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.								
Turbidity	MCL	Lowest Monthly % of Samples < 0.3 NTU	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination			
Turbidity (NTU)	1		0.64	N				
Monthly Compliance*At least 95% < 0.3 NTU100NSoil runoff								
*Monthly turbidity compliance is related to a specific treatment technique (TT). This treatment facility filters the water so								
at least 95% of our sampl	at least 95% of our samples each month must be below the turbidity limits specified in the regulations.							

#### **Definitions**

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.

AL = Action Level. The AL is the concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

ppm = parts per million, or milligrams per liter (mg/l) ppb = parts per billion, or micrograms per liter ( $\mu$ g/l) NTU = Nephelometric turbidity unit

Unregulated Contaminants = Unregulated contaminants are substances without MCLs for which EPA requires monitoring. For some of these substances, the Massachusetts Office of Research and Standards (ORS) have developed state guidelines or secondary MCLs.

SMCL = Secondary Maximum Contaminant Level. These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

ORSG = Office of Research and Standards Guideline. This is 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.

Although many tests were run on a number of contaminants, only those substances listed above were detected. The water was tested for *Giardia* and *Cryptosporidium* and were not found.

The state recommended per capita water use is 65 gallons per person per day. In order to achieve this value, we encourage all residents to use water more efficiently. Please visit the Marlborough Department of Public Works website for tips on water conservation at <u>www.marlborough-ma.gov</u>.

#### **Reduction with Lead and Copper Sampling**

The City of Marlborough passed the 4<sup>th</sup> quarter 2013 sampling for lead and copper. The city also passed both the 2<sup>nd</sup> and 4<sup>th</sup> quarter 2014 sampling for lead and copper. Due to being in compliance with the Lead and Copper sampling for over a year, Marlborough's Lead and copper sampling has been reduced to sampling only once per year instead of twice a year as it has been in the past.

#### Water System Compliance

The City was placed under an Administrative Consent Order (ACO) by MassDEP in April, 2014 to bring the City's water system into compliance with the federal Long Term 2 Enhanced Surface Water Treatment Rule ("LT2"). The Marlborough Water Division is working to modify the Millham Water Treatment Plant to comply with the new regulations.

Construction of the UV system and other improvements to the treatment plant began in March, 2015 and will be completed by December 31, 2015

#### Important Information about your Drinking Water-Monitoring Requirements not met for City of Marlborough

Our water system violated a drinking water standard in 2014. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 2014, we did not sample for Trihalomethanes and Haloacetic Acids during the scheduled time period. Samples were due to be taken during the 4<sup>th</sup> quarter of 2014 and the samples were taken for that quarter. The schedule called for samples to be taken during the 3<sup>rd</sup> week of November, 2014 but the samples were actually taken on October 20, 2014.

#### What should I do?

There is nothing you need to do at this time.

Contaminant	Required sampling frequency	Number of samples taken	When Samples should have been taken	When samples were taken
Trihalomethanes	Quarterly	4	3 <sup>rd</sup> week-1st month of	Taken on 10/20/14
			each quarter	
Haloacetic Acids	Quarterly	4	3 <sup>rd</sup> week-1 <sup>st</sup> month of	Taken on 10/20/14
			each quarter	

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.

There is also a website for the City of Marlborough Source Water and Assessment Program (SWAP). This is a program established under the Safe Drinking Water Act. This program requires the City of Marlborough to inventory land uses within the recharge areas of all public water supply sources. The program also assesses the susceptibility of drinking water sources to contamination from these land uses and publicizes the results to provide support for improved protection. The Marlborough SWAP Report can be found on the website <a href="http://www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2170000.pdf">http://www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2170000.pdf</a>

This notice is being sent to you by CCR.

PWS ID# 2170000

For any questions or for further information including on public meetings, please visit the Marlbrough DPW at <u>www.marlborough-ma.gov</u> or contact David R. Lavallee, Marlborough Water/Sewer Division General Foreman at 508-624-6910 ext. 7401 or email at <u>dlavallee@marlborough-ma.gov</u>.



#### INVESTMENTS IN YOUR WATER SYSTEM

#### Preparing Dams for Climate Change

Since 2006, MWRA has spent over \$21 million on dam safety projects. All MWRA dams, dikes, spillways and appurtenances are inspected routinely by licensed dam safety engineers and are in good condition.

#### Protecting Reservoirs While Providing Open Space

The best way to deliver clean, safe water is to start with high quality source water. Since 1985, \$134.5 million has been invested in land preservation around the Quabbin, Ware and Wachusett watersheds.

#### **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.

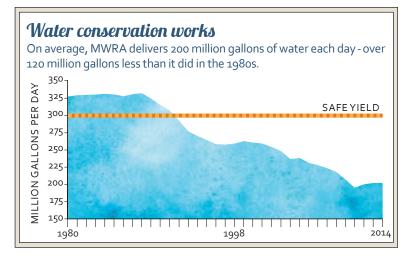
#### **Taking Advantage of Gravity**

MWRA operates three hydroelectric generators that capture the energy of the water as it flows east providing \$1.5 million in renewable energy annually.



#### Covered Storage Keeps Water Safe and Clean

MWRA has constructed a network of covered storage tanks across the service area that keep your water protected from the treatment plant to your tap. The Spot Pond Tank in Stoneham will open later this year.



## What you need to know about lead in tap water

MWRA water is lead-free when it leaves the reservoirs, and MWRA and local pipes do not add lead to the water. However, lead can get into water through household plumbing including some service lines (the pipe from the street to your house). Check with your local water department if you have a lead service line. If you do, you should replace it.

Under EPA rules, each year your local water department must test water in homes that are likely to have high lead levels. The requirement is that 90% of the sampled homes must have lead levels below the Lead Action Level of 15 ppb. Since corrosion control treatment began in 1996, lead levels in tested homes have dropped over 90%, and 19 straight sampling rounds have been below the EPA Action Level. For lead and copper results for your local water supply, please see page 4. For tips on how to reduce your possible exposure go to www.mwra.com/lead.

SEPTEMBER 2014 LEAD & COPPER RESULTS									
	Range	90% Value	(Target) Action Level	(Ideal Goal) MCLG	# Home Above AL/# Homes Tested				
Lead (ppb)	0-66	5.4	15	0	7/450				
Copper (ppm)	0-0.5	0.1	1.3	1.3	0/450				

**KEY: AL**=Action Level-The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Definition of MCLG available on page 2.

## 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, or MWRA at 617-242-5353 or www.mwra.com/lead.