




# YOUR AWARD WINNING WATER

Drinking Water  
Test Results 2014  
Massachusetts Water  
Resources Authority 

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

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.

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

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。

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

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。

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.

इस रिपोर्ट में 'पाने के पानी' के विषय पर बहुत जरूरी जानकारी दी गई है। कृपया इसका अनुवाद कीजिये, या किसी जानकार से इस बारे में पूछिये।

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

આ અહેવાલમાં ગરમ પાણીની ગુણવત્તા વિશેની મહત્વની માહિતી આપવામાં આવી છે. આ અહેવાલને સમજાવવા માટે કોઈકને પૂછવા અથવા તેની સમજૂતી માટે કોઈકની મદદ લેવાની સલાહ આપવામાં આવી છે.

يحتوي هذا التقرير على معلومات هامة عن نوعية ماء الشرب في منطقتك. يرجى ترجمته، أو ابحث التقرير مع صديق لك يفهم هذه المعلومات جيدا.

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.

Η κατάσταση αναφοράς παρουσιάζει αποδεκτές πληροφορίες για το ποσίο νερό σας. Παρακαλούμε να το μεταφράσετε ή να το εξηγήσετε με κάποιον που το καταλαβαίνει απόλυτως.

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Massachusetts Water Resources Authority  
and the Boston Water and Sewer Commission

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
<b>Public Meetings</b>		
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,

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.

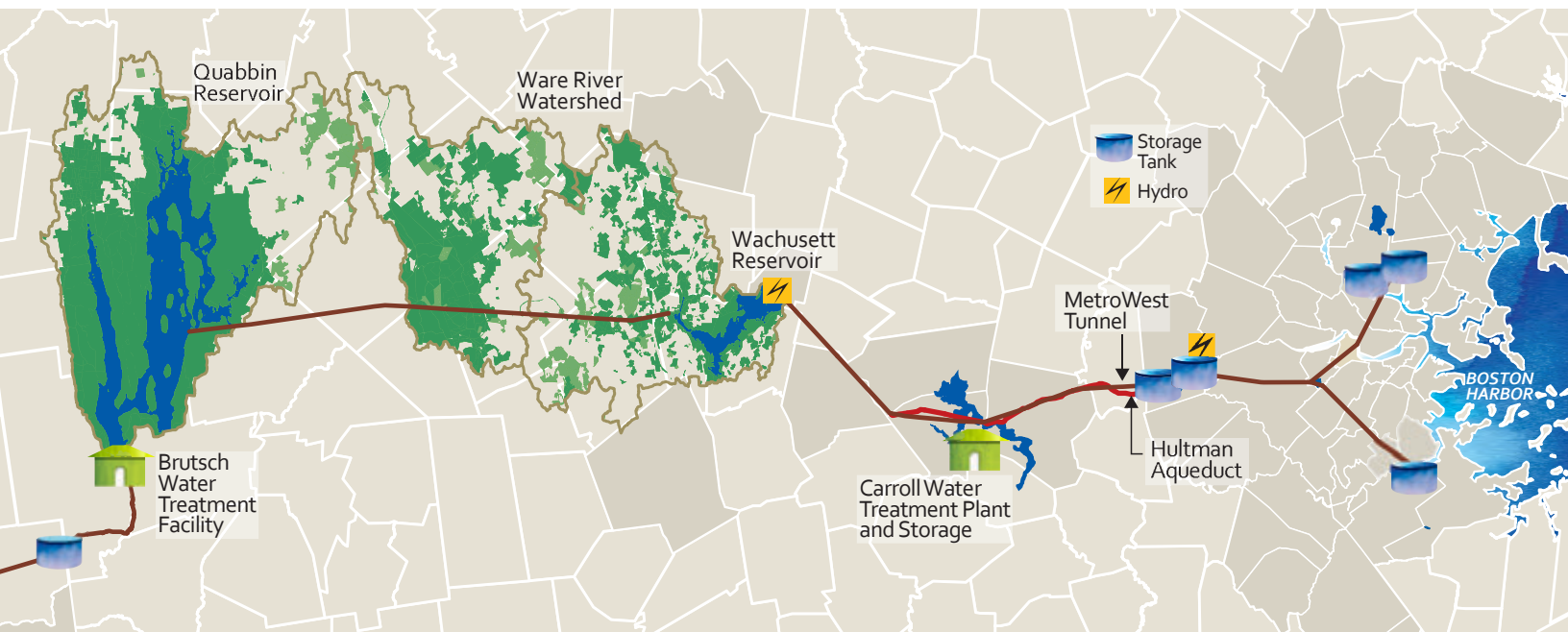
And it’s not just the taste of the water that’s good. MWRA takes hundreds of thousands of tests each year, and your water met every state and federal drinking water standard. System-wide, we remain below the Lead Action Level. Please read the letter on page 4 for more information on your community’s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

*Frederick A. Laskey*  
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.

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.

### 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 *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.

### 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](http://www.mwra.com)). Details about 2014 test results are in the table below. The bottom line is the 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 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.



### 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 and EPA recommendations. Last, we add monochloramine, a mild and long lasting disinfectant to protect the water as it travels to your home.



### 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 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.



### 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/UCMR/2014.html](http://www.mwra.com/UCMR/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](http://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 Boston  
BOSTON WATER AND SEWER COMMISSION

Public Water Supply  
# 3035000

Dear Customer:

This report contains an annual update on the quality of drinking water supplied to you by the Boston Water and Sewer Commission (BWSC), in partnership with the Massachusetts Water Resources Authority (MWRA). BWSC purchases water from MWRA for distribution to homes and businesses in the City of Boston. Inside this report, there is detailed information on the MWRA's system, and how the water delivered to Boston exceeds both federal and state quality standards.

In 2014, at the tenth annual National Tap Water Taste Test, the American Water Works Association (AWWA) named Boston's tap water as the "Best of the Best." The contest included entrants from water utilities across the United States, Canada and Puerto Rico.

A recent article in the *Journal of the American Water Works Association* provides a summary of BWSC's nationally recognized asset management program responsible for the superior quality of Boston's water. The comprehensive program includes replacement and rehabilitation of old pipes, which reduce the occurrences of water main breaks and leaks. Routine maintenance, an aggressive leak detection program, and the replacement of hydrants and valves also improve overall system efficiency.

To assure quality and regulatory compliance, BWSC maintains a comprehensive program to sample its tap water. EPA requires that no more than 5% of samples in a month may be positive for total coliform. BWSC and MWRA test over 240 samples each month for total coliform. In all of 2014, only one sample tested positive (June), and all other samples were clear.

BWSC continuously makes efforts to reduce the presence of lead in tap water and vigilantly monitors lead levels in our drinking water. BWSC tests homes regularly each year, and is pleased to report that since 2007, the Boston lead sampling results have remained below the EPA Lead Action Level of 15 parts per billion (ppb). In 2014, the test results were 11.4 ppb at the 90th percentile. BWSC continues its efforts to replace lead service lines, thereby improving overall water quality. Please see Page 5 for more information about lead in tap water.

Although private lead service lines represent less than 4% of BWSC's service connections, BWSC continues to provide the Lead Replacement Incentive Program, which offers eligible property owners an opportunity to replace private lead service lines. This program offers homeowners financial assistance to offset a portion of the total cost of the lead service replacement. For more information about this program, contact the BWSC Lead Hotline at (617) 989-7888 or visit BWSC's website at [www.bwsc.org](http://www.bwsc.org).

Any questions regarding the information in this report or about public meetings may be directed to BWSC's Communications and Community Services Department at (617) 989-7000.

A handwritten signature in black ink that reads "Henry F. Vitale".

Henry F. Vitale  
Executive Director/CFO and Treasurer



### 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.

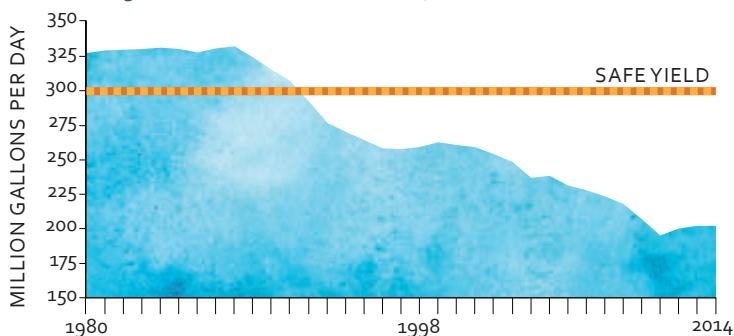


#### Covered Storage Keeps Water Safe and Clean

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.

### Water conservation works

On average, MWRA delivers 200 million gallons of water each day - over 120 million gallons less than it did in the 1980s.



### 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 tips on how to reduce your possible exposure to lead at [www.mwra.com/lead](http://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](http://www.epa.gov/safewater/lead), or MWRA at 617-242-5353 or [www.mwra.com/lead](http://www.mwra.com/lead).