

2021 Annual Drinking Water Quality Report
For
Hillcrest Water District
Leicester, Massachusetts
MASSDEP PWSID # 2151002

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: P.O. Box 317 Leicester, MA 01524

Contact Person: Joseph H. Wood, Superintendent

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Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). 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 Massachusetts Licensed operators who oversee routine operations of our system. As part of our ongoing commitment to you, over recent years, we made the following improvements to the system. In 2020, the District completed the construction of a new water tank just off Lehigh Road.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the following meetings or educational events: monthly Commissioner meetings usually held on the second Tuesday of the month and our Annual Meeting held every second Tuesday in May. During 2021 this meeting occurred on May 19, 2021.

2. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

Your water is provided by the following sources listed below:

Source Name	MassDEP Source ID#	Source Type	Location of Source
Well #1	2151002-01G	Groundwater	Lehigh Road

Is My Water Treated?

- We add a solution of sodium hypochlorite as a disinfectant to protect you against microbial contaminants.
- We filter the water to remove iron and manganese
- We filter the water to remove arsenic.
- We filter the water to remove uranium and other naturally occurring radionuclides.

Our water system makes every effort to provide you with drinking water meeting regulatory standards. To improve the quality of the water delivered to you, we treat it to remove contaminants.

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

How Are These Sources Protected?

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.

What is My System's Ranking?

A susceptibility ranking of Moderate was assigned to this system using the information collected during the assessment by MassDEP.

Where Can I See The SWAP Report?

The complete SWAP report is available at Hillcrest Water District offices, 124 Pine Street, Leicester, MA 01524 and online at <https://www.mass.gov/service-details/the-source-water-assessment-protection-swap-program>. For more information, call Joseph Wood at (508) 892-7585

What Can Be Done To Improve Protection?

Residents can help protect sources by:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives at the next town/annual meeting
- Taking hazardous household chemicals to hazardous materials collection days
- Contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools
- Limiting pesticide and fertilizer use, etc.

3. 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, 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, 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 Massachusetts Department of Environmental Protection (MassDEP) 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).

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. Hillcrest Water District 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>.

4. 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.

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

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

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

Unregulated Contaminants

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

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.

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

Running Annual Average (RAA) – The average of four consecutive quarter of data.

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 expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Level 1 Assessment - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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 = milliremms per year (a measure of radiation absorbed by the body)

5. WATER QUALITY TESTING RESULTS

What Does This Data Represent?

The water quality information presented in the table(s) is 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)

	Date(s) Collected	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	9/8/21	4.2	15	0	15	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	9/8/21	0.18	1.3	1.3	15	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

“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. Hillcrest Water District 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>.”

Total Coliform Bacteria- Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. The District did not detect any coliforms throughout 2021 testing assessments.

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants (IOCs)							
None detected in the samples collected							
Synthetic Organic Contaminants (SOCs)							
None detected in the samples collected							
Volatile Organic Contaminants (VOCs)							
None detected in the samples collected other than disinfection byproducts							
Radioactive Contaminants							

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Gross Alpha (pCi/L) (minus uranium)	1/28/21 8/25/21	0.453	ND- 0.453	15	0	N	Erosion of natural deposits
Radium 226 & 228 (pCi/L) (combined values)	1/28/21	1.365	1.365	5	0	N	Erosion of natural deposits
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	2/9/21 5/11/21 8/10/21 11/9/21	11.2	7.45 – 11.2	80	N/A	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	2/9/21 5/11/21 8/10/21 11/9/21	1.44	ND-1.44	60	N/A	N	Byproduct of drinking water disinfection
Chlorine (ppm) (free, total or combined)	Monthly	0.73	0.27 – 0.73	4	4	N	Water additive used to control microbes
Per- and Polyfluoroalkyl Substances (PFAS)							
Per- and Polyfluoroalkyl Substances (PFAS) sampled on 10/21/2021 and PFAS were not detected in the water from the Hillcrest Water District well.							

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.

Unregulated Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Bromodichloromethane (ppb)	6/16/21	1.64	1.64	N/A	N/A	Trihalomethane; by-product of drinking water chlorination
Bromoform (ppb)	6/16/21	2.25	2.25	N/A	N/A	Trihalomethane; by-product of drinking water chlorination
Chloroform (ppb)	6/16/21	0.79	0.79	N/A	70	By-product of drinking water chlorination (In non-chlorinated sources it may be naturally occurring)
Sodium (ppm)	6/24/20	20.5	20.5	N/A	20	Discharge from the use and improper storage of sodium-containing de-icing compounds or in water-softening agents
Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Manganese* (ppb)	6/16/21	2.4	2.4	50	Health Advisory of 300	Natural sources as well as discharges from industrial uses

* EPA has established a lifetime Health Advisory (HA) for manganese of 0.3 mg/L and an acute HA at 1.0 mg/L

6. COMPLIANCE WITH DRINKING WATER REGS

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. Contaminants that were tested last year met all applicable health standards regulated by the state and federal government.

Our Operators constantly monitor the water system along with the MassDEP. We record the quantity of treatment chemicals added at the water treatment plant and their effect on finished water quality. Sodium Hypochlorite was added to the finished water from the water treatment plant to maintain system wide chlorine residuals and inhibit bacterial growth in the drinking water.

Samples were collected and analyzed in accordance with the MassDEP Drinking Water Program Sampling Program for the Hillcrest Water District. There were no water quality violations for 2021.

Health Effects Statements

Total Coliform: Coliform are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present in drinking water. If coliform bacteria are found in more test samples than allowed by state and federal standards, it is a warning of potential bacteria problems in the supply finished water. No coliform bacteria were detected in a water system sample for the year 2021 in the distribution system.

Most well water in Leicester contains at least trace concentrations of Arsenic. The District treats for removal of arsenic from Well 01G. The literature indicates that some people who drink water containing arsenic in excess of the MCL over many years could experience damage to their skin or experience problems with their circulatory system. It is also possible that there would be an increased risk of getting cancer.

7. EDUCATIONAL INFORMATON

Do I Need To Be Concerned About Certain Contaminants Detected In My 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. Hillcrest Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components of customer's houses. 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>.

Arsenic: While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral know to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Trihalomethanes (THM's): occur when naturally-occurring organic and inorganic materials in the water react with the disinfectants, chlorine and chloramine. Some people who drink water containing total trihalomethanes in excess of the MCL over many years could experience liver, kidney, or central nervous system problems and increased risk of cancer.

Haloacetic acids (HAA's): occur when naturally-occurring organic and inorganic materials in the water react with the disinfectants, chlorine and chloramine. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Uranium: Exposure to uranium in drinking water may result in toxic effects to the kidney. Some people who drink water containing alpha emitters, such as uranium, in excess of the MCL over many years may have an increased risk of getting cancer.

8. ADDITIONAL INFORMATION

Preventing backflow is an important part of maintaining a healthy water supply. The Hillcrest Water District's water distribution system is designed to carry water from the water treatment plant to the consumer. If cross connections, or connections between potable water in the distribution system to any non-potable water exist, these connections make the water distribution system susceptible to a backflow condition. A water system backflow is a reversal of water flow from its intended direction. In other words, non-potable water could be introduced into the distribution system.

There are two types of backflow:

- **Backpressure backflow**, which occurs when the pressure outside the water distribution system exceeds the pressure within the system.
- **Backsiphonage**, which occurs when a partial vacuum is created in the system sucking non-potable water back into it.

Three Common Types of Backflow Prevention Devices for Water Systems

Pressure Vacuum Breaker

Pressure Vacuum Breaker.

This device is approved for irrigation systems, however it is rarely used because it is usually installed above ground and would be subject to freezing during winter months. This device is also approved for chemical injection systems on sprinklers. The irrigation system can be turned off at 1 of 2 shut off handles.



Atmospheric Vacuum Breaker

Atmospheric Vacuum Breaker.

This device is commonly found on older sprinkler systems, but is not approved for new installations because it is not testable. This device must be replaced with a Double Check Valve when upgrading an irrigation system. There are no shut off handles to isolate irrigation system.

Double Check Valve

Double Check Valve.

The Double Check Valve is the most widely used backflow prevention device on sprinkler systems. It is installed below grade in a standard valve box. The irrigation system can be turned off at 1 of 2 shut off handles.

Simple Steps to Prevent Backflow:

- Guard against cross connections. A garden hose is a direct connection to the drinking water in the home. Don't attach chemical sprayers or leave a garden hose submerged in a swimming pool. (Hose Bibb Vacuum Breakers may also be installed on garden hoses)
- Make sure backflow prevention device is installed on your home sprinkler system. Common devices are Double Check Valve Assemblies and Pressure Vacuum Breakers.

