



# water

## and the power of uv light

Your 2013 Drinking Water Test Results  
Massachusetts Water Resources Authority

<p>This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it.</p> <p>Si usted desea obtener una copia de este reporte en español, llámenos al teléfono 617-788-1190.</p> <p>La relazione contiene importanti informazioni sulla qualità dell'acqua della Comunità. Tra-durlo o parlarne con un amico che lo comprenda.</p> <p>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.</p> <p>Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowości. Poproś kogoś o przelimitowanie go lub porozmawiaj z osobą która je dobrze rozumie.</p> <p>يحتوي هذا التقرير على معلومات هامة عن نوعية مياه الشرب في منطقتك يرجى ترجمته، أو ابحث التقرير مع صديق لك يفهم هذه المعلومات جيداً.</p> <p>Η κατανόηση αναφοράς παραπομπών σε άλλους πληροφορίες για το ποσάμο νερό σας. Πρακτικά να το μεταφράσετε ή να το εξηγήσετε με κάποιον που το καταλαβαίνει αλλιώς.</p>	<p>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.</p> <p>这份报告中有些重要的信息。讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。</p> <p>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。</p> <p>इस रिपोर्ट में "पानी के पानी" के विषय पर बहुत जरूरी जानकारी दी गई है। कृपया इसका अनुवाद करें/जिसे, या किसी जानकारी से इस बारे में पूछें।</p> <p>ရေထက်ပိုမိုအရေးကြီးသော အချက်အလက်များကို အသိပြုရန် ယခုအချက်အလက်များကို အတိအကျ ဖတ်ရှုပါ။</p> <p>이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시면 친구와 상의하십시오.</p> <p>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.</p>
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Massachusetts Water Resources Authority  
and Your Local Water Department

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

### Where To Go For Further Information

Massachusetts Water Resources Authority (MWRA)	<a href="http://www.mwra.com">www.mwra.com</a>	617-242-5323
Massachusetts Dept. of Environmental Protection	<a href="http://www.mass.gov/dep">www.mass.gov/dep</a>	617-292-5500
Department of Conservation and Recreation	<a href="http://www.mass.gov/dcr/watersupply.htm">www.mass.gov/dcr/watersupply.htm</a>	617-626-1250
Massachusetts Dept. of Public Health (DPH)	<a href="http://www.mass.gov/dph">www.mass.gov/dph</a>	617-624-6000
US Centers for Disease Control & Prevention (CDC)	<a href="http://www.cdc.gov">www.cdc.gov</a>	800-232-4636
List of State Certified Water Quality Testing Labs	<a href="http://www.mwra.com/04water/html/testinglabs.html">www.mwra.com/04water/html/testinglabs.html</a>	617-242-5323
Source Water Assessment and Protection Reports	<a href="http://www.mwra.com/sourcewater.htm">www.mwra.com/sourcewater.htm</a>	617-242-5323
Information on Water Conservation	<a href="http://www.mwra.com/conservation.html">www.mwra.com/conservation.html</a>	617-242-SAVE

### Public Meetings

MWRA Board of Directors	<a href="http://www.mwra.com/02org/html/boardofdirectors.htm">www.mwra.com/02org/html/boardofdirectors.htm</a>	617-788-1117
MWRA Advisory Board	<a href="http://www.mwraadvisoryboard.com">www.mwraadvisoryboard.com</a>	617-788-2050
Water Supply Citizens Advisory Committee	<a href="http://www.mwra.com/02org/html/wscac.htm">www.mwra.com/02org/html/wscac.htm</a>	413-213-0454



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



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Dear Customer,

I am pleased to share with you the results of our water quality testing. MWRA takes hundreds of thousands of tests each year, and for 2013, we again met every federal and state drinking water standard. System-wide, we have been below the Lead Action Level for the past ten years. Please read your community's letter on page 4 for more information on your local water system.

The big news this year is that we have completed the start-up of a new ultraviolet (UV) disinfection facility at the John J. Carroll Water Treatment Plant in Marlborough, improving the quality of the drinking water we deliver to you.

UV light is essentially a more potent form of natural disinfection from sunlight. UV enables MWRA to inactivate the most difficult to kill pathogens - which could potentially be in the source water - without the use of additional chemicals or any associated disinfection by-products. The UV process and MWRA's high quality source water allow MWRA to meet new regulatory requirements cost effectively.

Since 2005, your water has been treated with ozone - produced by applying an electrical current to pure oxygen. Ozone provides a high level of protection against microbes and viruses, improves water clarity, and has actually made the water taste better. The addition of UV to the ozone process provides additional assurance that any pathogens potentially in our reservoirs will be rendered harmless.

In addition, fluoride is added to promote dental health and the water chemistry is adjusted to reduce corrosion of lead and copper from home plumbing. Last, we add monochloramine, a mild and long-lasting disinfectant combining chlorine and ammonia to protect the water as it travels through miles of pipelines to your home.

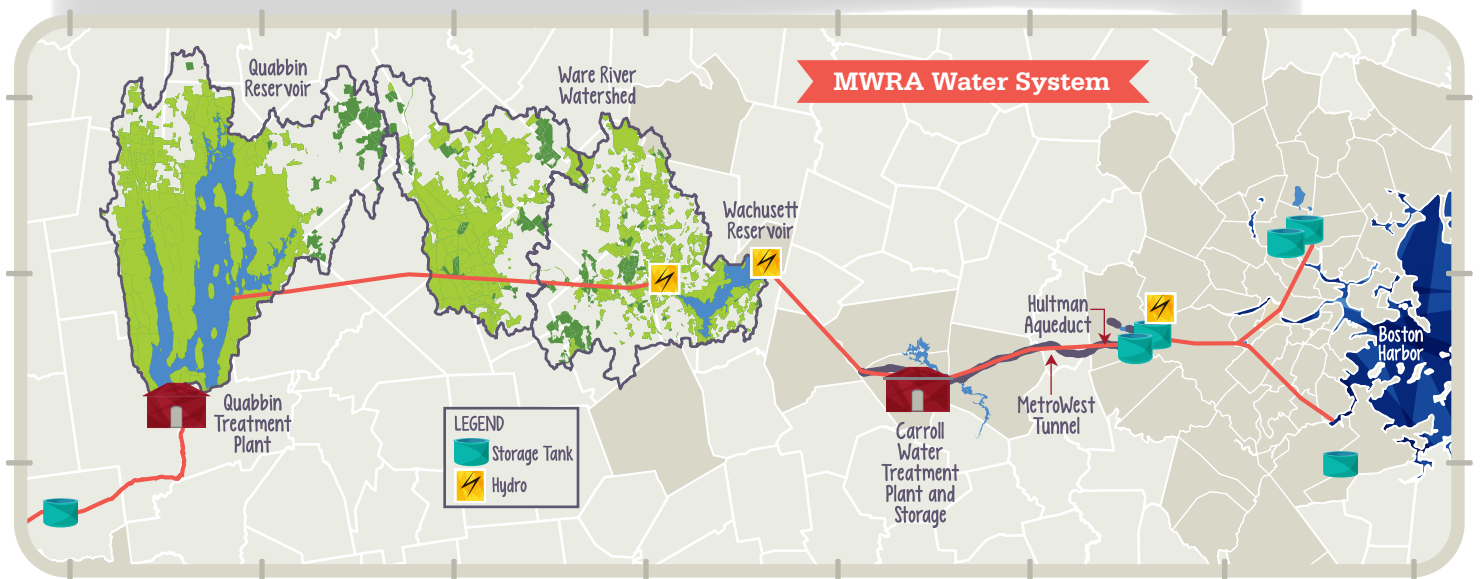
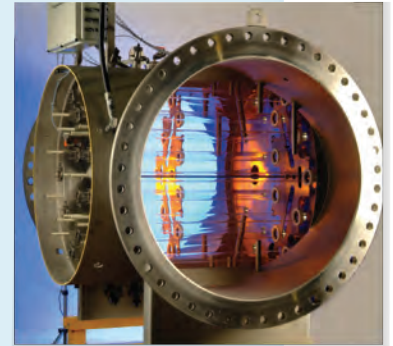
In a few short years, water treatment has gone from chlorine with its taste and odor issues, to ozone and now ultraviolet light- with no additional chemicals and no disinfection by-products. Just better, safer water.

Your local water supply may have different treatment. Please see page 4 for more information.

I hope you will 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,

*Frederick A. Laskey*  
Frederick A. Laskey  
Executive Director





### Where Does Your Water Come From?

Your water comes from the Quabbin Reservoir, about 65 miles west of Boston, and the Wachusett Reservoir, about 35 miles west of Boston. These 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 2013. 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 using existing watershed plans. 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. Typical levels at the Wachusett Reservoir are 0.3 NTU. In 2013, turbidity was below 1 NTU over 99.99% of the time, with the highest level at 1.17 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. No *Cryptosporidium* or *Giardia* was found in the water in 2013.

### Test 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](http://www.mwra.com)). For results on your local water supply, please see page 4. Details about 2013 test results are in the table below. The bottom line is that water quality is excellent.

**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 35.9 mg/L (about 9 mg per 8 oz. glass). This would be considered **Very Low Sodium** by the Food and Drug Administration.

### Water Quality Test Results for 2013

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	1.8	0.01-4.0	4-MRDLG	No	Water disinfectant
Fluoride	ppm	4	1.04	0.37-1.1	4	No	Additive for dental health
Nitrate <sup>^</sup>	ppm	10	0.08	0.01-0.08	10	No	Atmospheric deposition
Nitrite <sup>^</sup>	ppm	1	0.005	ND-0.005	1	No	Byproduct of water disinfection
Total Trihalomethanes	ppb	80	10.1	3.0-13.9	ns	No	Byproduct of water disinfection
Haloacetic Acids-5	ppb	60	9.0	1.4-13.2	ns	No	Byproduct of water disinfection
Total Coliform	%	5%	0.5% (Nov)	ND-0.5%	0	No	Naturally present in environment

**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  
<sup>^</sup>As required by DEP, the maximum result is reported for nitrate and nitrite, not the average.

### 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. If your community found any total coliform, it will be listed within the community letter on page 4.

### 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 this testing, and to see a listing of what was found, please visit [www.mwra.com/UCMR/2013.html](http://www.mwra.com/UCMR/2013.html).

### 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 compared to tap water. Half of our energy needs for water and wastewater treatment are met with green power including hydro-energy, wind turbines, and solar panels.

**Drink local! Drink tap water! Be green!**



### 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.

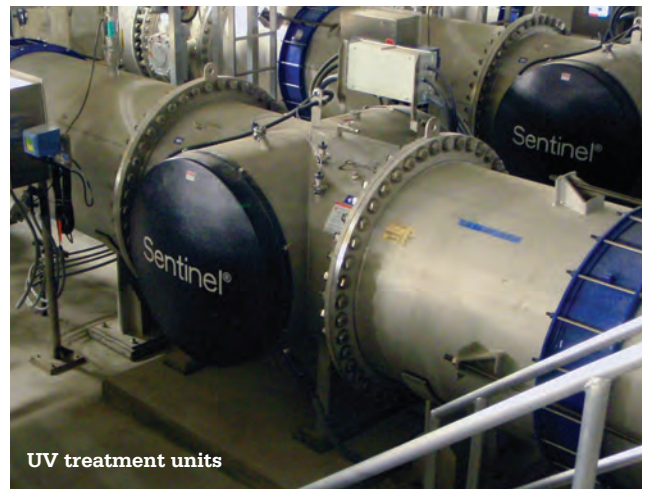
### Information About Cross Connections

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 617-242-5352 or visit [www.mwra.com/crosscon.html](http://www.mwra.com/crosscon.html).

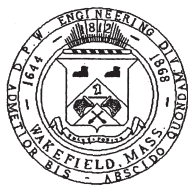
### Your Tap Water – Award Winning and Affordable!

In 2013, we won **New England's Best-Tasting** water award from the New England Water Works Association and the **National Sustainability Award** from the American Council for an Energy-Efficient Economy. Great tasting, green, and also cheap! Tap water costs less than a penny per gallon delivered straight to your home, while bottled water can cost from \$1 to \$8 a gallon.

**Make the smart choice and drink tap water.**



UV treatment units



## Town of Wakefield DEPARTMENT OF PUBLIC WORKS

The Town of Wakefield uses an average of 1.73 million gallons of water a day. About 80% is supplied by the MWRA through two connections. The remaining 20% is supplied by Wakefield from the Broadway Treatment and Pumping Facility utilizing the high quality source water of Crystal Lake. The Department of Environmental Protection (DEP) limits the amount of water the Town can take from Crystal Lake to a maximum of 580,000 gallons per day. Therefore, we use the Broadway Facility to supplement the MWRA supply and to aid in times of high demand, such as in the summer or fire fighting situations. The Broadway Facility can also supply 100% of the Town's water in the event of an emergency, such as interruptions in the MWRA supply. This dependability makes the Broadway Facility an invaluable part of Wakefield's water system.

### WATER DEPARTMENT STAFF AND OPERATIONS

The Wakefield Water Department maintains and operates the Broadway Treatment Facility, approximately 1105 miles of water mains, 950 fire hydrants, the Linden Street water booster station, the Harts Hill standpipe, pressure reducing valves, and multiple gate and service valves. We maintain the system including leak detection, repairs to main breaks, water main replacement, replacing older water meters, water main flushing, replacing hydrants, and responding to the needs and concerns of our residents. We conduct a thorough water sampling and testing program meeting all state and federal requirements. We also maintain an active Cross Connection Control Program, continuously inspecting facilities and testing devices to protect the water system from contamination.

During 2012, two new booster pumping stations at Montclare Avenue and Harts Hill on Sidney Street were put into service. Residents in these areas should have improved water pressure, particularly during periods of high demand.

### SOURCE WATER ASSESSMENT

The DEP conducted a Source Water Assessment Program (SWAP) in 2004 to assess the susceptibility of the Crystal Lake supply to contamination. DEP assigned a susceptibility ranking of high to Crystal Lake. The Town provides complete treatment of the Crystal Lake supply that meets or exceeds all drinking water standards. We also conduct extensive monitoring as described below. The complete SWAP report is available at the Dept. of Public Works or online at <http://www.mass.gov/dep/water/drinking/3305000.pdf>.

### WATER ANALYSIS

The Town of Wakefield and the MWRA analyze water samples regularly to ensure we meet all standards. In 2013, we tested for more than 100 substances. We only detected 8 regulated contaminants and found all of these to be below all federal and state standards. Table 1 shows the amount (detected level) of each contaminant. Not listed are the more than 100 regulated substances that were not detected in our water. For the benefit of those persons who are restricting their sodium intake, we would like to provide supplemental information. Our testing indicates a sodium level of 64 ppm (about 15 milligrams per 8 ounce serving). A "low" sodium diet allows consumption of water with 140 milligrams of sodium per serving. For additional information on sodium, please contact the Board of Health.

### Richard F. Stinson, Director of Public Works

For any additional information including information about public meetings please contact: Steven Fitzpatrick, Supervisor – Water/Sewer Department of Public Works, Town Hall, 1 Lafayette Street, Wakefield, Massachusetts 01880 Tel. (781) 246-6301/Fax (781) 246-6266.

**TABLE 1. REGULATED CONTAMINANTS**

Parameter	Units	MCL (Highest Level Allowed)	Highest Level Found	MCLG (Ideal Goals)	Violation	How it gets in the water
Turbidity <sup>1</sup>	NTU	TT=5 NTU	0.52	n/a	NO	Soil runoff
		TT=% of samples <1.0 NTU	100%			
Fluoride <sup>2</sup>	ppm	4	1.1	4	NO	Water additive which promotes strong teeth
Sodium	ppm	Not applicable (n/a)	64	n/a	NO	Water treatment, common mineral in nature
Nitrate	ppm	10	0.29	10	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total Trihalomethanes	ppb	80 <sup>3</sup>	55 <sup>4</sup>	0	NO	Byproducts of drinking water disinfection
		range of detection 4-74 <sup>3</sup>				
Haloacetic Acids	ppb	60 <sup>3</sup>	37 <sup>4</sup>	0	NO	Byproducts of drinking water disinfection
		range of detection 15-48 <sup>5</sup>				
Combined Radium 226 and 228	pCi/L	5	0.6±0.5	0	NO	Erosion of natural deposits
Lead	ppb	AL=15 <sup>6</sup>	2 <sup>6</sup>	0	NO	Corrosion of household plumbing systems
		range of detection nd-82 <sup>5</sup>				
Total Coliform	%	5%	2.1% (Sept)	0	NO	Naturally present in environment

<sup>1</sup>TT = Treatment Technique: Turbidity is a measure of treatment performance and is regulated as a treatment technique. In Wakefield, 100% of samples met the treatment technique requirement.

<sup>2</sup>Both the MWRA and Town add fluoride to reduce cavities. <sup>3</sup>Highest level allowed (MCL) for this substance is based on the average of four quarterly samples at individual sample sites.

<sup>4</sup>Highest detected level is based on average of four quarterly samples of individual sample sites as required by regulation. <sup>5</sup>Highest value in range is based on individual samples, rather than averages.

<sup>6</sup>For lead, the Action Level (AL) and the highest level found are based on the 90th percentile of the samples. Most recent lead results were obtained in 2012.

## 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, your lead service line, 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.

In 1996, MWRA began adding sodium carbonate and carbon dioxide to adjust the water's pH and buffering capacity. This change has made the water less corrosive, thereby reducing the leaching of lead into drinking water. Lead levels found in sample tests of tap water have dropped by almost 90% since this treatment change.

## MWRA Meets Lead Standard in 2013

Under EPA rules, each year MWRA and your local water department must test tap water in a sample of homes that are likely to have high lead levels. These are usually homes with lead service lines or lead solder. The EPA rule requires that 9 out of 10, or 90%, of the sampled homes must have lead levels below the Action Level of 15 parts per billion (ppb).

All 18 sampling rounds over the past ten years have been below the EPA standard. Results for the 452 samples taken in September 2013 are shown in the table. 9 out of 10 houses were below 6.3 ppb, which is below the Action Level of 15 ppb. For lead and copper results for your local water supply, see page 4.

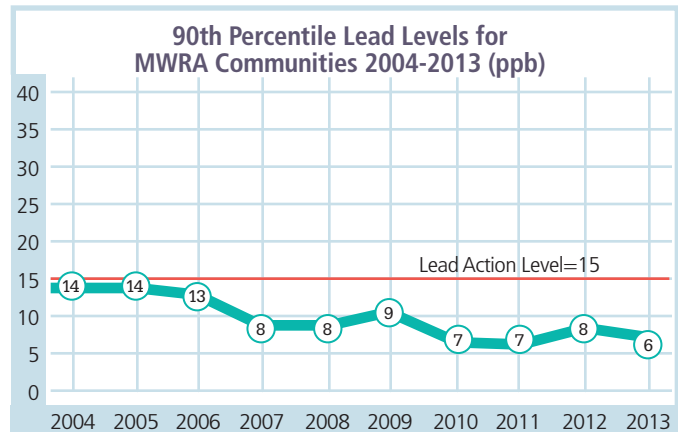
September 2013 Lead and Copper Results					
	Range	90% Value	(Target) Action Level	(Ideal Goal) MCLG	% Home Above AL/# Homes Tested
Lead (ppb)	0-46.9	6.3	15	0	8/452
Copper (ppm)	0-0.3	0.1	1.3	0	0/452

**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](http://www.epa.gov/safewater/lead).



### How do I reduce my exposure to lead in drinking water?

Run the tap until after the water feels cold. To save water, fill a pitcher with fresh water and place in the 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 lines leading to your home.

Check your plumbing fixtures to see if they are lead-free. Read the labels closely.

Test your tap water. Call the MWRA Drinking Water Hotline (617-242-5323) or visit our website for more tips and a list of DEP certified labs that can test your water.

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 1-800-532-9571 or EPA at 1-800-424-LEAD for health information.