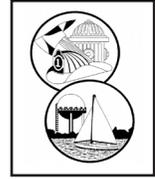


2012 Consumer Confidence Report  
Wareham Fire District Water Department

Wareham, MA  
PWSID MA4310000



The Wareham Fire District Water Department is pleased to present to you our Annual Drinking Water Quality Consumer Confidence Report (CCR). This report is designed to inform you about your drinking water. Through this report, we hope to ensure you that we are providing a safe and dependable supply of drinking water. We are committed to ensuring the quality of your water.



**WATER SOURCE - Wareham's** water originates from seven gravel packed wells within the Plymouth-Carver sole source aquifer. Each well is drilled to a depth of 60-90 feet. The wells are located in isolated areas of Maple Springs and Seawood Springs. We work hard to protect these wells from potential contamination. You can be assured that the Board of Water Commissioners considers protection of the well fields as their top priority. As such, in recent years the Board of Water Commissioners with matching grant water supply protection funds has purchased over 30 acres of land in the well fields, this now adds up to almost 300 acres permanently protected. The District continues to exceed the minimum monitoring requirements set by the Massachusetts Department of Environmental Protection (DEP). For example, we annually conduct additional monitoring for pesticides and herbicides used in the cranberry industry that are not currently regulated.

The Department of Environmental Protection has prepared a Source Water Assessment Program (SWAP) Report for the Wareham Fire District. It can be obtained from the DEP website: [www.state.ma.us/dep/brp/dws/files/swap/reports/4310000.pdf](http://www.state.ma.us/dep/brp/dws/files/swap/reports/4310000.pdf) The SWAP Report notes the highest potential source of contamination threat comes from improper pesticide storage or use and illegal clandestine dumping of trash that may contain hazardous materials or waste. The SWAP Report commends the Wareham Fire District for taking an active role in promoting source protection measures in the Water Supply Protection Areas through: the acquisition of undeveloped lands within the Zone II recharge area, supporting residential growth management within the Zone II and conducting an independent study of pesticide and herbicide impacts on the groundwater in the Zone II.

The water system includes seven wells, 2 corrosion control facilities, 3 water storage towers, 1,254 hydrants and approximately 165 miles of water main. For corrosion control and pH adjustment we add lime (calcium hydroxide) to increase the lower raw water pH to between 7.0 and 8.0 in the finished treated water you receive. Low dose of Sodium Hypochlorite is added at the wellfields as a disinfectant for control of potentially harmful bacteria such as E-Coli and fecal coliform.



The Wareham Fire District Water Department is located at 2550 Cranberry Highway, Wareham, MA. Water Superintendant Michael Martin can be reached at telephone number (508) 295-0450 or email address [michaelmartin@verizon.net](mailto:michaelmartin@verizon.net). The Wareham Fire District Board of Water Commissioners meets on the first and third Monday of the month at 5:30 p.m., unless otherwise posted. Visit us at [www.warehamfiredistrict.org](http://www.warehamfiredistrict.org).

## **District Highlights:**

In 2012, the Water Department adopted a new tariff. In order to avoid “rate shock” the Board voted to increase the water rate by 3% annually through 2020. With a current base rate of \$79.57 per 4000 cubic feet (30,000 gallons). Wareham continues to have one of the lowest base rates in the Commonwealth.

The three water towers were drained, cleaned, disinfected and inspected. Only the Bourne Hill tank shows signs of internal coating deterioration.

The District signed a land lease and power purchase agreement for the upcoming construction of a 600 KW Photovoltaic Solar Plant. The District will receive benefit from both rental income and reduced energy costs, along with possible future expansion. The plant is expected to be on line in 2013, and produce a million dollars in revenue and reduced power costs over the next 20 years.

The Maple Springs wellfield continues to experience water quality issues. Of significance is the upward trend of manganese (Mn) in the raw water from 0.12 ppm in 2006 to 0.4 ppm in 2012. Manganese, while naturally occurring in ground water, is not necessarily a health risk. It does cause aesthetic problems, most notably severe discoloration (brown/black) of the water. The District is aggressively exploring mitigation options with our engineers.

The new Maple Park Well Site received final approval from Mass DEP, design of the well and pipeline is in progress. The District expects to proceed with the design and construction of the new well and the associated new treatment plant now targeted for treatment of both the existing four Maple Springs wells as well as the new Maple Park well. Sequestering of manganese in the Maples Springs wellfield is under investigating as a temporary measure short of construction of the new treatment plant due in 2016.

We continued with our Uni-directional hydrant flushing program each spring. This program optimizes the cleaning of water mains throughout the distribution system.

An Inter-Municipal Agreement between the district and the Town of Rochester was signed permitting the sale of water and fire hydrants to the commercial properties fronting Rt. 28 and Kings Highway.

Water department staff installed 500 feet of new six-inch water main and a hydrant on Rogers Avenue, and 700 feet of new two-inch water main on Campinha Way to improve water pressure, provide fire protection, and enhance water quality.

The District continues to fund its voluntary Wellhead Protection Monitoring Program. Sampling is conducted each year in both the spring and fall to monitor for potential contaminants associated with cranberry grower operations. With now 10 years of data, observed detections indicate low levels of certain pesticides but they remain well below any health guidance values and pose no unacceptable health risk either individually or collectively.

To better serve the needs of our customers, the BOWC expanded office hours until 5:00 pm. Monday through Friday. Also a technician is now available for service calls on Saturdays from 9:00 a.m. to 2:00 p.m. Please call (508) 295-0450 to schedule an appointment.

**IMPORTANT INFORMATION** – 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 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 storm water 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 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, can 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 tap water is safe to drink, the DEP and EPA prescribes regulations that limit the amount of certain contaminants in public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water. 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 at 800.426.4791**.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 at 800.426.4791.

**MCL's** are set at very stringent levels. To understand the possible health effects described for regulated constituents, a person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-ten thousand chance of having the described health effect.

**Lead in drinking water:** “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 Wareham Fire District Water Department 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. 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>.”

**Manganese in drinking water:** “Manganese is a naturally occurring mineral found in rocks, soil and groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated

concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion, and health advisory levels. In addition, EPA and MassDEP have also established public health advisory levels. *Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 µg/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days.* See: [http://www.epa.gov/safewater/ccl/pdfs/reg\\_determine1/support\\_cc1\\_magnese\\_dwreport.pdf](http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf).”

**Bacteria in drinking water:** *Coliforms are bacteria, which are normally present in the environment and are used as an indicator that other, more potentially harmful, bacteria may be present.*

*Fecal Coliforms and E-coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.*

#### **Water Quality Management and Capital Improvement Plan Fee Rates**

**WQMF** - \$0.1209 per hundred cubic feet per billing (pays the debt service on the 2003 and 2005 ground water protection grants, and funds the annual ground water protection testing and report)

**CIPF Tower** - \$0.1750 per hundred cubic feet per billing (pays Glen Charlie Rd. water tower debt)

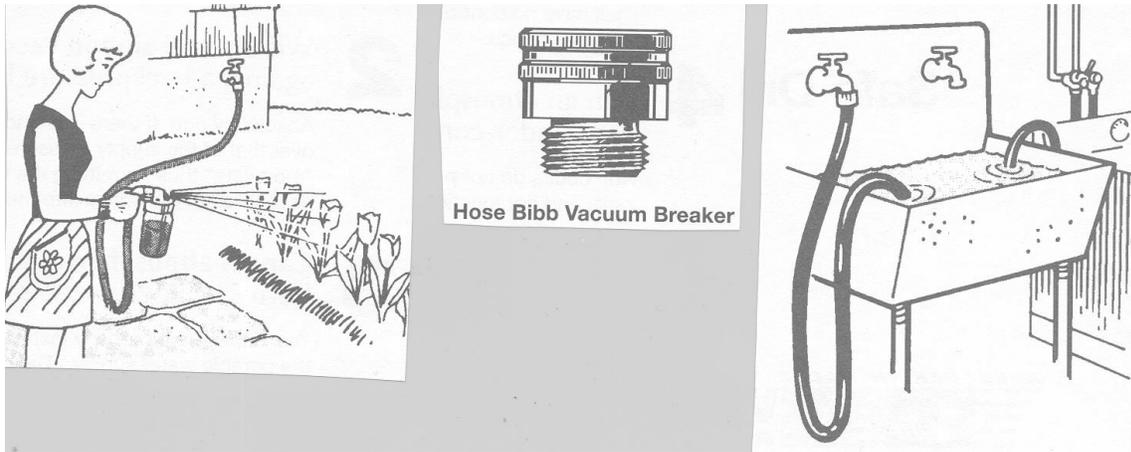
**CIPF Maple Park Well** - \$0.4620 per hundred cubic feet per billing (pays Maple Park Well design and construction debt)

**CIPF Main Replacement Program** - \$0.1650 per hundred cubic feet per billing (pays water mains replacement debt)

*(Capital Improvement Plan Fees above as approved by the 2009 District Meeting and is a requirement to fund capital improvement project debt incurred under the provisions of MGL c.44 § 8 by a fee)*

**Cross Connection Control Program:** Another way to protect the water supply is prevention of cross connections and backflows from service connections. As of July 2002, all new and retrofit water services require backflow protection. Backflows can occur whenever a potable water line is connected to fire protection, lawn irrigation, heating and air conditioning, or other equipment and piping. For instance, you’re going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure in the water main in the street drops at the same time you turn on the hose, the fertilizer may be sucked back into the drinking water pipes through the hose. Drops in pressure of water mains are most likely to occur due to either physical water main breaks or use of hydrants for fighting fires. Other examples of a potential cross connection are a garden hose attached to a service sink with the end of the hose submerged in a tub full of detergent, left submerged in a swimming pool or submerged in an open cesspool.

A free brochure titled “**50 Cross-Connection Questions, Answers, & Illustrations Relating To Backflow Prevention Products and Protection of Safe Drinking Water Supply**” is available for pick up at the Water Department office. For more information on preventing backflows, contact the Water Department or the Town of Wareham Plumbing Inspector.



**The following list is a summary of the Backflow Cross-Connection Program for 2012:**

- There are 246 facilities in the District (178 Commercial, 25 Industrial, 30 Municipal, and 13 Institutional).
- 10 new facilities were surveyed for backflow cross connections in 2012. Re-surveys are performed on existing sites based on their associated risk factors or change of use. The District re-surveyed 27 facilities in 2012.
- There are now a total of 177 Reduced Pressure Backflow Preventor (RPBP) devices and 220 Double Check Valve Assembly (DCVA) devices, for a combined total of 397 testable backflow devices registered in the District.

**ODD/EVEN LAWN SPRINKLER RESTRICTIONS IN EFFECT  
MAY 1<sup>ST</sup> THROUGH SEPTEMBER 30<sup>TH</sup> - HELP CONSERVE!**

The Wareham Fire District Water Department works hard to provide quality water to every tap. We ask you to help us protect and conserve our water sources. For our residential customers we offer free water conservation kits. There is a limit to one kit per address. To obtain one, please come by the water department office.

**WATER QUALITY SAMPLING TEST RESULTS** - Wareham Fire District routinely monitors your drinking water according to Federal and State laws. The following table shows any detection resulting from our monitoring for the period of January 1 to December 31, 2012\*.

(\*If no tests were required for a given contaminant in 2012, the law requires the most recent test results be included here. However, no test results over 5 years old are allowed).

Contaminant	Violation YES or NO	Level Detected	Unit	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants (Raw Water – Groundwater Rule)</b>						
E-Coli/Fecal Coliform	<b>YES</b> (AUGUST 2012)	<b>PRESENT</b> (WELL #1 ONLY)	Present or Absent	Absent	None	Class of bacteria which only inhabit the intestines of warm-blooded animals <b>NOTE: Well #1 Was Taken “Out Of Service” Till Further Notice.</b>

Contaminant	Violation YES or NO	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants (Distribution System – Total Coliform Rule)</b>						
Total Coliform	<b>NO</b>	ABSENT	% of monthly samples that are positive	Absent	Present in 5% or greater of samples	Naturally present in the environment, possible lack of disinfectant residual
E-Coli/Fecal Coliform	<b>NO</b>	ABSENT	Present or Absent	Absent	None	Class of bacteria which only inhabit the intestines of warm-blooded animals
<b>Lead and Copper (Sampled every 3 years – Due again in 2015)</b>						
Copper 3 <sup>rd</sup> . Qtr. 2012	<b>NO</b>	90th Percentile = 0.49	ppm (Parts per Million)	1.3	Action Level = 1.3 Not Exceeded	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives
Lead 3 <sup>rd</sup> . Qtr. 2012	<b>NO</b>	90th Percentile = 0.002	ppm	0.015	Action Level = 0.015 Not Exceeded	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Volatile Organic Contaminants and other Analytes (The list of Regulated VOC’s tested in October 2012 all Non Detected or below any MCL)</b>						
Tetrachloroethylene (PCE) February 2011	<b>NO</b>	ND – 0.5	ppb (Parts per Billion)	0	5	Discharge from factories and dry cleaners and asbestos cement lined pipes
Perchlorate July 2012	<b>NO</b>	ND	ppb	0	2	Component of propellants in rockets, missiles and fireworks
Nitrate January 2012	<b>NO</b>	ND	ppm	NA	10	Runoff from lawn fertilizer or domestic septic system leachate

**WATER QUALITY SAMPLING TEST RESULTS (CONTINUED):**

## Disinfection By-Products

Total Trihalomethanes Quarterly 2012	<b>NO</b>	ND – 17.8	ppb	0	80	Compounds formed in the chlorination process when combined with organic matter, suspected of causing cancer
Haloacetic Acids Quarterly 2012	<b>NO</b>	ND	ppb	0	60	Compounds formed in the chlorination process when combined with organic matter, suspected of causing cancer

## Secondary Contaminants (Aesthetic compounds, Non-health related - Not required to be reported)

Secondary Contaminant	Average Detected (Detection Range)	Unit Measurement	SMCL	Health Advisory	Likely Source of Contamination
Potassium April 2012	0.70 (0.69 – 0.71)	ppm	None		Mineral present naturally in the soil
Iron April 2012	ND	ppm	0.3		Mineral present naturally in the soil
Manganese April 2012	212 (17 – 407)	ppb	50	300	Mineral present naturally in the soil
Chloride April 2012	8.54 (8.36 – 8.73)	ppm	250		Leaching of marine sedimentary deposits pollution from seawater, brine, industrial and domestic waste (sewage).
Calcium April 2012	7.24 (5.08 – 9.40)	ppm	None		Mineral present naturally in the soil
Magnesium April 2012	1.12 (1.07 – 1.17)	ppm	None		Mineral present naturally in the soil

## Voluntary Testing For Un-regulated Pesticides Used in Cranberry Growing Industry

2,6-Dichlorobenzamide (BAM) Nov 2010 and Apr 2011 (Tested all Four Maple Springs Wells, Detected in 3 out of 4 wells)	Range = ND - 0.30	ppb	Mass Office of Research and Standards Guidelines: 30 ppb children 110 ppb adults
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**Non-Detects (ND)** - laboratory analysis indicates that the constituent is not present.

**Parts per million (ppm) or Milligrams per liter (mg/l)** - one part per million corresponds to one minute in two years or a single penny in \$10,000.

**Parts per billion (ppb) or Micrograms per liter** - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

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

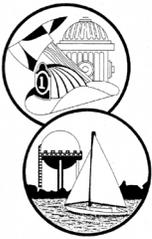
**Maximum Contaminant (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**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.

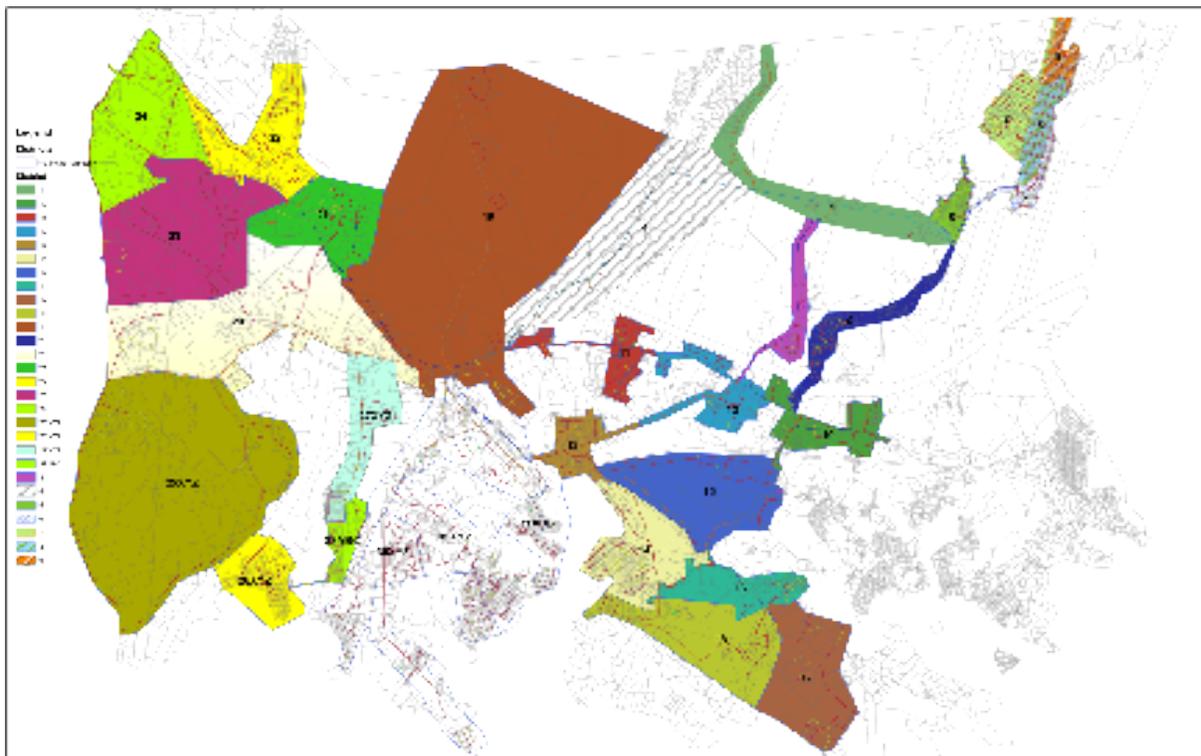
**Secondary Maximum Contaminant Level (SMCL):** Standards for SMCL are established based on aesthetic considerations, State DEP recommended annual sampling but not required.

**Radon** is a radioactive gas that you cannot see, taste, or smell. Radon can move up through the ground and into a home through cracks in the foundation. Radon can build up to high levels in all types of homes. Radon can also be released from tap water when showering, washing dishes, or doing other household activities. Compared to radon entering the home through soil, radon from tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air-containing radon can lead to lung cancer. Drinking water containing radon may also cause increase risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 Pico curies per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your State radon program or call EPA's Radon Hotline (800.SOS.RADON).

WAREHAM FIRE DISTRICT  
WATER DEPARTMENT  
2550 CRANBERRY HIGHWAY  
WAREHAM, MA 02571



2012 CONSUMER CONFIDENCE REPORT



**Map of the 36 Annual Hydrant Flushing Districts**