

# 2024 Annual Water Quality Report

## West Brookfield Water Department

PWS ID #2323000

### TO OUR RESIDENTS

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2024. This report will summarize the departments water quality tests for calendar year 2024, and provides information on the source of your drinking water, how it is treated, and other useful information.

We have been working closely with our partners at the Massachusetts Departments of Environmental Protection and Public Health to make every effort to reduce the risk of lead at the tap to protect the health of the children in our town. More information on lead can be found in this report.

In the spotlight this year is polyfluoroalkyl substances or more commonly known as PFAS. Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. For more information about this please see the section in this report on PFAS.

The Water Department is dedicated to protecting public health and upholding the public's trust in their drinking water every day. Please contact us if you have any questions or concerns about your water quality. **If you would like a printed copy, or if you have any questions or comments regarding our report, please contact us at:**

#### Board of Commissioners:

Robert Benson - Chairman

Philip Guerin

Lester Paquette

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### IMPORTANT HEALTH INFORMATION

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 infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>**

*Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.*

*Questo rapporto contiene informazioni importanti che riguardano la vostra acqua potabile. Traducetelo, o parlate con una persona qualificata in grado di spiegarvelo.*

*Ce rapport contient des informations importantes à propos de votre eau potable. Demander à quelqu'un de traduire ces informations pour vous ou discuter avec une personne qui comprend ces informations.*





## WHERE DOES MY WATER COME FROM?

Your water is provided by five well sources. Well #1 is filtered, while Well #2R, Well Blend, Well #3R, Well#4R and Well #5R are not. Sources vary during certain times of the year between Well #1, Well #2R, Well #3R, Well#4R, and Well#5R and interconnections between West Brookfield and Brookfield's water system.

West Brookfield owns the land around our Wells and with a by-law restricts activities that can contaminate it. Protecting this precious resource is also your responsibility. Please call the West Brookfield Water Department at (508) 867-1421 Ext. 8 if you observe any activity that could contaminate our drinking water supplies.

In order to ensure tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

The 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. Substances 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 or wildlife;
- **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban storm water 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 agriculture, urban storm water runoff and residential uses;
- **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which may also come from gas stations, urban storm water runoff and septic systems;
- **Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

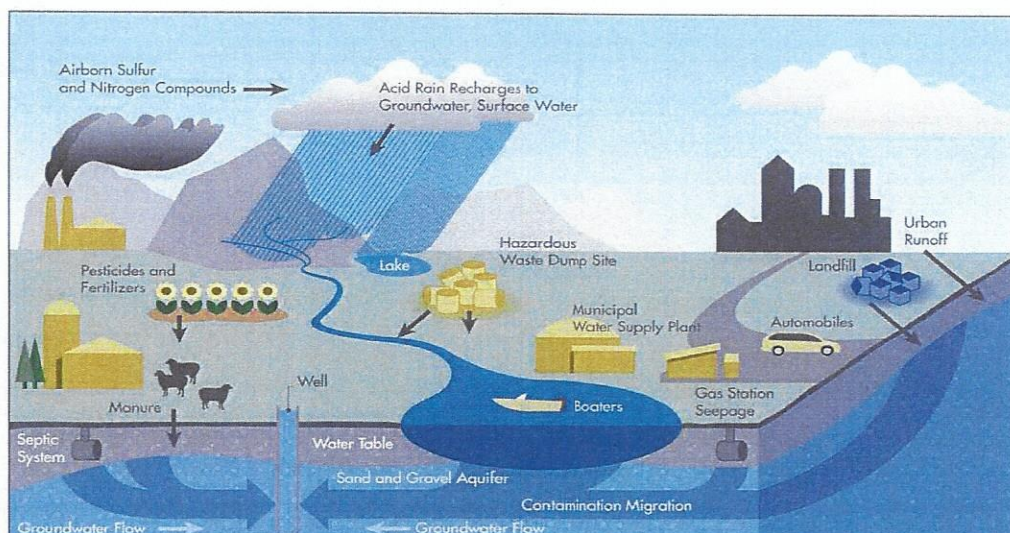


# Manganese and Nitrate in Drinking Water

**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 a limit of 50ug/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 50ug/L, the water may be 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 300ug/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 ages 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](https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf) and MassDEP Office of Research and Standards (ORSG) for manganese <http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#11>

**Nitrate** in drinking water at levels above 10ppm is a health risk for infants less than six months old. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.



## SWAP (Source Water Assessment and Protection)

The Source Water Assessment and Protection (SWAP) Program, established under federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

The MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the West Brookfield Water Department. The report assesses the susceptibility of public water supplies to contamination and makes recommendations.

A susceptibility ranking of **high** was assigned to our water source.

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area. A source's susceptibility to contamination does *not* imply poor water quality.

This report is available from the West Brookfield Water Department, the Board of Health and also at the MassDEP website: <https://www.mass.gov/doc/west-brookfield-water-department-swap-report/download>

If you have any questions, please contact the West Brookfield Water Department at (508) 867-1421 Ext. 8



## 2024 SAMPLING RESULTS

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### 2024 Water Quality Data from the West Brookfield Water Department

REGULATED CONTAMINANTS							
Parameter (UNITS)	Year Sampled	MCLG	MCL	Amount Detected	Range Low-High	Violation (Y/N)	Typical Source
Barium (ppm)	2024	2	2	0.011	0.010-0.011	N	Erosion of natural deposits
Haloacetic Acids-HAA5 (ppb)	2024	N/A	60	5.7	5.7	N	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Nitrate (ppm)	2024	10	10	1.31	0.30-1.31	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2024	N/A	2	0.170	ND - 0.170	N	Rocket propellants, fireworks, munitions, flares, blasting agents
PFAS6 (ppt)	2024	N/A	20	4.6	4.0-4.6	N	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing these PFAS, such as fire-fighting foams.
Total Coliform	2024	0	>5%	0	—	N	Naturally present in the environment
Total Trihalomethanes-TTHMS (ppb)	2024	N/A	80	7.2	7.2	N	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer
Parameter (UNITS)	Year	AL	MCLG	90th Percentile	Sites Above AL/ Total Sites	Violation	Typical Source
Copper (ppm)	2023	1.3	1.3	0.018	0	N	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppm)	2023	0.015	0	0.003	0	N	Corrosion of household plumbing systems; Erosion of natural deposits

### OTHER ORGANIC CONTAMINANTS - when detected at treatment plant as VOC residuals, not TTHM compliance

Parameter (UNITS)	Year Sampled	Highest Result	ORSG	Possible Source
Bromodichloromethane (ppb)	2024	0.9	\$	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2024	0.6	\$	By-product of drinking water disinfection
Chloroform (ppb)	2024	2.5	70	Trihalomethane; by-product of drinking water chlorination.
Methyl tert-butyl ether or MtBE (ppb)	2024	2.5	70	Fuel additive; leaks and spills from gasoline storage tanks



## RADIOACTIVE CONTAMINANTS

Parameter (UNITS)	Year Sampled	Highest Result	MCLG	MCL	Violation (Y/N)	Possible Source
Gross Alpha (pCi/L)	2024	0.39	0	15	N	Erosion of natural deposits
Radium 226 & 228 (pCi/L)	2024	0.55	0	5	N	Decay of natural and manmade deposits

## UNREGULATED or SECONDARY CONTAMINANTS (MCL has not yet been established)

Parameter (UNITS)	Year Sampled	Result or range	SMCL	ORSG or Health Advisory	Typical Source	Health and/or Aesthetic Effects
Iron (ppb)	2024	50-400	300	§	Natural and industrial sources as well as aging and corroding distribution systems and household pipes	Use of water containing iron at concentrations above the secondary MCL may result in aesthetic issues including the staining of laundry and plumbing fixtures and water with an unpleasant metallic taste and rusty odor.
Manganese (ppb)	2024	78-172	50	300*	Erosion of natural deposits	Use of water containing manganese at concentrations above the secondary MCL may result in aesthetic issues including the staining of laundry and plumbing fixtures and water with an unpleasant bitter metallic taste, odor, and/or black brown color.
*US EPA and MassDEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects and a one-day and 10-day HA of 1000 ppb for acute exposure.						
Nickel (ppb)	2024	8-14	N/A	100	Discharge from domestic wastewater, landfills, and mining and smelting operations	Some people who drink water containing nickel at high concentrations for many years could experience effects on the lung, stomach, blood, liver, kidneys, immune system, reproduction, and development.
Perfluorobutanesulfonic acid-PFBS (ppt)	2024	0.87-1.90	N/A	§	Manmade chemical; used in products to make them stain, grease, heat, and water resistant	Although PFBS has not been well studied, because it is similar to other perfluorinated compounds that have been associated with effects on various organ systems, it may cause similar effects, for example on the liver, kidneys, and immune system.
Perfluorohexanoic acid-PFHxA (ppt)	2024	ND-3.40	N/A	§	Manmade chemical; used in products to make them stain, grease, heat, and water resistant	Although PFHxA has not been well studied, because it is similar to other perfluorinated compounds that have been associated with effects on various organ systems, it may cause similar effects, for example on the liver, kidneys, and immune system.
Sodium (ppm)	2024	35-40	20	20	Discharge from the use and improper storage of sodium-containing de-icing compounds or in water softening agents	Some people who drink water containing sodium at high concentrations for many years could experience an increase in blood pressure.

## WATER QUALITY DEFINITIONS

- **§** There is no ORSG or other health value for these contaminants
- **90th Percentile:** Out of every 10 homes sampled, 9 were at or below this level.
- **AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **MCL (Maximum Contaminant Level):** 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.
- **MCLG (Maximum Contaminant Level Goal):** 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.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **N/A:** Not applicable.
- **NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **ORSG** Massachusetts Offices of Research and Standards Guideline
- **ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).
- **ppm (parts per million):** One part substance per million parts water (or milligrams per liter).
- **ppt (parts per trillion):** One part substance per trillion parts water (or nanograms per liter).
- **SMCL** Secondary Maximum Contaminant Level



## STORM WATER—NPDES

Water pollution degrades surface waters making them unsafe for drinking, fishing, swimming, and other activities. As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating "point sources" that discharge pollutants into waters of the United States.

Point sources are often discrete conveyances such as pipes or man-made ditches or drains (catch basins) that direct "storm water" to a surface source. Storm water runoff is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces (paved streets, parking lots, and building rooftops), and does not percolate into the ground. As the runoff flows over the land and impervious surfaces it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff is discharged untreated into our river or tributaries.

Federal and state laws and regulations require municipalities with a storm drain system to manage and control all storm water discharges in their city and they, along with everyone who wants to discharge any type of water with pollutants, must first obtain an NPDES permit to do so.

If you see a suspicious discharge to a body of water or storm drain (catch basin, slotted manhole, etc.), please contact **West Brookfield Water Department at (508) 867-1421 Ext.8**

## STORM WATER TIPS

1. Don't dump anything into storm drains.
2. Dispose of hazardous waste through West Brookfield's ongoing waste oil collection program and annual hazardous waste collection days.
3. When watering your lawn, don't over water.
4. Water that runs off sidewalks and roadways carries contaminants (oil, grease, and metals) into our storm drain system.
5. Divert runoff from pavement to grassy, planted, or wooded areas of your property.
6. Reduce fertilizer and pesticide use.

## WATER CONSERVATION

### INDOOR TIPS

- Fix that leaky toilet. You'll save 50 gallons a day or more.
- Never use your toilet as a wastebasket. You'll save 1 to 2 gallons per flush (and you'll save your pipes)
- Install low-flow aerators on your faucets. You'll save 1 to 5 gallons per minute.
- Fix that leaky faucet. Worn-out washers can waste hundreds of gallons per week.
- Replace your washing machine with a high-efficiency model. You'll use 30 to 50% less water.

### OUTDOOR TIPS

- Aerate your soil in the spring and fall. This will aid water absorption and retention.
- Use mulch in your flower beds. Mulch will keep roots cool and moist and reduce weeds.
- Water your lawn overnight or before 5 am. Mid-day watering will result in evaporation.
- One inch of water a week is plenty. After heavy rains, you may not need to water for 10 to 14 days.
- Raise the mower blade to 2 or 3 inches or more. Longer grass retains moisture and competes better against weeds.

## INFORMATION ON THE INTERNET

The U.S. EPA Office of Water (<https://www.epa.gov/aboutepa/about-office-water>) and the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)) websites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, the MassDEP has a website ([www.mass.gov/dep](http://www.mass.gov/dep)) that provides complete and current information on water issues in Massachusetts, including valuable information about our watershed.

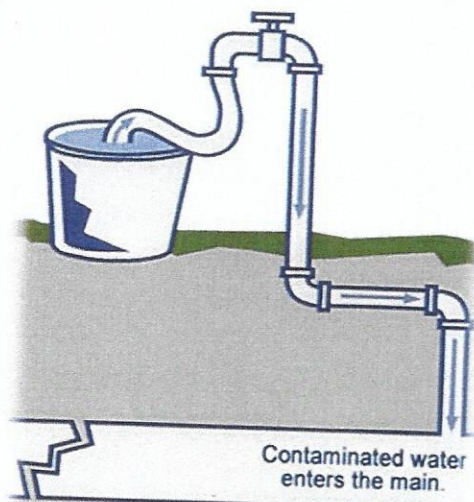


# CROSS CONNECTIONS & BACKFLOWS

## What is a cross connection?

A cross connection is any actual or potential connection between the drinking water lines and potential sources of pollution or contamination such as a piping arrangement 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.

A drop in water pressure due to a break in the water main causes water to flow in reverse.



## What is a backflow?

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of the water can occur when the pressure created by equipment or system such as a boiler or air conditioning system is higher than the water pressure inside the water distribution line (back pressure), or when the pressure in the distribution lines 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 (backsiphonage). 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.



Hose Bibb Vacuum Breaker (HBVB)

## Simple steps to prevent cross connection hazards:

- Never submerge a watering hose into a pool, tubs, sink, bucket of soapy water, pet watering containers, drains, or chemicals.
  - Always leave an air gap between the hose and the object being filled.
  - Install a hose bibb vacuum breaker (HBVB) on every threaded water fixture.
- These can be found at most hardware stores and are easy to install.

For more information, review the Cross-connection Control Manual from the U.S. EPA's Web site at:

<http://water.epa.gov/nfrastructure/drinkingwater/pws/crossconnectioncontrol/index.cfm>

You can also call the Safe Drinking Water Hotline at (800) 426-4791.

## WHAT ARE PFAS AND WHY ARE THEY A PROBLEM?

PFAS in drinking water is an important emerging issue nationwide. Because PFAS are water soluble, over time PFAS from some firefighting foam, manufacturing sites, landfills, spills, air deposition from factories and other releases can seep into surface soils. From there, PFAS can leach into groundwater or surface water, and can contaminate drinking water. PFAS have also been found in rivers, lakes, fish, and wildlife.

Exposure can occur when someone uses certain products that contain PFAS, eats PFAS-contaminated food, or drinks PFAS-contaminated water. When ingested, some PFAS can build up in the body and, over time, these PFAS may increase to a level where health effects could occur.

In October 2020, MassDEP published its PFAS public drinking water standard, called a Massachusetts Maximum Contamination Level (MMCL), of 20 nanograms per liter (ng/L) (or parts per trillion (ppt)) – individually or for the sum of the concentrations of six specific PFAS. These PFAS are perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluorononanoic acid (PFNA); perfluoroheptanoic acid (PFHpA); and perfluorodecanoic acid (PFDA). MassDEP abbreviates this set of six PFAS as "PFAS6." This drinking water standard is set to be protective against adverse health effects for all people consuming the water.

In April 2024, EPA published its first regulations. The new regulations limit PFOA and PFOS to four parts per trillion, while limiting PFHxS, PFNA and GenX to 10 parts per trillion.

If you have any questions regarding PFAS please visit the links below or for more specific information regarding West Brookfield and PFAS contact the West Brookfield Water Department at (508) 867-1421 Ext. 8

<https://www.epa.gov/pfas/basic-information-pfas>

<https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas>





# LEAD AND DRINKING WATER

## Lead Service Lines:

The service line is the pipe that connects your house to the water main in the street. Some service lines that run from older homes (usually those built before 1940) to the utility water main are lead. To determine if your home has a lead service line you or your plumber need to inspect the service line. Lead service lines are generally a dull gray color and are very soft. You can identify them by carefully scratching with a key. On a lead pipe, the area you've scratched will turn a bright silver color. Do not use a knife or other sharp instrument, and take care not to puncture a hole in the pipe. West Brookfield Water Department has developed a Service Line Inventory which indicates the service line material at your property. You may view the Service Line Inventory by utilizing the following link:

<https://storage.googleapis.com/juniper-media-library/43/2024/11/LeadCopperServiceLineInventory2024-2-1.csv>

**Lead can get into tap water** if you have lead pipes in your home or you have lead solder on pipes or brass fixtures in your home. Lead solder was banned in 1989. Homes built before then will likely contain lead soldered pipes. Corrosion or wearing-away of lead-based materials can add lead to tap water, especially if water sits in the pipes for a long time before use.

There is no safe level of lead in drinking water. Exposure to lead in drinking water can cause serious health effects in all age groups, especially pregnant people, infants (both formula-fed and breastfed), and young children. Some of the health effects to infants and children include decreases in IQ and attention span. Lead exposure can also result in new or worsened learning and behavior problems. The children of persons who are exposed to lead before or during pregnancy may be at increased risk of these harmful health effects. Adults have increased risks of heart disease, high blood pressure, kidney or nervous system problems. Contact your health care provider for more information about your risks. Lead in drinking water is primarily from materials and parts used in service lines and home plumbing. West Brookfield Water Department is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, if you are concerned about lead in your water, and wish to have your water tested, contact West Brookfield Water Department at [klandry@wbrookfield.com](mailto:klandry@wbrookfield.com) or (508) 867-1421 Ext. 8.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at:

<https://www.epa.gov/safewater/lead>



## NEED ANSWERS?

We encourage you to share your thoughts with us on the information contained in this report. Should you have any questions about this report, your water bills or relating to your drinking water please call the Water Department at (508) 867-1421 Ext. 8.