Imagine a Day Without Water

Water is Essential, Reliable, and Invaluable. It keeps our communities healthy, our cities running, and our economies growing. While essential, water infrastructure is largely invisible. Few people realize what it takes to treat and deliver drinking water every day or how wastewater is cleaned so that it can be safely reused or returned to the environment. The high quality of life we enjoy in America would not be possible without water and the infrastructure that fuels it.

Imagine a Day Without Water! You couldn't brush your teeth, flush the toilet or take a shower. You couldn't give your dog a bowl of water or make your coffee. And that is just residential use. Commercial use is a huge component of water consumption as well. Everything from breweries, restaurants, to manufacturing plants needs water too. Water keeps our economy flowing.

Out of sight, out of mind? It needs to be on all of our minds because there are three unseen Water Systems that work independently of one another to manage the flow of water in Peabody. The drinking water system utilizes more than **190 miles of pipe** to deliver safe drinking water to homes and businesses across the City. And while Department of Public Service does a good job bringing safe, reliable, and affordable water to customers, the residents should know that just because the infrastructure is invisible to us, it doesn't mean it doesn't exist. Water might fall from the sky and flow through our rivers, but it is far from free. **Processing it, treating & delivering it**.

Department of Public Service
50 Farm Avenue
Peabody, MA 01960
PWS ID: 3229000

Presorted
U.S. Postage Paid
PERMIT No. 314
Peabody, MA

Postal Patron

THE CITY OF PEABODY
2016 WATER QUALITY REPORT

To Our Customers:

We are pleased to present you with the 2016 Water Quality Report. All the 2016 water quality parameter monitoring results meet MA DEP regulations.

The City has committed to providing safe and high quality drinking water to our customers.

The City will continue to improve the water treatment facility and distribution system, as well as implement the monitoring and maintenance programs throughout the system to ensure that we provide safe and high quality water to your tap.

Please call Davis Scribner, Acting Water Superintendent, at 978-536-5069 with any questions, comments, or concerns.

Sincerely,

Davis Scribner

Public Service: (978) 536-0600
Water Distribution: (978) 536-7121
Website: www.peabody-ma.gov/public_services.html

Winona Water Treatment Plant: (978) 536-5069
Coolidge Water Treatment Plant: (978) 538-7573

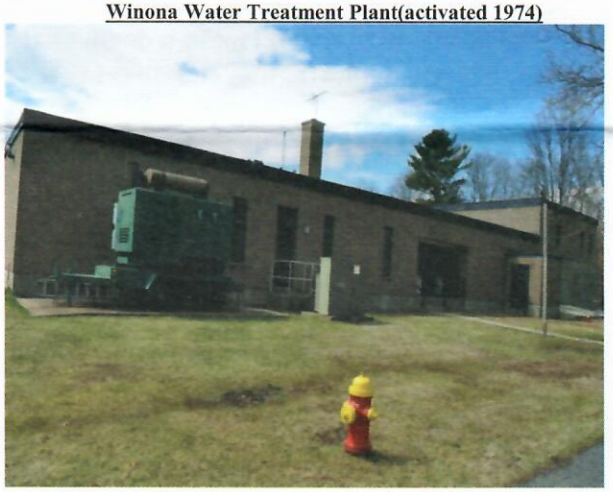
Peabody's Water System and Water Quality

Peabody's drinking water is mainly supplied by the Coolidge and Winona Water Treatment Plants (WTP). MWRA provides supplemental drinking water during high water demand months. There are four water storage tanks in the distribution system that provide water storage, water pressure, and fire protection for the City.

Coolidge Water Treatment Plant (activated 1998)

Source of Water: At Winona WTP, water is pumped from Winona Pond for treatment. At Coolidge WTP, water is pumped from Suntaug Lake and Spring Pond for treatment. The source of water for Suntaug Lake and Winona Pond is the Ipswich River. Under MADEP's Water Management Act Regulations, withdrawing water from the Ipswich River is only allowed during winter and spring months. The DEP has characterized our surface water source susceptibility as moderate to high. Please visit http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3229000.pdf for more information.

Winona Water Treatment Plant(activated 1974)



Water Treatment: Coolidge and Winona Water Treatment Plants implement the following treatment steps: coagulation and sedimentation which remove particles from the water through flocculation and then settling, filtration which removes the remaining of the particles out of the water, primary disinfection which uses free chlorine to kill the harmful microbes, and secondary disinfection which uses monochloramine to control the biological activity in the distribution system. Fluoride is added to our drinking water for dental health.
Additionally at Coolidge WTP, free chlorine is used for pretreatment to . oxidize the iron and manganese in the source water during the fall and winter months.

What does this table tell me?
The following contaminants were detected in the Peabody's drinking water system. All are below allowed levels. The table also shows the amount (Highest or Average Level Detected) of each substance found in the water compared to the level allowed by law. We have also included information on substances found in MWRA drinking water, which made up about 21% of the water delivered to your homes in 2016.

Samples collected from the Coolidge WTP						
Contaminant	**Average Level Detected**	**Range of Detects**	**MCL**	**MCLG**	**Violation**	**Possible Sources**
Barium (ppm)	0.017	-	2	2	No	Common mineral in nature
Fluoride (ppm)	0.41	0.02-.94	4	4	No	Additive for dental health
Nitrate (ppm)	0.19	-	10	10	No	Erosion of natural deposits
Sodium (ppm)	71.00	-	n/a	n/a	No	Naturally present in the environment
Turbidity	0.15	0.05-0.38	TT=5 NTU	1	No	Soil runoff
	99.8% of samples < 0.30 NTU					

Samples collected from the Winona WTP						
Contaminant	**Average Level Detected**	**Range of Detects**	**MCL**	**MCLG**	**Violation**	**Possible Sources**
Barium (ppm)	0.018	-	2	2	No	Common mineral in nature
Fluoride (ppm)	0.66	0.10-1.12	4	4	No	Additive for dental health
Nitrate (ppm)	0.16	-	10	10	No	Erosion of natural deposits
Sodium (ppm)	77.00	-	n/a	n/a	No	Naturally present in the environment
Turbidity (NTU)	0.09	0.04-0.27	TT=5 NTU	1	No	Soil runoff
	100% of samples < 0.30 NTU					

Definitions **Maximum Contaminant Level Goal (MGLG)** - The level of a contaminant in drinking water below which there is now known or expected risk to health. **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. **TT (Treatment Technique)** - A required process intended to reduce the level of a contaminant in drinking water. NTU—Nephelometric Turbidity Units, a measure of the suspended material in water. **Action Level**—The concentration of a contaminant, which, if exceeded, triggers a treatment or other requirements that a water system must follow. The action level for lead and copper is the 90th percentile of all samples taken at one time. **Maximum Residual Disinfectant Level (MRDL)** - the highest level of a disinfectant (Chlorine) allowed in drinking water. **ppm** -One part per million **n/a**—not applicable **ND** - Substance not detected in the sample.

Samples collected from the Distribution Sites						
Contaminant	**AverageLevel Detected**	**Range of Detects**	**MCL**	**MCLG**	**Violation**	**Possible Sources**
Total Coliform (% of samples)	0.0%	ND	5% of monthly samples	0	No	Naturally present in the environment
Total Chlorine (ppm)	1.97**	0.22-2.92	4	4	No	Water disinfectant
Nitrite (ppm)	0.065	0.00-0.33	1	1	No	By-product of disinfectant
Nitrate (ppm)	0.11	0.01-0.90	10	10	No	Erosion of natural deposits
Haloacetic Acids (HAA5, ppb)	25.0*	5.9-40.5	60	n/a	No	By-product of disinfectant
Total Trihalomethanes (TTHM, ppb)	40.5*	6.4-87.0	80	n/a	No	By-product of disinfectant
Contaminant	**90th Percentile**	**Range of Detects**	**Action Level (AL)**	**# of Site samples**	**Violation**	**Possible Sources**
Lead (ppb)	0.002	0.0001-0.004	0.015	30	No	Corrosion of household plumbing system
Copper (ppm)	0.070	0.008-0.187	1.3	30	No	Corrosion of household plumbing system

*The Compliance of TTHM & HAA5 is determined by a Location Running Annual Average (LRAA). The Max level of LRAA is reported.
** The compliance of Total Chlorine is determined by a Running Annual Average (RAA). The Max level of RAA is reported.
***Lead and Copper results are from 2015 sampling.

Please visit www.state.ma.us/04water/html/wat.htm for MWRA Water Quality Reports						
Contaminant	**Average Level Detected**	**Range of Detects**	**MCL**	**MCLG**	**Violation**	**Possible Sources**
Barium (ppm)	0.008	0.008-0.009	2	2	No	Common mineral in nature
Fluoride (ppm)	0.82	0.43-0.87	4	4	No	Additive for dental health
Nitrate (ppm)	0.04	0.01-0.04	10	10	No	Erosion of natural deposits
Nitrite (ppm)	0.005	ND-0.005	1	1	No	By-product of disinfectant
Sodium (ppm)	32.90	-	n/a	n/a	No	Naturally present in the environment
Total Chlorine (ppm)	2.12**	0.0-3.6	4	4	No	Water disinfectant
Haloacetic Acids (HAA5, ppb)	10.3*	ND-13.0	60	n/a	No	By-product of disinfection
Total Trihalomethanes (TTHM, ppb)	12.6*	3.2-15.6	80	n/a	No	By-product of disinfection
Total Coliform (% of samples)	0.7% (Aug)	ND-0.7%	5% of monthly samples	0	No	Naturally present in the environment

Contamination in Bottle Water and Tap Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it can acquire naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include: •***Microbial contaminants***, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations and wildlife; •***Inorganic contaminants***, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production and transportation, mining, or farming; •***Pesticides and herbicides***, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; •***Organic chemical contaminants***, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban Storm water runoff, and septic systems; •***Radioactive contaminants***, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which may provide protection to public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants found in the environment. The presence of contaminants does not necessarily indicate that water poses a health risk.

Important Health Information

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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Low Water Pressure and Conservation

Many residents had experienced the lower water pressure during the summer months. The causes of the low water pressures may result from the following:

- The use of water from the Ipswich River is regulated between June to November under the Mass DEP Water Management Acts. We reduce the water production at Winona WTP during these months to ensure we have enough of water in the Winona Pond for treatment.
- We manage the water productions from both WTPs and monitor the water usages in the distribution to allow the water to be exchanged in the tanks, and thus maintain the water quality in the system. The residents may experience lower water pressure when the water tank levels are low.
- The water usage increases significantly during the summer months (especially when there is a heat wave). We have occasionally reached the maximum water production rates (without compromising the water quality). An estimate of 1/3 portion of water production is consumed by the outdoor activities (that include pool-fillings, car washing, lawn-watering, etc.).
- A Mandatory water restriction was instituted on 8/8/16 due to low reservoirs levels and drought conditions declared by the State DEP.

Conservation Tips

We are asking your help to conserve the water, especially during the summer months. As a water consumer there are several measures you can do to conserve water.

- Check household faucets for leaks. A faucet with even a slow drip takes 10 to 25 gallons of water. Just think, 15 drips per minute add up to almost 3 gallons of water wasted per day, 65 gallons wasted per month, and 788 gallons wasted per year!
- Install low flow fixtures such as water saving showerheads
- Use water only when you need it. Don't leave water running; be sure to turn it off when you are finished.
- Use a broom to sweep your driveway, garage, or sidewalk instead of using water.
- Use a bucket of water to wash your bike or the family car and rinse quickly with a hose.
- Water your lawn in the evening or in the early morning to avoid evaporation.

What is a Cross-Connection?

A cross-connection is a director potential connection between any part of the public water supply and a source of contamination or pollution. All homes have potential cross connections. The most common form of a cross-connection is a garden hose, connected to the public water supply system and then used to apply chemicals and fertilizers. Other common cross-connections are dishwashers, toilets, pools, lawn sprinklers, and boilers.

Where Can a Cross Connection Occur?

A cross-connection can occur at one of many points throughout a water distribution system when there is unintended backflow from a contaminated source into the water distribution lines. Two types of backflow are backpressure and back siphonage. Backpressure may be created when a source of pressure such as a pump creates a pressure greater than that supplied by the water distribution pipe. Back siphonage may occur when there is a drop in the supply pressure of the water distribution system caused by water line break, water main repair, or rapid withdrawal of water from a fire hydrant. In these instances, a vacuum is created which may pull or siphon contaminants or pollutants back into the drinking water supply.

Why is it Important to Prevent Cross-Connections and Backflow?

A cross-connection or backflow can be a serious health hazard as a result of chemical or bacterial contamination of the drinking water system. Backflow prevention devices must be installed and must be maintained to eliminate backflow of contamination into our drinking water supply.

Community water supplies are continuously vulnerable to cross-connection contamination unless protected by properly maintained backflow prevention devices. All industrial, commercial, and institutional facilities within the City have been surveyed according to Massachusetts Division of Drinking Water Regulations to prevent cross-connection contamination. If you have a residential irrigation or fire sprinkler system we urge you to do your part in protecting the City's drinking water by also installing and maintaining appropriate backflow prevention devices in your home.

For more information, please call Davis Scribner, Cross Connection Coordinator, Winona Water Treatment Plant, at (978) 536-5067

SPANISH

El informe contiene informacion importante sobre la calidad del agua en su communidad. Tranduzcalo o hable con alguien que lo entienda bien.

PORTUGUESE

O relatorio contem informacoes importantes sobre a qualidade da auga da comunidade. Traduza-o ou peca ajuda de uma pessoa amiga para ajuda-a entender melhor.