

West Brookfield Water Department
Water Quality Report for 2022



June 2023

BOARD OF COMMISSIONERS:
Robert Benson, Chairman

Superintendent: Wesley Cassavant
Operator/Laborer: Andrew Tombor –
John Stanton III

Barry Nadon Sr.
Lester Paquette

Administrative Asst.: Kathleen Landry

Monthly Meetings: The Water Commissioners meet the first Thursday of every month at 10:00 a.m. at the Town Hall, Lower Level 6, 2 East Main Street, West Brookfield, Massachusetts. Please feel free to attend and participate in any of our meetings.

If you have any questions, concerns or thoughts about this report please do not hesitate to contact either of our offices:

West Brookfield Water Department
2 East Main Street, PO Box 9
W. Brookfield, MA 01585
(508) 867-1421 Ext. 8
Email: klandry@wbrookfield.com

Or

West Brookfield Water Department Plant
20 Ware Point Road
West Brookfield, MA 01585
(508) 867-1412

PUBLIC WATER SUPPLY ID#: 2323000

Dear Water Consumer:

This is your Annual Drinking Water Quality Report for 2021. It contains important information about your drinking water that is supplied by the Town of West Brookfield. We are committed to providing you with the best quality water available. We are proud to report that last year our water met all applicable health standards regulated by the state and federal government.

Landlords: Please make this report available to your tenants.
Businesses: Please post this report where your employees and customers can read it.
Public Buildings: Please post this report where it may be read by people who may drink this water.

Additional copies of this year's report are available from the Water Department Office, Town Clerks Office, Tax Collectors Office, and Library or on the website www.wbrookfield.com. The Water Department has a very limited supplies of 2021 CCR reports are available.

Our water system is routinely inspected and checked by the Department of Environmental Protection (DEP). The DEP inspects our system for its technical, financial and managerial capacity to provide the safest drinking water for 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. Our staff continues to receive training on the new standards, which are critical for quality water to you our consumer.

Where does my drinking water come from?

Your water is provided by the following sources listed below. Well #1 is filtered and Well #2R, Well Blend, Well #3R, Well#4R and Well #5R is not filtered. Sources vary during certain times of the year between Well #1, Well #2R, Well Blend, 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 our precious resource is also your responsibility. Please call the West Brookfield Water Department at (508) 867-1421 Ext. 306 if you observe any activity that could contaminate our drinking water supplies.

SOURCE NAME	DEP SOURCE	SOURCE TYPE	LOCATION
Well #1	232300001G	Groundwater	20 Ware Point Rd
Well #2R	232300006G	Groundwater	Leland Rd.
Well #Blend	232300002G	Groundwater	Leland Rd.
Well #3R	232300003G	Groundwater	Leland Rd.
Well #4R	232300004G	Groundwater	Leland Rd.
Well #5R	232300005G	Groundwater	Leland Rd.

New Office Hours:	Monday	8:00am to 3:00pm
	Tuesday	8:00am to 3:00pm
	Wednesday	8:00am to 3:00pm
	Thursday	9:00am to 1:00pm

IMPROVEMENTS:

The Water Department is pleased to submit the following report in 2022.

We may be reached by calling (508) 867-1421 Ext. 8 or the Filtration Plant (508) 867-1412.

The Water Department would like to receive your support on the matter that is eminent. We were informed on our 2019 sanitary survey that we are in non compliance with the Plant #2 water conditions, due to the high iron and manganese, we exceed the maximum levels for acceptability, so with that being said we need your support for funding that is 1.6M project to bring us into compliance with the MASSDEP. Plant #2 was in construction in 2012 and went online in 2013, we met all requirements for good drinking water. However, since then the drinking water demand has increased, we are now drawing excessive amounts of iron & manganese.

The project is to extend the building (metal building) at Plant #2 by adding Greensand Filters and a sludge tank to get into compliance with the MASSDEP. Also, we need to get SCADA integrated into Plant #1 and upgrade equipment so from either plant if there is an emergency, we can shut down the other plant. If we do not get into compliance the MASSDEP will fine the Town, and it becomes a bigger Town problem. We appreciate you taking the time to understand our project and hope you will support our cause.

In 2021 we have put in 3 new services into the system. We repaired two water main breaks this year, too.

We would like to remind customers that we have a handful left that still need new meters. The project is still ongoing. So, if you are a customer still needing your meter changed out. Please call the office to make arrangements to have your meter updated. We may be reached by calling (508) 867-1421 Ext. 8 or the filtration plant at (508) 867-1412.

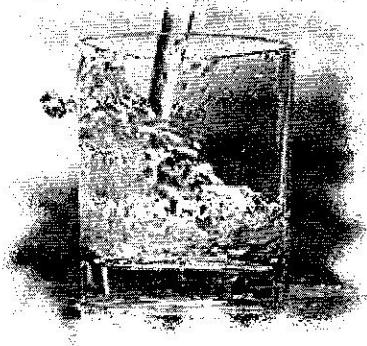
We would like to thank the Highway Department for their help during the year. And we would like to thank Jean Wrobel for 22 years of service to this department and wish her a happy retirement.

Please be aware of our Wellhead Protection Areas. If you notice any suspicious activity in these areas, please report it to our office at (508) 867-1421 Ext. 8 or (508) 867-1412 the plant. Please conserve this valuable resource!

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 filter the water to remove small particles and organisms such as sediments and bacteria. Also, we chemically treat the water to reduce levels of iron and manganese. 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 treatments are required.

The West Brookfield Water Department is protected by fences and intrusion alarms at the plant (Well #1) and Leland Road (Well #2, #3, #4, #5 and Multi). The DEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The complete SWAP report is available at the West Brookfield Water Department Office, LL6 in the Town Hall, the local Board of Health and online @ WWW.state.ma.us/dep/brp/dws/. For more information call the West Brookfield Water Department Office at (508) 867-1421 Ext. 8.



What is Cross-Connection and What can I do about it?

The West 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 systems. 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?

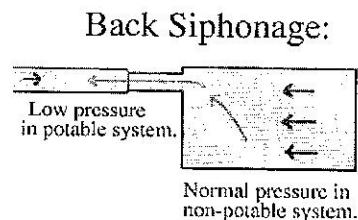
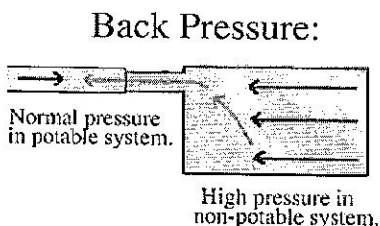
Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler or air conditioning is higher than the water pressure inside the water distribution line (back pressure),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

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:

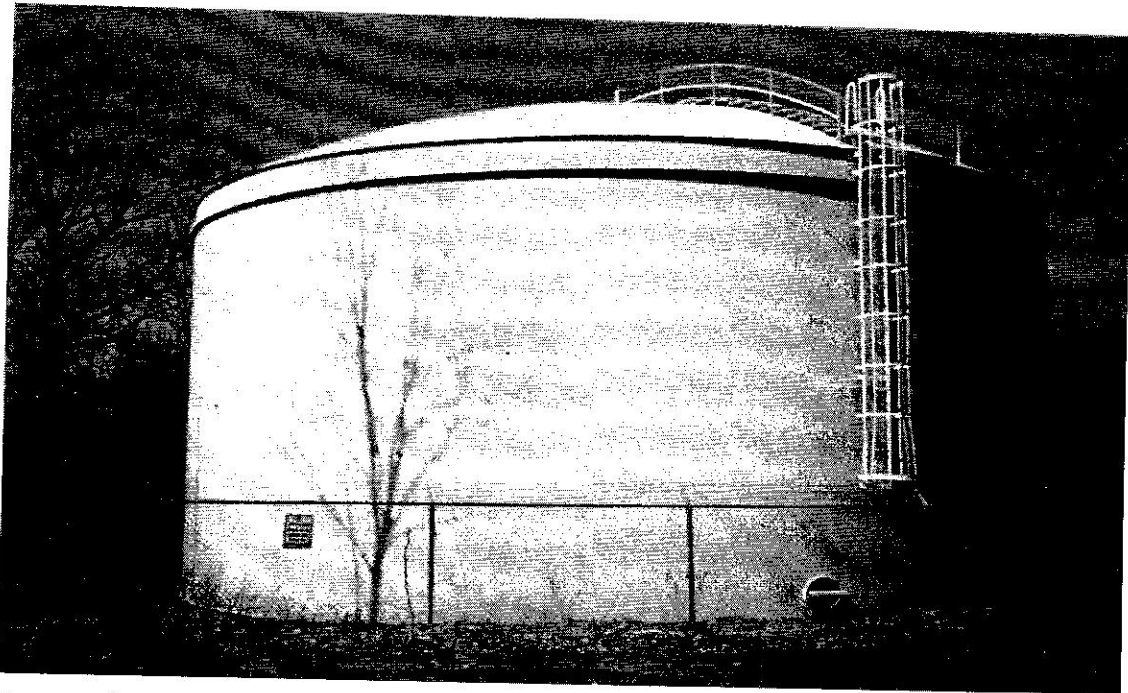
- NEVER submerge a hose in soapy water buckets, pet washing containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attach a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bib vacuum breaker in any threaded water fixture. The installation can be as easy 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 the 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.



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 run off, 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 run off 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.

EPA AND FDA REGULATIONS:

In order to ensure that tap water is safe to drink, the Mass DEP and 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 the public's health. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791)

Vulnerability: 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 transplants, people with HIV/AIDS or other immune systems disorders, some elderly and infants can be particularly at risk from infection. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the SAFE DRINKING WATER HOTLINE (800-426-4791).

Health Affects:

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. The West 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 and 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>.

Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

Manganese: 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 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 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 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 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:

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.

IMPORTANT DEFINITIONS:

Maximum Contaminant Level or 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 or 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: 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 samples, 9 were at or below this level.

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

Unregulated Contaminants – Unregulated contaminants are those of 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 quarters of data.

Maximum Residual Disinfectant Level (MRDL): 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 (ex: Chlorine, chloramines, chlorine dioxide).

Maximum Residual Disinfectant Level Goal (MRDLG): 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 disinfectants to control microbial contaminants.

Level 1 Assessment – A Level 1 assessment is a study of the water systems 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)

	Date(s) Collected	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	08/25/20	.010	15	0	12	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	08/25/20	.232	1.3	1.3	12	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

NOTE: 1G-RW Raw Water at Well #1 1G-PT – Treated Water Well #1

06G - Raw Water at Well #2R MULTI – Treated Water Well Blend wells

03G - Raw Water at Well #3R 04G- Raw Water at Well #4R

05G - Raw Water at Well #5R OW-1-13, OW-2-13, OW-3D (test wells at Plant #2)

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.

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.

Bacteria	MCL / TT	MCLG	Value	Date	Violation (Y/N)	Possible Sources
Total Coliform	.1			08/14/19		
Bacteria	.1	0	Positive	08/16/19	N	Human and animal fecal waste
Storage Tank						

On August 15th, 2019 the West Brookfield Water Department was notified by the lab that sample RS003 collected on August 14th was positive for total coliform. The Operator re-sampled on August 16th and submitted to lab. On August 17th, the lab reported that RS003 was positive for total coliform. After consultation with Mass DEP, the PWS increased chlorine feed rate to increase the chlorine residual leaving the filters from 0.5mg/L to 0.7mg/L. The operator re-sampled on August 19th and all samples came back clean.

Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	Q4 8/10/22	.00018	ppb	80	----	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Q4 8/10/22	.0064	ppb	60	----	N	Byproduct of drinking water disinfection

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range Detected	Source	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium (ppm)	10/26/22	67 48.4 12.3	OW2. OW1 OW-3	---	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Organic Contaminants						
MTBE - Methyl Tertiary Butyl Ether (ppb)	04/08/20 04/14/21 05/11/23	.0033 .0025 .0031 .0026	1G-RW 1G-PT 1G-RW 1G-F	20-40	70	Fuel additive; leaks and spills from gasoline storage tanks
Other Organic Contaminants - When detected at treatment plant as VOC residuals						
Perchlorate	08/10/22	.110 .140 .056 .120	06RW 03RW 04RW 05RW	2	N/A	Rockets propellant Fireworks, munitions Flares, blasting agents
Nitrite (ppm)	10/26/22	3.93	OW2-1	1	1	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Secondary Contaminants						
Iron (ppb)	01/12/22 05/11/22 08/10/22 10/12/22	.34 .0032 .00112 .30 .31 .10 .64 .16 .27 .36 .16	Multi OW-1 OW-2 Well#1 Multi1 06RW 03 RW 04RW 05RW Multi multi	300	Health Advisory of 300 ppb	Naturally occurring, corrosion of cast iron pipes
Manganese* (ppb)	01/12/22 05/11/22	.169 .331 .119 .034 .394	multi well1G multi 06RW 03RW	50		Erosion of natural deposits

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range Detected	Source	SMCL	ORSG	Possible Source
	08/10/22	.026 .044 .171 .097	04RW 05RW Multi			

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							
Nitrate (ppm)	05/11/22						Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
	RW-01G	0.52					
	01G	0.41					
	Multi	1.36					
	RW-06G	1.44	6.7	10	10		
	RW-03G	0.65					
	RW-04G	0.94					
	RW-05G	1.37					
Perchlorate (ppb)	07/08/20	.12	.29	2	N/A		Rocket propellants, fireworks, munitions, flares, blasting agents
Disinfectants and Disinfection By-Products							
Bromodichloromethane	04/08/20	1.3	2.9		N/A		Trihalomethane; by-product of drinking water chlorination
Chloroform (ppb)	05/11/22	0.6	.05	N/A	70		By-product of drinking water chlorination (In non-chlorinated sources it may be naturally occurring)
		2.6					
Dibromodichloromethane	04/08/20	.08	3.2	N/A	N/A		Trihalomethane; By-product of drinking water chlorination
* EPA has established a lifetime Health Advisory (HA) for manganese of 0.3 mg/L and an acute HA at 1.0 mg/L (Add health language listed below if detect is over 300 ppb)							

The Water Department would like to thank all our consumers and All Town Departments for their help and support throughout the year. If you have any questions, please call (508) 867-1421 Ext. 8

Please try to conserve our precious resources; here are a few conservation tips.

Conservation Facts & Tips:

1. Most leakage is due to not changing worn faucet washers or faulty toilet tank valves.
2. Purchase water saving devices, which are inexpensive and easy to install.
3. Customers can check their toilets for leakage by removing tank cover and placing a few drops of food coloring in the tank, letting it sit for awhile. If the food coloring appears in the water bowl the toilet leaks. You should consult your plumber to assess and repair the leak.
4. Half the water used in your home is in the toilet for waste disposal.
5. Lawns and gardens should be watered early in the morning or early in the evening, not during the day when the sun is highest.
6. Our water is very precious, please help conserve.
7. Please make sure that your meter is protected from the cold in winter.