

City/Town Water VS Bottled Water

Americans drink water from approx. 35 billion plastic bottles per year!

- Bottled water average cost: \$1.22 a gallon
- City/town water cost: \$2.78 for 748 gallons!
- Resource waste and pollution: To produce and deliver all of those 35 billion plastic bottles requires: 17 million barrels of crude oil, 36 ounces of water for every 12 ounce bottle and will emit 2.5 million tons of carbon dioxide.
- 35 billion plastic bottles are trash, and environmental pollutants, unless recycled.
- **All city/town water is highly tested and monitored**, much more than the bottled water industry.

Source: Tata and Howard, *5 Reasons to choose tap over bottled water*, 2016

Water conservation:

DEP guidelines indicate:

- Average consumer uses 70 gallons per capita per day,
- Greenfield, last year, used 47 residential gallons per capita per day. Yay!

Current usage in the home:

27% toilet flushing, 21% laundry, 19% bathing, 16% faucets, 16% leaks and other uses, 1% dishwashing.

To find out how you compare try this calculator: <https://home-water-works.org/calculator>



Questions... call us!

Water quality questions:

Mark Holley, Water Facilities Superintendent
413-772-1539 or markh@greenfield-ma.gov

Leaks, low pressure, meter problems, or billing information:

Department of Public Works
413-772-1528 ext 6100 or 6106

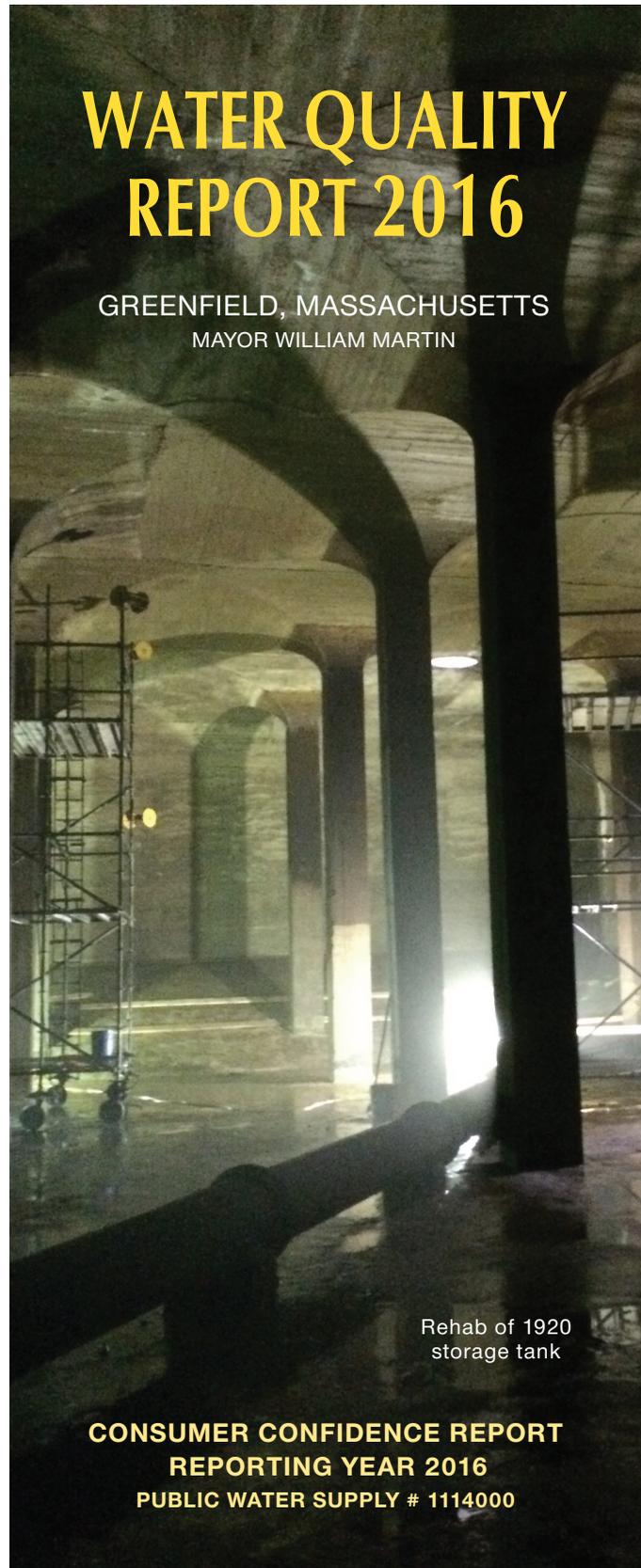
Hazardous Waste Disposal:

413-772-1539, Paul Zilinski
or paulz@greenfield-ma.gov

City Council: Meets every 3rd Wednesday of each month, at GCC TV.

WATER QUALITY REPORT 2016

GREENFIELD, MASSACHUSETTS
MAYOR WILLIAM MARTIN



Rehab of 1920 storage tank

**CONSUMER CONFIDENCE REPORT
REPORTING YEAR 2016
PUBLIC WATER SUPPLY # 1114000**

What's new...

The rehab of the 1920 water storage tank

Storing zillions of hydrogen and oxygen molecules is no small task for our dedicated team of water specialists. It was ascertained from their frequent rumblings that something was amiss, and they were not pleased with the condition of their present habitat. Enter the water wizards and now it is a palace where all reside in aquadic bliss.

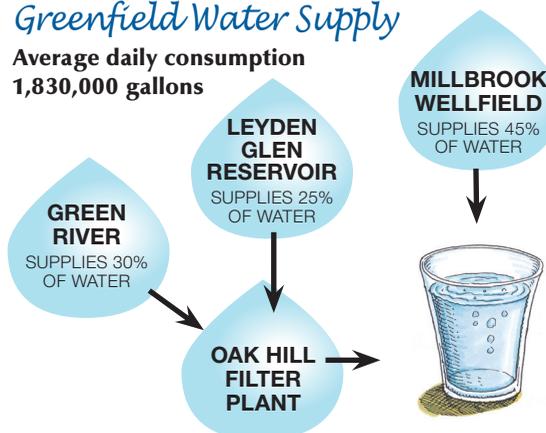
How the tank works...

The tank is part of the water system and provides, fire protection capacity, a hydraulic gradient for pressure throughout the system, and provides a buffer for pressure fluctuations making the system stable and reducing the number of main breaks. We saw a lot of main and service breaks while the tank was offline. The water is "pushed" into the tank by the production of water at the facilities. The well field pumps water into the system/mains forcing it into the tank, while water produced by Oak Hill flows through the mains and into the tank by gravity. The water in the tank is overturned every 48 hours (theoretically). During the day the usage in town is more than the facilities are producing so water drains out of the tank through the water mains to all of the users. At night when everyone is sleeping and not using water the facilities are putting out more water than needed so the tank fills back up, ready for the next day!



Greenfield Water Supply

Average daily consumption
1,830,000 gallons



The rehab... Rocky Mountain Water Storage Tank

was cleaned and inspected last summer. During the inspection divers removed "root balls" and repaired leaks in the tank, saving around 100,000 gallons of leaking water per day. They also found the tank needed maintenance, as it has been in service for a hundred years.

During the fall of 2016, Rocky Mountain Tank was drained and cleaned. While it was empty a contractor entered the tank, scoured it, removed all debris and intruding roots. They completed some concrete repairs and lined the whole tank with a urethane elastomeric coating. This coating, much like a pickup bed liner, will seal the tank stopping any water loss as well as extend the life of the tank. New tank hatches and fencing finished the project. This project was a \$500,000 dollar investment in the future of our water system!

Reporting violation:

In 2016 during the "run up" to taking Rocky Mountain tank offline the chlorine residual of the treated water entering the system from the Oak Hill Filter plant fell below the minimum limit of 0.25 milligrams per liter of chlorine. The treatment requirement is to maintain a residual of no less than .25MG/L. If the residual is below that limit for more than four hours it is considered a treatment violation. In this case the residual remained below the limit for less than four (4) hours, however it was not reported to Mass DEP within 24 hours. That is considered a reporting violation, and requires us to make a public notification via the Consumer Confidence Report, the town website, and local paper. For questions please contact Mark Holley @ 413-772-1539 or markh@greenfield-ma.gov.

Other town water projects:

Leyden Road The water main replacement project on Leyden Road was completed.

Adams Hill Tank A new pressure reducing valve was installed in the "low pressure" side of the Adams Tank water supply system. Some of you off Bernardston Road may have noticed better pressure or flow!

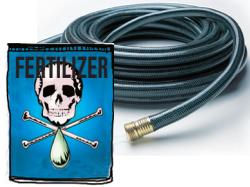
Commonly asked questions...

What is a Cross Connection? What Can I do about it?

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home.

For instance, when you spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow-prevention device can prevent this problem.

The DPW recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town. For additional information on cross connections and on the status of your water system's cross connection program, contact the DPW at 413-772-1539.



Greenfield's water system is routinely inspected by the state Department of Environmental Protection (DEP).



DEP inspects our system for its technical, financial and managerial capacity to provide safe drinking water. To ensure that we provide the highest quality of water possible, your water system is operated by highly trained, certified operators.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. When we find coliforms, it indicates the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During 2015, one Safe Drinking Water Sample collected from the system was positive for Total Coliform. Repeat samples, including downstream and upstream samples, were all absent of Total Coliform. After all assessments were completed, it was determined to be either a sampling or laboratory error.

SUBSTANCES DETECTED Below are substances that were detected in the Town's drinking water during the years listed next to the parameter. None of these substances were detected above the allowable limit.

CHEMICAL PARAMETERS

Substance/year (unit of measure)	Year Sampled	MCL (MRDL)	MCLG (MRDLG)	Amount Detected	Range of Detected Levels	Violation	Major Sources in Drinking Water
Nitrate (ppm)	2016	10.0	10.0	0.43	0.095 – 0.43	No	Runoff from fertilizer use; Erosion of natural deposits
Chlorine (ppm)	2016	4	4	2.14	0.18 – 2.14	No	Water treatment chemical used to control microbes
Total Trihalomethanes [THMs] (ppb)	2016	80	0	15.2	12.88 – 15.20	No	RAA = Running Annual Average Disinfection by-products
Haloacetic Acids [HAA] (ppb)	2016	60	N/A	16.8	6.49 – 6.78	No	RAA = Running Annual Average Disinfection by-products
Sodium (ppm)	2016	20	N/A	4.4	4.4	No	Runoff from storm water
Manganese (ppm)	2016	0.05mg/L – 0.3 mg/L	N/A	0.0112	ND (<0.002ug/L) ND-0.012	No	Natural sources
Iron (ppm)	2016	0.3 mg/L	N/A	0.054	ND (<0.051ug/L) – 0.054	No	Natural sources
Barium (ppm)	2014	2 mg/L	N/A	0.0089	0.0089	No	Natural sources
Nickel (ppm)	2014	No current MCL	N/A	0.0013	ND (<0.001) - 0.0013	N/A	Natural sources
Substance (unit of measure)	Year Sampled	Action Level (AL)	MCLG	Amount Detected 90th percentile	Range of Detected Levels	Violation	Major Sources in Drinking Water
Lead (ppb)	2014	15	0	2.8	0.5 – 12.0	No	Household plumbing and service connections
Copper (ppm)	2014	1.3	1.3	1.00	0.160 – 1.10	No	Household plumbing and service connections
Secondary Substances (unit of measure)	Year Sampled	SMCL	MCLG	Amount Detected	Range	Exceedance	Major Sources in Drinking Water
Turbidity*(NTU)	2016	Treat tech* = 1	N/A	0.18	.02 – 0.18		Soil runoff
pH (Units)	2015	6.6 – 8.5	N/A	7.2	7.0 – 7.2		Naturally occurring
Chloride (ppm)	2015	250	N/A	21	9.6 – 21	No	Water treatment chemical used to control microbes
Sulfate (ppm)	2015	N/A	N/A	8	ND – 8	No	Natural sources
Unregulated Contaminant Monitoring Regulation Stage 3 (UCMR#)							
Substances (unit of measure)	Year Sampled	Amount Detected	Range				
Chromium - 6 (ppb)	2015	0.11	ND – 0.11				
Strontium (ppb)	2015	79	43 – 79				
Vanadium (ppb)	2015	0.4	ND – 0.4				
Chlorate (ppb)	2015	27	ND – 27				



DEFINITIONS:

90th percentile. Out of ten samples, at least nine were below an accepted level.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there are no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL): 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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

ppm: One part per million (this would be one penny in 10,000)

ppb: One part per billion (one penny in \$10,000,000)

***Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water.

***Action Level:** The concentration of a contaminant that triggers treatment or other requirement that a water system must follow. Action levels are reported at the 90th percentile for homes at greatest risk.



***Turbidity:** 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.

Are there any precautions some of our customers should consider?

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 Safe Drinking Water Hotline (800-426-4791).

The Town is mandated by EPA to include the following generic language about the health effects of certain contaminants and drinking water sources:

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 dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria which may come from sewage treatment plants, 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, mining or farming.

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. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Regarding 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. The Greenfield DPW is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When 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. If you would like your water tested for lead at no charge please call the DPW at 413-772-1539. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>