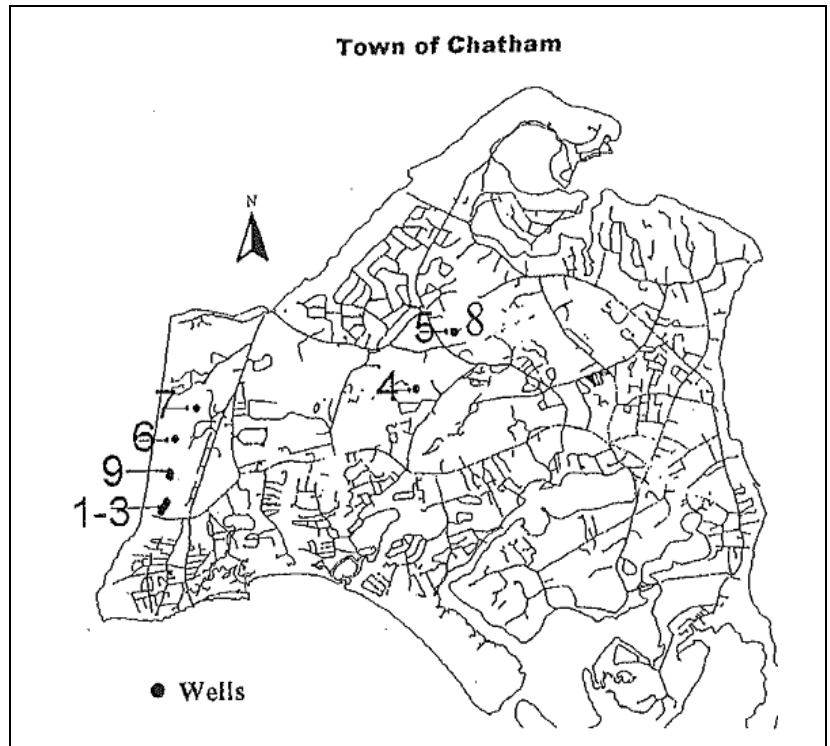


Chatham Water Department Annual Water Quality Report - Calendar Year 2009

The annual "Water Quality Report" is prepared by the Town of Chatham Water Department. The Safe Drinking Water Act (SDWA) requires that this report be prepared to inform you, our customers, of water quality test results performed on the water from our water supplies and in the distribution system. The Water Department and its contract operator, Weston & Sampson, are committed to providing the highest quality water to our customers.

The Water Department's Director and staff are available Monday through Friday, from 8:00 AM to 4:00 PM, to answer your questions and provide assistance at the addresses and telephone number listed below. The Water Advisory Committee meets once a month at the Water Department Office at 221 Crowell Road. The Chatham

Board of Selectmen (as Water Commissioners) meet at the Town Hall, 549 Main Street. Dates and times for the Water Advisory Committee and Selectmen meetings are posted at the Town Hall, and the public is welcome to attend.



IMPORTANT INFORMATION

Town of Chatham Water Department

**Address: 221 Crowell Road
Chatham, Massachusetts 02633
William Redfield, P.E. – Director**

Phone Number: (508) 945-5150

Public Water System

Identification Number: (PWS ID#) 4055000

Weston & Sampson (Water System's Contract Operator)

**Address: 221 Crowell Road
Chatham, Massachusetts 02633**

Phone Number: (508) 593-4766

**Contact Person: Lynn Van Sant
Chief Water Facilities Operator**

Sources Of Supply:

The Chatham Water Department's water is supplied from nine (9) wells (groundwater sources) located within the boundaries of Chatham. These wells draw from the Monomoy Lens aquifer, one of six aquifers that make up the Cape Cod Sole Source Aquifer. The Chatham Water Department also maintains two water main interconnections with the Town of Harwich for use in an emergency. These connections, located on Route 28 and Old Queen Anne Road, were not used during 2009.

A Source Water Assessment Program (SWAP) Report was prepared in 2003 for the Chatham Water Department by the Department of Environmental Protection. This report evaluates the susceptibility of the water supply sources to contamination, and gives recommendations for improvement in the protection of groundwater and other factors that affect the Chatham water system's water quality.

The susceptibility of the Town's wells to contamination, as determined by the SWAP Report, is high. Wells # 1-3 and Training Field Well # 5 are susceptible to contamination due to the absence of hydrogeologic barriers (i.e. a clay layer) between the surface and the aquifer. Wells # 4, 6, 7, 8, & 9 are also rated highly susceptible based on the presence of at least one of the following high threat land use (i.e. gas stations, airports, machine shops, etc.) within these wells' Zone II, the water supply recharge areas for these wells.

The report cites land uses in Chatham's wells' recharge areas (Zone II) as primarily a mixture of forest and residential land uses with small areas of commercial, light industrial and waste disposal land uses. The Town adopted the Water Resource Protection Zoning Bylaws in 1996 for the protection of the water within all its Zone II areas. This bylaw limits the type of new or expanded land uses that are permitted within the Zone II areas. The report offers recommendations for further action in each area. Some of the recommendations include public education in water source protection, handling and disposing of hazardous materials, and identifying potential sources of contamination. The Chatham Water Department remains active in the protection of our water supply by: restricting use within 400 feet of the wells; working with industrial users to inform them as to the potential hazards of improper discharge of chemicals; and the dissemination of water supply protection practices material through articles in our newsletters, informational brochures, and discussions at our annual open house.

The full report is available for viewing at the Chatham Water Department and the report is available on the Water Department's web page of the Town's website, www.chatham-ma.gov.

For more information regarding the Source Water Assessment and Protection Report, call the Chatham Water Department at 508-945-5150.

Well Name	South Chatham Well 1	South Chatham Well 2	South Chatham Well 3	Indian Hill Well 4	Training Field Road Well 5	Tirrell's Way Well 6	Eben's Way Well 7	Training Field Road Well 8	Town Forest Well 9
DEP ID Number	4055000-1G	4055000-2G	4055000-3G	4055000-4G	4055000-5G	4055000-6G	4055000-7G	4055000-8G	4055000-9G
Location	2756 Main St. South Chatham	2756 Main St. South Chatham	2756 Main St. South Chatham	54 Indian Hill Road	128 Training Field Road	150 Tirrell's Way	65 Eben's Way	128 Training Field Road	2756 Main St. South Chatham

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 facilities, 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, DEP and EPA prescribe regulations that 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 (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 the 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).

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 at (1-800-426-4791).

Water Sampling Test Results:

How To Read The Table:

Our water is regularly tested to ensure that it is both biologically and chemically safe to drink. The water quality information presented in the tables below are from the most recent round of testing done in accordance with Federal and State regulations. All data shown was the results of our monitoring for the period of January 1st to December 31st, 2009, unless noted. Some of our data in the tables are more than one year old, since certain chemical contaminants are monitored less than once a year. Our sampling frequency complies with EPA and State drinking water regulations. The table only lists the levels of contaminants that were actually detected in the water. Testing that was completed but did not register a value for the substance is not shown.

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 (see below) 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 the 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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

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

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.

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

ppm = parts per million or milligrams per liter (mg/l)

ppb = parts per billion or micrograms per liter (ug/l)

pCi/l = picoCuries per liter (a measure of radioactivity)

N/A = Not Applicable

Microbiological Contaminants						
Contaminant	Date	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Sources of Contamination
Total Coliform	2/2-2/5/2009	6 of 88	5%	0	Y	Well # 2 which was taken off line
	6/1/2009	1 of 33	1	0	N	Naturally present in the environment
	7/7-7/14/2009	4 of 89	5%	0	N	Wells #1 or Well # 3
	9/14-9/16/2009	11 of 63	5%	0	Y	Naturally present in the environment

Explanation of Microbiological Violation (Total Coliform)

Duration February 2 through February 5, 2009
Health Effects Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
Cause The source of the bacteria was believed to be from Well # 2 in South Chatham.
Actions Taken Well # 2 will remain off line until an impervious layer is installed in the surrounding area to allow a longer percolating time for precipitation to enter the well. Repeat sampling through the end of February showed no evidence of coliform bacteria.

Duration September 14 through September 16, 2009
Health Effects Same as above.
Cause The source of the bacteria was suspected of be biofilm in the water storage tanks that sloughs off during the fall temperature change.
Actions Taken The Department took the 1.25 tank off line for painting and the 1.35 tank was chlorinated. The east side of town was flushed and blow offs were run. Repeat sampling through the end of September showed no evidence of coliform bacteria.

Disinfectants/Disinfection Byproducts							
Contaminant	Date Collected	Highest Detect Level	Range Detected	MCL	MCLG	Violation (Y/N)	Major Sources
Trihalomethanes (TTHM)	2/11/2009 4/2/2009	3.0 ppb	1.0 – 3.0 ppb	80 ppb	N/A	N	By-product of drinking water chlorination
				MRDL	MRDLG		
Chlorine	Monthly Feb-June 2009	1.08 ppm	0.0-1.08 ppm	4.0 ppm	4.0 ppm	N/A	Water additive used to control microbes

Inorganic Contaminants								
Contaminant	Date Collected	Highest Detect Value	Range Detected	Average Detect	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Nitrate	2/11/09 4/2/09 4/6/09	2.4 ppm	0.00-2.4 ppm	0.49 ppm	10 ppm	10 ppm	N	Runoff from fertilizer; Leaching from septic tanks; sewage; erosion of natural deposits; and atmosphere

Lead and Copper Date Tested – 7/17/2009							
Contaminant	90th Percentile	Action Level	MCLG	Number Of Sites Sampled	Number Of Sites Above Action Level	Violation (Y/N)	Possible Source of Contamination
Lead	9.0 ppb	15 ppb	0 ppb	30	2	N	Corrosion of household plumbing systems
Copper	.30 ppm	1.3 ppm	1.3 ppm	30	0	N	Corrosion of household plumbing system

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 Chatham 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>.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Unregulated Contaminants							
Contaminant	Date Collected	Highest Detect Value	Range Detected	Average Detect	SMCL	ORSG	Possible Source of Contamination
Sulfate	1/17/08	11 ppm	8-13 ppm	8.6 ppm	250 ppm	N/A	Natural Sources
Sodium	4/2/2009	14 ppm	14 ppm	14ppm	N/A	20 ppm	Natural sources; runoff from use as salt on road-ways; by-product of treatment process
Chloroform	4/2/09 4/6/09	2.0 ppb	0.0-2.0 ppb	1.0 ppb	N/A	N/A	Natural sources; by-product of water chlorination

Radioactive Contaminants							
Contaminant	Date Collected	Highest Detect Value	# of Samples Taken	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Gross Alpha Emitters	3/17/03	0.0 (+-1.4) pCi/L	One Sample	15 pCi/L	0 pCi/L	N	Erosion of Natural Deposits
Radon	4/14/03	160 pCi/L	One	N/A	0 pCi/L	N	Erosion of Natural Deposits
Radium - 226	3/17/03	0.0 (+-0.2) pCi/L	One Sample	5 pCi/L	0 pCi/L	N	Erosion of Natural Deposits
Radium - 228	3/17/03	0.6 (+-0.6) pCi/L	One Sample	5 pCi/L	0 pCi/L	N	Erosion of Natural Deposits

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be, in most cases, 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 increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Make repairs to reduce the amount of radon entering your home if the level of radon in your air is 4 PicoCuries per liter of air (pCi/L) or higher. For additional information, call your State radon program or call EPA's Radon Hotline, 800.SOS.RADON.

This report shows our water quality and what it means. The Chatham Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. We have learned through our monitoring and testing that some constituents have been detected, however, EPA has determined that your water is safe at these levels.

Additional Information:

Chatham is fortunate to be able to pump water that is of good quality from its groundwater sources. The water from Wells # 1, 2 & 3 has shown to be susceptible to contamination due to the shallowness of the wells. In June 2009 these three wells were shut down and will remain off line while the new chemical feed building is being constructed and an impervious layer is installed around the three wells. The water from Indian Hill Well # 4 has shown some Tetrachloroethylene (PCE) present in previous year's testing and for that reason the well is not typically used except in emergency situations. Indian Hill Well was last used on July 6, 1999, when there was a problem meeting high water use demand. When Well # 4 is used, PCE testing is performed daily to ensure that the maximum contaminant limit (MCL) for PCE, mandated by DEP and EPA, is not exceeded.

The Water Department adds potassium hydroxide to the water supplies at all of the wells except Well # 4 to raise the pH of the water to reduce plumbing corrosion. Polyphosphate is added at Wells # 2, 3, 5, 7, 8 & 9 for the sequestering of iron and manganese. Sodium hypochlorite is also added at Wells # 2, 3, 5, 6, 8 & 9 during our spring flushing program as a precautionary measure to kill any bacteria that may be stirred up as a result of the flushing program.

All chemicals used for water treatment are approved by one of the following organizations: National Sanitation Foundation (now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

The Chatham Water Department provides water conservation tips to its customers through articles in the "Chatham Water News", a newsletter that outlines the Department's activities, and is published and distributed to all of the Water Department's customers twice per year.