



2012 DRINKING WATER QUALITY REPORT

PWS ID #4118000



This report was prepared by:
Halifax Water Department
500 Plymouth Street
Halifax, MA 02338

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In accordance with federal drinking water regulations, the Town of Halifax has prepared this Water Quality Report to inform consumers about the quality of water provided over the past year. In addition to water quality information, this report includes information on Halifax water production, treatment, storage and distribution systems. If you have any questions about this report, please contact Mr. Richard Clark at the Halifax Water Department at (781) 293-1733. If you would like to participate in discussions regarding your water quality, you may attend the monthly Board of Water Commissioners meetings. Information regarding the date and time of each meeting can be found on the Town's website: <http://www.town.halifax.ma.us/pages/index>

YOUR DRINKING WATER SOURCES

The Town of Halifax water distribution system includes four water supplies at two sources. The Richmond Park Well site includes two gravel-packed wells: Richmond Park Well No. 1 (MassDEP Source ID 4118000-01G) and Richmond Park Well No. 2 (MassDEP Source ID 4118000-02G). The wells are located off Plymouth Street near Pine Brook Drive and were constructed in 1965 and 1972, respectively. The Richmond Park Well site includes a treatment facility for iron and manganese removal along with disinfection and pH adjustment. The YMCA Camp Well site includes two gravel-packed wells: YMCA Camp Well No. 3 (MassDEP Source ID 4118000-03G) and YMCA Camp Well No. 4 (MassDEP Source ID 4118000-04G). The wells are located at the end of Lingam Street and were constructed in 1990 and 2004, respectively. The wells are treated at the YMCA Camp chemical feed building for disinfection and pH adjustment.

During 2012, the four wells provided 144,000,000 gallons of potable water to 2,756 residential, commercial, municipal and industrial accounts. These sources also supply water for fire protection.

The Town of Halifax water distribution system consists of approximately 49 miles of water mains ranging in size from two to twelve inches in diameter. The Town has one water storage facility: Plymouth Street Tank. The Plymouth Street Tank is an elevated steel tank located behind the Town Hall. The tank was constructed in 1960 and has a capacity of 0.5 million gallons.

WATER MAIN FLUSHING

Water distribution mains convey water to homes, businesses and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese, which can affect the taste, clarity and color of the water. Additionally, sediments can shield microorganisms from the disinfection power of chlorine, contributing to the growth of microorganisms within the distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do not use the tap allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank.

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Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

SUBSTANCES FOUND IN TAP WATER

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 from 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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides - which may come from a variety of sources such as agricultural, urban stormwater 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 stormwater 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, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. All 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 (800-426-4791).

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 Town of Halifax 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.

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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>.

IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) – 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.

Maximum Contaminant Level Goal (MCLG) – 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.

Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) 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 (chlorine, chloramines, chlorine dioxide) below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

90th Percentile – Out of every 10 homes sampled, 9 were at or below this level.

Variances and Exemptions – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Part Per Million (ppm) – This unit is equivalent to one milligram per liter (mg/L). One part per one million is equal to one minute in two years or one penny in \$10,000.

Part Per Billion (ppb) – This unit is equivalent to one microgram per liter (µg/L). One part per one billion is equal to one minute in two thousand years or one penny in \$10,000,000.

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

Massachusetts Office of Research and Standards Guideline (ORSG) – 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.

WATER QUALITY TESTING RESULTS

The tables below list all the drinking water contaminants that were detected in the 2012 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health threat.

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Regulated Substances							
Substance (unit of Measure)	Year Sampled	MCL (MRDL)	MCLG (MRDLG)	Amount Detected	Range	Violation	Typical Source
Nitrate (ppm)	2012	10	10	0.22	0.16-0.22	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Perchlorate (ppb)	2011	2	N/A	0.18	0.07-0.18	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks and explosives
Tetrachloroethylene (ppb)	2012	5	0	1.7	0.7-1.7	No	Discharge from factories and dry cleaners
Toluene (ppb)	2012	1,000	1,000	1.6	N/A	No	Discharge from petroleum factories
Substance (unit of Measure)	Year Sampled	AL	MCLG	Amount Detected (90 th %)	Sites Above AL/Total Sites	Violation	Typical Source
Copper (ppm)	2011	1.3	1.3	0.33	0/22	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2011	15	0	12	1/22	No	Corrosion of household plumbing systems; erosion of natural deposits

Radionuclides						
Substance (unit of Measure)	Year Sampled	MCL (MRDL)	MCLG (MRDLG)	Amount Detected	Range	Typical Source
Gross Alpha (pCi/L)	2012	15	0	3.2	0.77-3.2	Naturally occurring radioactive minerals that are occasionally present in bedrock
Radium 226 (pCi/L)	2012	5	0	1.210	0.398-1.21	Naturally occurring radioactive minerals that are occasionally present in bedrock
Radium 228 (pCi/L)	2012	5	0	1.6	0.166-1.16	Naturally occurring radioactive minerals that are occasionally present in bedrock
Combined Radium (pCi/L)	2012	5	0	1.21	1.16-1.21	Naturally occurring radioactive minerals that are occasionally present in bedrock

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Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Un-Regulated Substances				
Substance (unit of Measure)	Year Sampled	Amount Detected	Range	Typical Source
Bromodichloromethane (ppb)	2012	2.0	N/A	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2012	0.6	N/A	By-product of drinking water disinfection
Chloroform (ppb)	2012	5.1	N/A	By-product of drinking water disinfection
Methyl Tertiary Butyl Ether (ppb)	2012	2.3	N/A	Release from underground storage tank, pipelines, spills and emission
Nickel (ppm)	2012	0.005	N/A	Naturally occurring
Sodium (ppm)	2012	38.3	N/A	Naturally occurring; road salt

MCL Violations:

All water contains a number of dissolved mineral and organic substances. The presence of contaminants in drinking water does not mean your water is not safe. Federal and state drinking water standards establish limits, or Maximum Contaminant Levels (MCL's), for substances that might affect health or aesthetic qualities of water. More information about contaminants and potential health effects can be obtained by calling the US EPA hotline at 1-800-426-4791.

Protection of Water Sources:

A Source Water Assessment Plan (SWAP) is available at our office. This plan is an assessment of the delineated area around our listed sources, through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the Source Water Assessment Plan, our water system had a susceptibility rating of "medium". If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours.

Awards:

This spring, the Halifax Water Department proudly accepted a 2013 Public Water System Award from the Massachusetts Department of Environmental Protection for outstanding performance and achievement. The Halifax Water Department is also a past recipient of this award in 2007, 2008, 2009, 2011 and 2012.