2019 Consumer Confidence Report For East Brookfield Water Department East Brookfield, Massachusetts MASSDEP PWSID # 2084000

This report is a snapshot of the 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 this information because informed customers are our best allies.

PUBLIC WATER SYSTEM INFORMATION

Address: PO Box 460, 424 East Main St. East Brookfield, Ma 01515

Primary Operator: Joseph R. Kenney, Superintendent.

Telephone #:508-867-6575

Email: ebwater@eastbrookfieldma.us

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 a Massachusetts certified operator who oversees the routine operations of our system. As part of our ongoing commitment to you, last year we made the following improvements to our system:

- Adding a Sodium Hypochlorite injection system to help protect against microbial contaminants.
- Routine hydrant flushing program to remove precipitated Iron and Manganese.
- Implement a Hydrant and Valve Maintenance Program.
- Applied for funding through the Drinking Water State Revolving Fund Program for Water Main Replacement and Well House Upgrades.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend Water Commission meetings posted in advance at Town Offices.

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
West St. Well	2084000-01G	Groundwater	Off of Podunk Rd.

Is My Water Treated?

- We add a disinfectant (Sodium Hypochlorite) to protect you against microbial contaminants.
- We add Potassium Hydroxide for corrosion control, elevates the pH, making the water less corrosive.

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

Our water system makes every effort to provide you with safe and pure drinking water. The water quality of our system is constantly monitored by us and MassDEP to determine if any treatment may be required. Prior water quality test results show that the water needs to be treated to continue to meet these goals. To improve the quality of the water, our system is looking into the installation of a treatment technique to reduce the levels of Iron and Manganese.

How Are These Sources Protected?

The East Brookfield Water Department owns, maintains, and preforms routine inspections of Zone 1. Zone 1 has a radius of 400' surrounding the public water supply wellhead.

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 high 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 The East Brookfield Water Department located at 424 East Main St. and online at <u>https://www.mass.gov/service-details/the-source-water-assessment-protection-swap-program</u>. For more information, call Joseph Kenney Superintendent, East Brookfield Water Dept. at 508-867-6575.

Residents can help protect sources by:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives at the next town 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.

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:

<u>Microbial contaminants</u> -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, and farming.

<u>Pesticides and herbicides</u> -which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

<u>Organic chemical contaminants</u> -including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

<u>Radioactive contaminants</u> -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 (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. Immunocompromised 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. East Brookfield 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.

IMPORTANT DEFINITIONS

<u>Maximum Contaminant Level (MCL)</u> – 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.

<u>Maximum Contaminant Level Goal (MCLG)</u> –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.

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

<u>Secondary Maximum Contaminant Level (SMCL)</u> – 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.

<u>Massachusetts Office of Research and Standards Guideline (ORSG)</u> – 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.

<u>Treatment Technique (TT)</u> – 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.

<u>Maximum Residual Disinfectant Level (MRDL)</u> -- 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.

<u>Maximum Residual Disinfectant Level Goal (MRDLG)</u> -- 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 = millirems per year (a measure of radiation absorbed by the body)

What Does This Data Represent?

WATER QUALITY TESTING RESULTS

The water quality information presented in the table 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.

Mass DEP has reduced the monitoring requirements for inorganic contaminants, because the source is not at risk of contamination. The last sample collected for these contaminants was taken on and was found to meet all applicable US EPA and Mass DEP standards.

	Date(s) Collected	90 ^{⊤н} percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	9/6/2017	.042	15	0	10	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	9/6/2017	.0213	1.3	1.3	10	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

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								
Arsenic (ppb)	6/21/2018	<4	-	10	N/A	N	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	
Nitrate (ppm)	5/06/2019	0.0816	-	10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	
Nitrite (ppm)	6/21/2018	<0.0100	-	1	1	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	
Perchlorate (ppb)	8/12/2019	ND	ND- 0.014	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents	

Volatile Organic Contaminants									
Tetrachloroethylene (PCE) (ppb)	5/06/2019	<0.50	-	5	0	N	Discharge from factories and dry cleaners; residual of vinyl-lined water mains		
Radioactive Contamin	Radioactive Contaminants								
Gross Alpha (pCi/l) (minus uranium)	4/8/2015	0.99	-	15	0	N	Erosion of natural deposits		
Radium 226 & 228 (pCi/L) (combined values)	4/8/2015	0.45	-	5	0	N	Erosion of natural deposits		
Disinfectants and Disinfection By-Products									
Chlorine (ppm) (free, total or combined)	Daily	.14	0.1-1.05	4	4	N	Water additive used to control microbes		
Total Trihalomethanes (TTHMs) (ppb)	9/25/2019	4.3	2.3-4.3	80	N/A	N	Byproduct of drinking water disinfection		
Halo acetic Acids (HAA5) (ppb)	9/25/2019	ND	N/A	60	N/A	N	Byproduct of drinking water disinfection		

Unregulated and Secondary Contaminants

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	
Manganese* (ppb)	1/07/2019- 12/09/2019	412- 461	434	50	300	Erosion of natural deposits	
* US EPA has established a lifetime health advisory (HA) value of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1000 ppb for acute exposure.							
Sodium (ppm)	6/21/2018	16.5	N/A	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
Chloride (ppm)	12/20/2017	39.2	-	250	250	Runoff and leaching from natural deposits; seawater influence
Iron (ppb)	1/07/2019- 12/09/2019	561- 679	640	300	N/A	Naturally occurring, corrosion of cast iron pipes
Manganese* (ppb)	1/07/2019- 12/09/2019	412- 461	434	50	Health Advisory of 300	Natural sources as well as discharges from industrial uses
* EPA has established a lifetime	Health Advisory	(HA) for ma	nganese of 0	.3 mg/L and a	an acute HA a	t 1.0 mg/L
Odor (T.O.N.)	12/20/2017	1		3	N/A	Erosion of natural deposits; Leaching from wood preservatives0
рН	Daily			6.5-8.5	N/A	Runoff and leaching from natural deposits; seawater influence
Total Dissolved Solids (TDS) (ppm)	12/20/2017	25.7	-	500	N/A	Erosion of natural deposits.

Manganese is a naturally occurring mineral found in rocks, soil, 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 (microgram per liter), or 50 parts per billion. In addition, MassDEP's Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese. **Drinking water may** naturally have manganese and, when concentrations are greater than 50 ug/L, the water maybe discolored and taste bad. Over a lifetime, the EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about the possible neurological effects. Children up to one 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. The ORSG differs from the EPA's health advisory because it expands the age group to which a lower manganese concentration applies from children less than six months of age to children up to one year of age to address concerns about children's susceptibility to manganese toxicity. See EPA Drinking Water Health Advisory for manganese at: https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research

6. COMPLIANCE WITH DRINKING WATER REGS

Notification of sampling program participants violation (consumer notification)	Monitoring period and deadlines	Regulatory Citation	Public Notice Requirement
Failure to provide notice of the results from lead and copper tap water monitoring to persons served at the specific sampling site from which the sample was taken (e.g. to the occupants of the residence or building) within 30 days after the public water system learns of the results. PWS delivered Consumer notices late to participants (date delivery reported completed Nov. 27, 2017). Laboratory reported results on Sept. 15, 2017	June 1-Sept.30, 2017 CN delivery to participants: Oct, 15, 2017	310 CMR 22.06(6)(c)	Must include the Notice of Noncompliance in consumer confidence report

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government.

Health Effects Statements

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See EPA Drinking Water Health Advisory for manganese at: <u>https://www.epa.gov/sites/production/files/2014-</u> 09/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research and Standards (ORSG) for manganese <u>http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-</u><u>drinking-water.html#11</u>

EDUCATIONAL INFORMATON

Do I Need To Be Concerned about Certain Contaminants Detected in My Water?

7.

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.

Cross-Connection Control and Backflow Prevention

The East Brookfield Water Department makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted via deep wells from underground aquifers or withdrawal point from a surface water source, throughout the entire treatment and distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross-connection? If so, how?

What is a cross-connection?

A cross-connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping arrangements or equipment that allows the drinking water to come in contact with non-potable liquids, solids, or gases (hazardous to humans) in event of a backflow.

What is a backflow?

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (back pressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand causing the water to flow backward inside the water distribution system (back siphonage). Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.



in potable system.



Back Siphonage:



Normal pressure in non-potable system.

8

What can I do to help prevent a cross-connection?

Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

If you are the owner or manager of a property that is being used as a commercial, industrial, or institutional facility you must have your property's plumbing system surveyed for cross-connection by your water purveyor. If your property has NOT been surveyed for cross-connection, contact your water department to schedule a cross-connection survey.

Example 2: 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 at the same time you turn on the hose, the fertilizer may be sucked back into the drinking water pipes through the hose. This problem can be prevented by using an attachment on your hose called a backflow-prevention device.

The East Brookfield 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 systems cross connection program, please contact Joseph Kenney Superintendent, 508-867-6575.

8. ADDITIONAL INFORMATION