

Annual Drinking Water Quality Report

Town of Harwich Water Department
Harwich, Massachusetts



Issue 18
2014 Report
PPWS ID #4126000

The Harwich Water Department (HWD) is pleased to report that **Harwich water meets or exceeds required water quality standards**. This annual Consumer Confidence Report provides important water source data, monitoring, and test results. If you have questions about this report, contact Water Treatment Foreman, Neil Salzillo at 508-432-0304. Additional information is available at www.harwichwater.com and at the HWD office located at 196 Chatham Rd.

Regulated Contaminants		Tested	MCL	MCLG	Highest Avg. Detected	Range	Possible Source(s) of Contamination	Violation
Inorganic Contaminants								
Nitrate as N		2/27/14	10	10	1.6	0.8-2.5 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	No
Radioactive Contaminants								
Gross Alpha Activity (pCi/l)		7/26/12	15	---	0.4	0.13-1.4	Erosion of natural deposits	No
Radium – 226 & 228 (pCi/l)		7/26/12	5	---	0.5	0.03-0.85	Erosion of natural deposits	No
Microbiological Contaminants								
Total Coliform Bacteria		Weekly	5%	0	1	1	Naturally present in environment	No
Turbidity (NTU)		11/13/14	5	---	0.052	ND-0.33	Soil Runoff	No
Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality								
Disinfectants and Disinfection By-products								
Total Trihalomethanes (TTHMs) (ppb)		8/13/14	80	---	5.07	1.8-6.9	Byproduct of drinking water chlorination	No
Haloacetic Acids (HAA5) (ppb)		8/13/14	60	---	1.0	0.62-1.5	Byproduct of drinking water disinfection	No
			MRDL	MRDLG				
Chlorine (Free) (ppm)		Daily	4	4	0.71	0.02-0.71	Water additive used to control microbes	No
Volatile Organic Contaminants								
MTBE - Methyl Tertiary Butyl Ether (ppb)		3/6/2014	20-40	70	0.04	ND-0.62	Fuel additive; leads and spills from gasoline storage tanks.	No
Lead	Tested	90 th percentile	Action Level*	MCLG	# of sites samples	# of sites above Action Level*		
Lead (ppb)	8/2/12	0.00	15	0	37	0	Corrosion of household plumbing systems; Erosion of natural deposits	
Lead is tested in Harwich at 30 sites including 2 schools and daycare facilities every 3 years. The next test will be taken during 3 rd quarter 2015 sampling								
Unregulated Contaminants		Tested	SMCL	ORSG	Avg. Detected Level	Range	Possible Source	Violation
Bromoform (ppb)		8/13/14	---	---	1.5	ND-2.5	Trihalomethanes; byproduct of drinking water chlorination	No
Chloroform (ppb)		8/13/14	---	---	0.78-1.80	1.37	Byproduct of drinking water chlorination (regulated collectively with total TTHM's; in non-chlorinated sources, chloroform may naturally occurring)	No
Dibromochloromethane (ppb)		8/13/14	---	---	1.63	0.63-2.5	Trihalomethanes; byproduct of drinking water chlorination.	No
Inorganic Contaminants								
Sodium (ppm)		7/22/14	No Standard	28	26	22-30	Road Salt	No
Secondary Contaminants								
Sulfate (ppm)		12/18/2014	250	250	10.1	6.9-13.0	Natural Sources	No
Chloride (ppm)		11/18/14	250	250	33.45	28.0-45.0	Chlorides are leached from various rocks into soil and water by weathering	No
Iron (Total) (ppm)		12/18/2014	0.3	---	0.059	ND-42	Naturally present in the environment	No
Manganese (Total) (ppm)		8/20/2014	0.05	---	0.025	ND-.19	Naturally present in the environment	No
EPA has established a lifetime health advisory (HA) of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10 HA of 1000 ppb for acute exposure								
Copper	Tested	90 th percentile	Action Level*	MCLG	# of sites samples	# of sites above Action Level*	Possible Source	
Copper (ppm)	8/2/12	0.52	1.3	1.3	37	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives	
TABLE DEFINITIONS					TABLE MEASURES			
<p>Lead and Copper 90th Percentile - Out of every 10 homes sampled, 9 were at or below this level.</p> <p>Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.</p> <p>Massachusetts Office of Research and Standards Guidelines (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, with a margin of safety. If exceeded, it serves as an indicator of the potential need for further action.</p> <p>Maximum Contaminant Level Goal or MCLG: The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.</p> <p>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.</p> <p>Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MGLGs as feasible using the best available treatment technology.</p>					<p>Nephelometric Turbidity Unit (NTU): A measure of the clarity (or cloudiness) of water.</p> <p>Treatment Technique (TT): a required process intended to reduce the level of a contaminant in drinking water.</p> <p>Maximum Residual Disinfectant Level Goal (MRDLG): The level of 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.</p> <p>Secondary Maximum Contaminant Level (SMCL): These standards are developed to protect the aesthetic qualities of drinking water and are not health based.</p> <p>ppm = parts per million, or milligrams per liter (mg/l)</p> <p>ppb = parts per billion, or micrograms per liter (ug/l)</p> <p>pCi/l = picoCuries per liter (a measure of radioactivity)</p> <p>ND = Not Detected</p> <p>--- = Not Applicable</p>			

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

*corrected 7/27/15

****Successful adoption of land use controls and past sampling results, MassDEP has reduced the monitoring requirements for synthetic organic contaminant for Harwich because the source is not at risk of contamination. The last sample collected for these contaminants was taken on 8/20/14 and was found to meet all applicable US EPA and MassDEP standards.***

Harwich Water System & Source

The drinking water supply for the Town comes from 14 gravel packed wells. Wellfields are located in South, East and North Harwich, and draw water from the Monomoy Lens Aquifer. These 14 wells **751,753,322 gallons in 2014**. The sand and gravel act as a huge underground reservoir, which is continually replenished by rainfall and snowmelt. The wells have a high susceptibility to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent contaminant migration. After the water is pumped from the ground, it is treated with the chemicals Sodium Hydroxide (NaOH) and Sodium Hypochlorite (Chlorine). NaOH is added at very low concentrations to increase the pH of the water and reduce its natural corrosivity. Low pH can stain plumbing fixtures and degrade the water quality by leaching copper and lead out of private services. The water treatment plant improves water quality by removing dissolved iron and manganese from the water supply.

Name	MASSDEP ID	Source Type	Location
Wells 1 thru 3	4126000-01G	Groundwater	Off Chatham Rd
Well 2	4126000-02G	Groundwater	Off Chatham Rd
Well 3	4126000-03G	Groundwater	Off Chatham Rd
Main Station	4126000-04G	Groundwater	Off Chatham Rd
Well 4	4126000-05G	Groundwater	Off Chatham Rd
Well 5	4126000-06G	Groundwater	Off Depot Rd
Well 6	4126000-07G	Groundwater	Off Depot Rd
Well 7	4126000-08G	Groundwater	Off Depot Rd
Well 8	4126000-09G	Groundwater	Off Bay Rd
Well 9	4126000-10G	Groundwater	Off Bay Rd
Well 10	4126000-11G	Groundwater	Off North Westgate Rd

Monomoy Lens Aquifer

The large Monomoy ponds (Long, Seymour and Hinckley) receive groundwater discharge from the lens, which then feeds the Herring River so that groundwater ultimately discharges into Nantucket Sound. The Monomoy Lens is the 2nd largest of the six mounds or cells of elevated groundwater that comprise the aquifer. The lens supplies generally excellent drinking water from its porous sand and gravel deposits. The water is considered “soft” due to the lack of calcium and magnesium. Municipal water supplies are treated to neutralize the pH. Naturally occurring iron and manganese can cause staining, odor and taste problems. Sodium chloride can be elevated in coastal areas due to salt spray or saltwater intrusion.

Regulations and Limits—DEP, EPA, FDA, DPH

In order to ensure that tap water is safe to drink, the MassDEP and US 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. 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 1-800-426-4791.

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 for infections. These people should seek advice from their health agents about drinking water. EPA/Centers for Disease Control and Prevention (DC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are also available from the Safe Drinking Water Hotline 1-800-426-4791.

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, and 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.

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. Harwich 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>.

Source Water Assessment Program (SWAP Report)

MassDEP prepared a Source Water Assessment (SWAP) Report for the water supply sources serving Harwich. Since there are a number of land uses and activities that are potential sources of contamination, Harwich has a high susceptibility ranking. SWAP notes the following key issues for our sources; inappropriate activities in Zone I areas, residential land uses and activities, storm water pollution, transmission line right-of-way, and transportation corridor within Zone IIs, and comprehensive wellhead protection planning for Zone IIs. The complete SWAP Report is available at the HWD and online at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/sero/swap-sero.pdf>

Cross Connections

A cross connection is formed at any point where a drinking water line connects with any equipment or system containing chemicals or water of questionable quality such as irrigation systems or boilers. HWD recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. Such devices can be found at your local hardware store. This is a great way for you to help protect the water in your home as well as the drinking water supply. For more information on our cross connection program, visit: www.harwichwater.com.

Unregulated Contaminants

Unregulated contaminants are those of which the EPA has not established drinking water standards. Monitoring assists the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Iron & Manganese

Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, it is preferable that the iron and manganese be removed.