

# 2017 Annual Drinking Water Quality Report

For

## Chester Water Department

DEP PWS ID # 1059000

This report is a snapshot of drinking water quality that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards. We are committed to providing you with information because informed customers are our best allies.

### I. PUBLIC WATER SYSTEM INFORMATION

Address: 15 Middlefield Road

Contact Person: Patricia Carlino

Telephone #: 413-354-7760

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Internet Address: <http://www.townofchester.net/chestermass/>

#### Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). The MassDEP inspects our system for its technical, financial and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by a Massachusetts certified operator who oversees the routine operations of our system. The water operator checks the treatment plant, tests the water, and records data every day of the year including weekends and holidays.

#### Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the meetings of the Water Board, held on the second and fourth Monday of the month. The Water Commissioners are John Baldasaro, Barbara Huntoon and Rene Senecal. The Commissioners ask that you call and make an appointment so enough time would be provided for you. In the event of an emergency during the day please call the Water Department first at 413-354-7760, and then each Commissioner. If you are unable to reach the office or the Commissioners, please call the Primary Water Operator, Bernard St. Martin at 413-207-1112.

### II. YOUR DRINKING WATER SOURCE

#### Where Does My Drinking Water Come From?

The Chester Water System is supplied by two reservoirs known as Austin Brook Reservoir and Horn Pond Reservoir. The main reservoir is Austin Brook, which is located one mile west of the center of town. Horn Pond Reservoir is located in Becket and flows by gravity through a pipe to the Water Treatment Plant located next to the Austin Brook Reservoir. Each source is used independently and selected to provide the best quality raw water to the filter plant.

#### How Are These Sources Protected?

The MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The SWAP Report assesses the susceptibility of public water supplies. *The complete SWAP report is available in the selectman's office at the Town Hall call Chester Water Department at 413-354-7760.*

**It is imperative that all persons who are on the water system take responsibility for the safety of the water in their charge. If you have a problem with the plumbing in your charge, please see to it that it is repaired in a timely manner to reduce the cost of wasted water. This water has been filtered and the required additives added per government regulations. If you become aware of a problem in the system, such as a line break or leaky service connection, please contact the Water Department immediately**

#### Is My Water Treated?

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants. We use slow sand filtration for treatment of the raw water. Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors

or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to pass it through a sand filter bed that has several feet of sand. Water is applied to the top of the filter and passes slowly through the sand. This traps most of the particles. By the time the water reaches the bottom of the filter, better than 90 percent of all impurities have been removed. Over time, the sand filter starts to clog. When this happens, it is necessary to remove the top portion of the filter.

Sodium hypochlorite is injected into the water for disinfection purposes to protect you against microbial contaminants. Upon discharge to the water system, sodium hydroxide is injected into the water so that it will be less corrosive to the distribution pipes and household plumbing.

The water quality of our system is constantly monitored by us and the DEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

### III. SUBSTANCES FOUND IN DRINKING 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, and farming.

Pesticides and herbicides -which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants -including synthetic and volatile organic chemicals, can be by-products of industrial processes (including source water disinfection) or natural degradation reactions, and can originate from gas stations, urban stormwater runoff, septic systems, etc.

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 (DEP) and U.S. Environmental Protection Agency (EPA) prescribe 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).

### IV. 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.

MRDLG's 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 that a water system must follow.

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

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

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

ppb = parts per billion, or micrograms per liter (ug/l)  
 ppt = parts per trillion, or nanograms per liter  
 pCi/l = picocuries per liter (a measure of radioactivity)  
 NTU = Nephelometric Turbidity Units  
 ND = Not Detected  
 N/A = Not Applicable  
 mrem/year = millirem per year (a measure of radiation absorbed by the body)

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.

**V. WATER QUALITY TESTING RESULTS**

**What Does This Data Represent?**

The water quality information presented in the table(s) are from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table(s)

Lead and Copper	Date Collected	90 <sup>th</sup> Percentile	Action Level (AL)	MCLG	# of Sites Sampled	# of Sites Above the AL	Exceeds AL?	Possible Sources
Lead (ppb)	9/7/17	0.015	15	0	10	0	no	Corrosion of household plumbing
Copper (ppm)	9/7/17	1.3	1.3	1.3	10	0	no	Corrosion of household plumbing

*"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. Chester 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>."*

**Turbidity is monitored to evaluate the slow sand filter performance**

Contaminant	MCL	MCLG	Level Found	Range of Detections	Violation	Date of Sample	Typical Source of Contaminant
Turbidity	TT = 5 NTU	n/a	.18	0.0-.1.0	no	continuous-	Organics
	TT=percentage of samples <0.5 NTU		100%	-			

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	Highest Average	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants								
Nitrate (ppm)	6/13/17	0.07	-	-	10	10	No	

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 Contaminant	Date(s) Collected	Result or Range Detected	Possible Source
<b>Inorganic Contaminants</b>			
Sodium (ppm)	6/13/17	8.6	Natural sources; runoff from use as salt on roadways; by-product of treatment process

### Disinfection and its By-Products

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	Highest Average	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contaminant
Total Trihalomethanes (TTHMs) (µg/l)	Quarterly	100	2.26 100	100 3rd quarter	80	----	No	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (µg/l)	Quarterly System Wide RAA	90.00	2.79 – 90.00	42.5 1st quarter	60	----	No	Byproduct of drinking water disinfection
Chlorine (ppm)	continuous	1.7	0.2-1.7	----	4	4	No	Water additive used to control microbes

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source	
<b>Secondary Contaminants</b>							
Iron (ppb)	11/26/17	.320	.450	300	None	Naturally occurring, corrosion of cast iron pipes	
Manganese* (ppb)	11/26/17	.028	.190	50	Health Advisory = 300 ppb	Erosion of natural deposits	
<b>Radioactive Contaminants</b>	<b>Date(s) Collected</b>	<b>Highest result</b>	<b>Range detected</b>	<b>MCL</b>	<b>MCLG</b>	<b>Violations</b>	<b>Possible Source of contamination</b>
Gross Alpha (pCi/l) (minus uranium)	7/21/15	0.878	N/A	15	0	No	Erosion of natural deposits
Radium 226 & 228 (pCi/L) (combined values)	7/21/15	0.949	N/A	5	0	No	Erosion of natural deposits

## VI. COMPLIANCE WITH DRINKING WATER REGULATIONS

### Does My Drinking Water Meet Current Health Standards?

#### Drinking Water Violations

We are committed to providing you with the best water quality available. We are required to monitor our drinking water for specific contaminants on a regular basis. Results of regular monitoring are indicators of whether or not

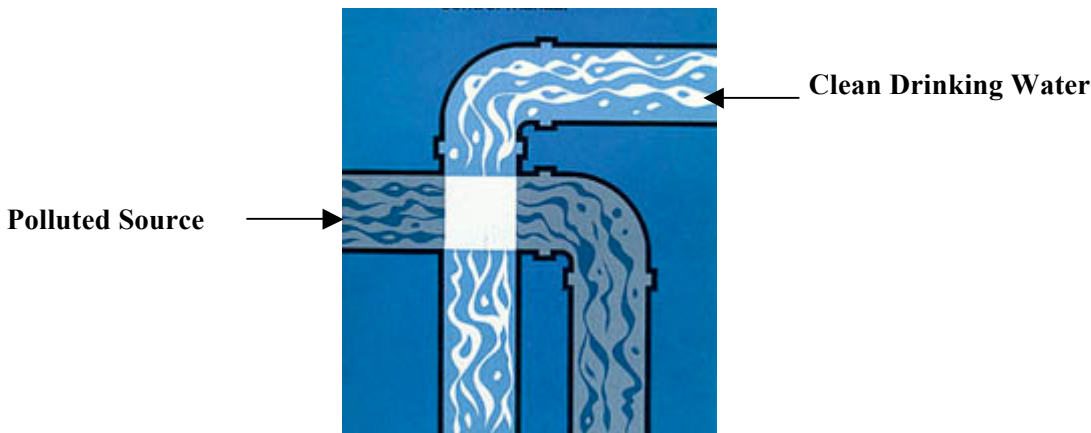
our drinking water meets health standards. Sampling from approved locations is necessary to ensure that the locations with the greatest likelihood of contributing lead and copper to the drinking water supply are evaluated and compared to lead and copper action levels that could pose a health risk.

We are required to submit to Mass DEP a monthly chemical addition report that documents the daily performance of our disinfection system. In addition, as a public water supply with a surface water source, we are required to monitor for disinfectant residual in the distribution system and report this information on our chemical addition report. This measurement tells us whether we are effectively disinfecting the water supply. Disinfectant residual is the amount of chlorine or related disinfectant present in the pipes of the distribution system. If the amount of disinfectant is too low, organisms could grow in the pipes. For compliance purposes, we are required to report this daily data to MassDEP.

There were no violations that we are aware of for 2015.

## VII. EDUCATIONAL INFORMATION

**Cross Connections are Hazardous to our Drinking Water**  
**Please help us protect our Drinking Water by eliminating Cross Connections**



### **What is a Cross Connection and 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, 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 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 Chester Water Department 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, please contact the Water Department at 413 354-7760.