



WEST BOYLSTON WATER DISTRICT
183 WORCESTER STREET
WEST BOYLSTON, MA 01583
www.westboylstonwater.org
(508) 835-3025
PWS ID # 2321000

2021 DRINKING WATER QUALITY REPORT

In accordance with federal drinking water regulations, the West Boylston Water District has prepared this report to inform consumers on the quality of water provided over the past year. In addition to water quality information, this report includes a brief history of the District and a description of our wells. If you have any questions about this report, please contact Michael D. Coveney, Superintendent, at the West Boylston Water District at (508) 835-3025. During nights, weekends, holidays or emergencies, please call (508) 210-5645 for assistance. You may also visit the West Boylston Water District website at <https://www.westboylstonwater.org/>.

The Board of Water Commissioners usually meet one Monday each month at 5 p.m. The meetings are held at the District Office and notification is posted at Town Hall, online at www.westboylstonwater.org, and the District Office. During these meetings, opportunities are available for customers to publicly discuss their water quality concerns. Anyone that wishes to discuss issues with the Commission is encouraged to notify the District with a written request no later than the Monday prior to the Board Meeting so they may have their name placed on the agenda.

YOUR DRINKING WATER SOURCES

The West Boylston Water District currently maintains three groundwater supply sources. The Lee Street Well No. 4 (PWS ID # 2321000-04G), which is located off Lee Street, has an approved pumping rate of 250 gallons per minute (gpm). The Oakdale Well (PWS ID # 2321000-01G), which is located off Thomas Street, has an approved pumping rate of 725 gpm. The Pleasant Valley Well (PWS ID#2321000-05G), which is located off Temple Street, has an approved pumping rate of 500 gpm. The water is treated at each source with three chemicals prior to distribution. Potassium hydroxide is injected to elevate the pH of the water for corrosion control. A polyphosphate blend is also used to sequester manganese, which tends to cause staining of fixtures. Chlorine is also added to the water for disinfection. The quality of water pumped and distributed by the District meets or surpasses United States Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (MassDEP) primary drinking water guidelines and regulations. The EPA and MassDEP require water to be tested regularly. A certified laboratory performs all tests and the results are reported to MassDEP. Tests for bacterial contamination are performed monthly, whereas tests for other contaminants are performed annually or at a frequency determined by the MassDEP.

Bottle vs Tap

The bottled water industry has been trying to convince consumers that all water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is just bottled tap water (40 percent according to government estimates). The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that is packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States. People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you would pay for bottled water.

PROTECTION OF WATER SOURCES

The Water District has taken an active approach in protecting its groundwater supply sources. A Zone II Delineation, which estimates the area of contribution for the well, was approved for the Lee Street Well No.4 by the MassDEP in 1989. Zone II Delineation for both the Pleasant Valley Well and the Oakdale Well were completed under the MassDEP's Source Water Assessment and Protection (SWAP) program in July 1999 and December 2000. The SWAP report assesses the susceptibility of the public water supply to potential sources of contamination. MassDEP determined the susceptibility of the Oakdale and Pleasant Valley Wells to be high because of the presence of the railroad corridor, a high-threat activity. The Lee Street Well was assessed as having only moderate threats. Within the Zone II Delineation for the Pleasant Valley Well, the land is lightly developed with no known agricultural activities. A former landfill located within the limits of the Zone II of the Pleasant Valley Well was the only other potential source of any threat to report. Within the Zone II Delineation for the Oakdale Well, three commercial users including a medical facility, beauty salon and a vehicle repair shop, as well as a cemetery were identified as potentially posing a threat to the groundwater.

In addition, the SWAP reports recommended that the District make two amendments to the Groundwater Protection District Bylaw that was adopted in 1994. These changes include providing specific language within the Bylaw prohibiting landfilling of wastewater and septage residuals from the Zone II and prohibiting expansion of impervious surface on exiting nonresidential land within Zone II so that the impervious surfaces are not greater than 10% of the lot size. The complete SWAP report can be reviewed at the West Boylston Water District Office on 183 Worcester Street, or it can also be sent to you by email.

In 2011 the Massachusetts Rural Water Association prepared a comprehensive plan for the District's sources using input from the Water Commissioners, Board of Selectmen, and Board of Health. We are currently working on a 10-year update to this plan to be available soon. The final plan from 2011 and a presentation can be viewed by clicking on the Source Water Protection Plan links on the District's reports page or at:

https://www.westboylstonwater.org/wp-content/uploads/bsk-pdf-manager/SWPP_14.pdf

SUBSTANCES FOUND IN DRINKING WATER

Sources of drinking water (*both tap water and bottled water*) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants - such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants - such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or 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.

Lead - 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 Boylston 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>

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 mg/L (micrograms 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 ppb, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 ppb and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ppb, primarily due to concerns about possible neurological effects. Children younger than one year old should not be given water with manganese concentrations over 300 ppb, nor should formula for infants be made with that water for more than a total of ten days throughout the year.** 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 on this webpage:

https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf. and MassDEP Office of Research and Standards Guideline (ORSG) for Manganese:

<https://www.mass.gov/doc/massdep-office-of-research-and-standards-guideline-orsg-for-manganese>
For more information go to:
<https://www.mass.gov/files/documents/2016/08/mg/manfactsheet.pdf>

In order to ensure that tap water is safe to drink, the EPA and MassDEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. FDA and Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. 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 (1-800-426-4791).

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 infants can be particularly at risk from infections. 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 at 1-800-426-4791.

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.

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

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

Parts Per Million (ppm) – This unit is equivalent to one milligram per liter (mg/L). One part per one million is equal to:

- One minute in two years
- One penny in \$10,000
- One ounce in 82,500 pounds

Parts Per Billion (ppb) – Micrograms per liter (ug/L)

Parts Per Trillion (ppt) – Nanograms per liter (ng/L)

Picocuries Per Liter (pCi/L) - (a measure of radioactivity)

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 of disinfectants to control microbial contamination.

Maximum Residual Disinfectant Level (MRDL) – The highest level of disinfectant (chlorine) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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.

Lead and Copper 90th Percentile – Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the action level to determine lead and copper compliance.

Unregulated Contaminants - 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.

The Massachusetts Department of Environmental Protection has reduced the monitoring requirements for Perchlorate because the source is not at risk of contamination. The last sample collected for these contaminants was taken on 8/28/2020 and was found to meet all applicable EPA and MassDEP standards.

WATER QUALITY TESTING RESULTS

The following results are from sampling done in 2021 or during the most recent monitoring period for each contaminant group tested in accordance with the regulations. Only the detected contaminants are shown.

Microbial Contaminants	Highest # Positive Samples in a Month	MCL	MCLG	Violation (Y/N)	Possible Sources
Total Coliform Bacteria	1	1	0	NO	Naturally present in the environment
E. coli Bacteria	0	*	0	NO	Human and animal fecal waste

* Compliance with the E. coli MCL is determined upon additional repeat testing.

Lead and Copper	Dates Collected	90 TH Percentile	Action Level	MCLG	# of sites sampled	# of sites above action level	Possible Sources
Lead (ppb)	8/2021-9/2021	1.0	15	0	40	0	Corrosion of household plumbing
Copper (ppm)	8/2021-9/2021	0.140	1.3	1.3	40	0	Corrosion of household plumbing

Regulated Contaminants	Date(s) Collected	Highest Result or Average	Range Detected	MCL	MCLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganics							
Perchlorate (ppb)	8/28/20	0.22	0.09 - 0.22	2	N/A	NO	Rocket propellants, fireworks, munitions, flares, blasting agents
Nitrate (ppm)	5/12/21	0.80	0.13 – 0.80	10	10	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	5/12/21	0.086	0.079 - 0.086	1	1	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium (ppm)	5/12/21	0.015	0 – 0.015	2	2	NO	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Arsenic (ppb)	5/12/21	2.3	0 – 2.3	10	N/A	NO	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
PFAS6 (ppt)	10/2021	2.48	0 – 2.48	20	N/A	NO	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.
Radioactive (pCi/L) ⁽¹⁾							
Gross Alpha Particles	4/12/16	0.27	0.57 to 0.27	15	0	NO	Erosion of natural deposits
Combined Radium	4/12/16	0.71	0.52 to 0.71	5	0	NO	Erosion of natural deposits

Unregulated/Secondary Contaminants	Date Collected	Range Detected	Average	SMCL	ORSG	Possible Sources
Manganese (ppb)	Monthly	60 - 590	320	50	300*	Erosion of natural deposits
Sodium (ppm)	5/12/21	22 – 48**	39.3	N/A	20	Natural sources; runoff from road salt

Disinfection Contaminants	Dates Collected	MRDL/MCL	MRDLG/MCLG	Highest Result or Average	Range Detected	Sources	Violation
Chlorine (ppm)	Monthly	4	4	0.32	0.11–0.56	Water additive used to control microbes	NO
HAA5 (ppb) Haloacetic Acids	8/12/21	60	N/A	0	0	By-Product of drinking water chlorination	NO
TTHM (ppb) Trihalomethanes	8/12/21	80	N/A	1.3	1.3 – 1.3	By-Product of drinking water chlorination	NO

(1) The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

*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. See page 3 for more information on Manganese.

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

COMPLIANCE IN 2021

The West Boylston Water District was in full compliance with all state and federal primary drinking water regulations in 2021. However, we did detect coliform bacteria as stated in the results listed in the tables above. 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. We found coliforms indicating the need to look for potential problems in water treatment or distribution. Upon subsequent testing we did not find any further detections of coliform bacteria in any of the samples that were tested.

ENFORCEMENT

MassDEP has issued an Administrative Consent Order (ACO) and Notice of Noncompliance (NON) to the West Boylston Water District in 2019. This ACO was issued for the elevated levels of Manganese that have been detected in the water system that have exceeded the MassDEP health advisory. For more about Manganese see pages 3 and 7 of this report. The District is required to remove the levels of manganese in the water system by installing and activating a water filtration facility at the Oakdale Well before 2023 and install and activate a replacement for the Pleasant Valley Well before 2022, and for permanent the submittal of a water tank maintenance schedule with permanent disinfection. The construction of the Oakdale Manganese Removal Plant is ongoing, and the replacement well at Pleasant Valley is planned to be online in January 2022.

ADDITIONAL INFORMATION

History of the District

The West Boylston Water District was established in 1939 at which time one well was installed on Lee Street and a 460,000-gallon water storage tank (Tank #1) was constructed off Lawrence Street. Over time, the District constructed three additional wells on Lee Street. In 1956, the District added the Oakdale Well and a 500,000-gallon capacity storage tank off Beaman Street. In the 1970's, the Pleasant Valley Well was added off Temple Street. A one million-gallon capacity storage tank off Stockwell Road and a 1.2 million-gallon capacity storage tank off Lawrence Street were added in 1965 and 1978, respectively. Currently, the District utilizes only one of the four Lee Street wells, the other three were abandoned due to high levels of iron. In 2021 the Pleasant Valley well provided about half of the District's water at 50%. While the Lee St well provided 37% and the Oakdale well provided 13%. The new well at Pleasant Valley will replace the current well and is expected to provide a better quality and quantity of water starting in 2022.

2021 Accomplishments

The District has been active with replacing older fire hydrants with new traffic models that are designed to break without the loss of any water. Replacement of the North Main Street and surrounding area water mains was completed in the spring of 2021. Lawrence Tank #1 was cleaned and refurbished with new hatches, new vent, and new roof membrane. The new Pleasant Valley Well site was tested and approved by Mass. Dept. of Environmental Protection and commissioned. Construction of the Oakdale Water Treatment Plant has begun with anticipated operation to commence by January 2023. There were also several upgrades to water services that were installed prior to new road surface replacements. The Lee Street Well power line was relocated underground to provide a more reliable power service.

We encourage you to visit our website at <https://www.westboylstonwater.org/> for more information, to pay your water bill and to also sign up for the CodeRED notification system which will notify you of any important issues happening with the water system and other Town related messages.

Manganese

The Oakdale Well and Pleasant Valley Well have elevated levels of Manganese in the water. This element that has been occurring naturally within the ground is one of the top priority concerns of the District. We have been controlling the use of these Wells to reduce the amount of Manganese that is pumped into the water system. We are also working with the MassDEP at their request to try to reduce the levels of Manganese in the water system. We have increased our monitoring to include monthly samples for Manganese at the wells, tanks and other areas of the distribution system. The District has commissioned a new water source at the Pleasant Valley along with constructing a treatment plan for the removal of manganese from the water at the Oakdale Well in early 2023.

BACKFLOW PREVENTION

As your drinking water supplier, the West Boylston Water District is concerned about the possible introduction of contaminants to the drinking water from the sources we supply water to. Most outside contamination takes place when the customer uses equipment that re-pressurizes the water supplied, or when negative pressures occur in the water supply mains, as with a water main that breaks. Typically, most water suppliers have a backflow prevention program in place that addresses this problem with commercial and industrial customers. These customers use their water supply for many purposes with a potential for cross contamination, the District closely monitors these services and often requires special testable devices be placed in their water supply piping to prevent contamination. This concern doesn't end with commercial and industrial customers. Residential customers must concern themselves with potential contamination. Permanent irrigation systems require the installation of a backflow prevention device. Lawns are typically treated with composted materials and/or chemical fertilizers. In the event of a flow reversal, water exposed to the aforementioned contaminants could be introduced to the household and possibly the water distribution system. Another potential source of contamination is the newer aspirator devices that are sold to apply insecticides and fertilizers. These devices connect to a hose and the velocity of the water draws the concentrated chemical up to a mixing area that becomes a spray. Most of these units are supplied with a check valve. However, these devices are easily fouled and can result in failure. Vacuum breakers are the best protection in this situation. These devices are available at the Water District or they can also be purchased at most hardware stores and are generally built in on the new outside faucets. Never leave these devices connected to your water supply or unattended.

WATER CONSERVATION

The West Boylston Water District is permitted to withdraw 560,000 gallons of water per day on an annual average. We are currently NOT exceeding this permitted value; the District Commissioners have kept in place the *Mandatory Water Use Restrictions*. These restrictions affect lawn watering, which is allowed on an odd/even basis between 7pm and 7am the following morning. If you live in a home with an address ending with an odd number, you are permitted to begin watering at 7pm on odd numbered days. Homes with even numbers are permitted to water at 7pm on even numbered days until 7am the following morning. No lawn water use is permitted on Mondays to allow the system to replenish. Your cooperation in this effort is greatly appreciated. More tips and information can be found at:

<https://www.westboylstonwater.org/mandatory-water-use-restrictions-are-in-effect/>