

BELCHERTOWN WATER DISTRICT
EST. 1922
WATER QUALITY REPORT FOR JANUARY–DECEMBER 2021

Business Hours:

Monday - Friday 7AM-3:30PM

Board of Commissioners meets on the 3rd Tuesday of each month at 206 Jabish Street.

Meetings are open to all and times are posted at town buildings.

Questions - Concerns

Kevin Williams (413) 323-6987 or Admin@belchertownwaterdistrict.org

Website www.Belchertownwaterdistrict.org

Belchertown Water District Facts:

PWS ID#1024000 Jabish Wells 01G – 04G Daigle Well 05G Water Storage: 2 tanks Capacity: 600,000 Gallons 1375 Service Connections on 28 Miles of Water Mains Average daily consumption 250,000 Gallons Highest daily consumption 514,000 Gallons	Ground water sources: 206 Jabish Street- 4 gravel packed wells 763 Federal Street- One gravel packed well Emergency generator enables uninterrupted water service. The Water District has three full-time employees and three part-time clerical employees. The District is governed by a three-member Board of Commissioners.
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The Belchertown Water District is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP) /Drinking Water program for our technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, Massachusetts-certified operators oversee the routine operation of our system.

In August 1999 water treatment was initiated to reduce the levels of lead and copper from household plumbing by raising the pH of the water to an average pH of 7.1 with the use of sodium carbonate.

In August 2005 permanent chlorination units were installed at both pump stations as required by Mass DEP. Chlorine levels are monitored daily at sources and throughout the system. The District's goal is to maintain a safe level for the system with minimal taste issues. The average residual is 0.40 mg/l, with highs and lows depending on system usage. The highest reading taken was 0.95 mg/l at the Daigle Well House on April 10, 2021. Some portions of the system had no detectable residuals at times.

Source Water Assessment and Protection Program (SWAP) The complete SWAP report is available at the District office or online at <https://www.mass.gov/files/documents/2016/08/ua/1024000.pdf> . This report concludes that the District has a high susceptibility of source contamination from road salt, hazardous material spills via trucks, trains etc.

SUBSTANCES EXPECTED TO BE IN DRINKING WATER

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

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 mineral and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity, which could include:

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

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

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.

Organic Chemical Contaminates, 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.

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 call the **EPA 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 some infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control and Prevention (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 1-800-426-4791**

Lead Levels: 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. Belchertown 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>

DEFINITIONS

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's 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. MCLG's allow for a margin of safety.

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

Maximum Residual Disinfectant Level Goal (MRDLG) -- The level of a drinking water disinfectant (chlorine, chloramines, chlorine dioxide) below which there is no known of expected risk to health.

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

Secondary Maximum Containment level (SMCL)- Standards developed to protect the 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.

ND – None Detected

90th percentile: Out of 10 homes sampled, 9 were below this level.

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

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 or nanograms per liter (ng/l)

pCi/L= picocuries per liter (a measure of radioactivity)

mfl= Million fibers per liter(a measure of asbestos)

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.

TEST RESULTS

Lead and Copper

	Date	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	6/17/19	2.10	15	0	10	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	6/17/19	0.84	1.3	1.3	10	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Raw water samples collected from sources 6/14/16, Lead <0.5ppb, Copper 0.00148-0.00309ppm from natural deposits.

**Disinfection By-Products
Trihalomethanes**

Contaminant	Date Collected	Total Result	Range Detected	MCL/ MRDL	Violation	Possible source of Contamination
Total Trihalomethanes (THMs) (ppb)	8/12/2020	9.95	0.85-3.7	80	No	byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	8/12/2020	3.2	Nd-1.7	60	No	byproduct of drinking water disinfection

“Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems. They may have a greater risk of getting cancer.”

Unregulated Volatile Organic Contaminants – VOC 7/6/2021

No violations for unregulated Trihalomethane byproducts of drinking water chlorination.

Unregulated Chemical Contaminants	Range Detected	OSRG	Unregulated Chemical Contaminants	Range Detected	OSRG
Chloroform (ppb)	ND-0.86	70	Chlorodibromomethane (ppb)	ND-3.3	None
Bromodichloromethane (ppb)	ND-1.6	None	Bromoform (ppb)	ND-2.1	None

PFAS

Per-and Polyfluoroalkly Substances

2020 results comply with 2021 fourth quarter testing requirement.

Contaminant	Date Collected	Total Result	Range Detected	MCL/ MRDL	Violation	Possible source of Contamination
PFAS-6 (ppt)	10/19/2020	2.1	ND-2.1	20	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.
	12/22/2020	2.5	ND-2.5			

Early PFAS testing was completed in 2020 out of an abundance of caution as part of a Mass DEP grant program. For more information on PFAS visit <https://www.mass.gov/doc/massdep-fact-sheet-pfas-in-drinking-water-questions-and-answers-for-consumers/download>

Radioactive Contaminants collected 7/14/2015 Next required sample in 2024

Contaminant	Average Detected	Range Detected	MCL/ MRDL	MCLG/ MRDLG	Violation	Possible source of Contamination
Gross Alpha (pCi/l) (minus uranium)	0.99	0.093-1.98	15	0	No	Erosion of natural deposits
Radium 226 & 228 (pCi/L) (combined values)	1.00	0.545-1.454	5	0	No	Erosion of natural deposits

Secondary Contaminants

Unregulated Contaminant	Date Collected	Result or range Detected	Average Detected	SMCL	ORSG or Health Advisory	Possible Source of Contamination
Iron (ppb)	4/13/2021	**2290	835	300		Corrosion of cast Iron Pipes, Erosion of natural deposits
	5/4/2021	831				
	7/6/2021	822-868				
	10/5/2021	102-878				
*Manganese (ppb)	4/13/2021	**337	85	50	300	Erosion of natural deposits
	5/4/2021	57				
	7/6/2021	58-70				
	10/5/2021	16-71				

***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 1000ppb for acute exposure.**

****Belchertown Water District collected an optional Secondary Contaminants sample on 4/13/2021. This sample was not collected according to standard flushing procedures leading to high levels of sediments that were not an accurate depiction of water quality. This sample triggered quarterly sampling at that location.**

Manganese: 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 µg/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 µg/L, the water may be discolored and taste bad. Over a lifetime, the 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 µg/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 µg/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 6 months of age to children up to 1 year of age to address concerns about children's susceptibility to manganese toxicity. See: EPA Drinking Water Health Advisory for Manganese https://www.epa.gov/sites/production/files/2014-/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research and Standards Guideline (ORSG) for Manganese <http://www.mass.gov/eea/docs/dep/water/drinking/alpha/i-thru-z/mangorsg.pdf>.***

IOC - Inorganic Contaminants 04/14/2020

Contaminant	Range Detected	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Barium	0.085-0.176	2	2	No	Erosion of natural deposits
Fluoride * (ppm)	<0.001	4	4	No	Erosion of natural deposits
Nickel (ppb)	0.02-0.06	ORSG=1	N/A	No	Erosion of natural deposits
Nitrate (ppm) 4/13/2021	0.79-1.53	10.0	10.0	No	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
Sodium (ppm)	30.9-82.1	ORSG = 20	N/A	No	pH adjustment with Sodium Carbonate

*Fluoride also has a secondary maximum containment level (SMCL) of 2ppm to better protect human health.

Belchertown Water District Sampling Waivers

MassDEP has reduced the monitoring requirements for the following contaminant groups because the source is not at risk of contamination. The last sample collected for these contaminants was found to meet all applicable US EPA and MassDEP standards.

Contaminant	Date Sampled	Result	MCL	MDL	Next sample date or waiver pending
* Inorganic (IOC)	4/14/2020	See (IOC)			Waiver approval pending
Synthetic Organic Compounds (SOC)	4/13/2021	ND			Waiver approval pending
Lead and Copper	2019	See "lead and copper"			Reduced monitoring granted in 2014. Next required sample in 2022
Trihalomethanes ppb	8/12/2020	9.95	80		Waiver approval pending
Volatile Organic Contaminants (VOC)	7/6/2021	Unregulated detects only (See VOC)			Next sample 2022 ND none detected for new waiver period
Haloacetic Acids HAA	8/12/2020	3.2			Waiver approval pending
Perchlorate ppb	7/6/2021	ND	2.0	0.3	ND-Waiver approval pending
Asbestos mf/l	5/7/2013	<0.19 MFL	7	0.19	Next sample required 2022
Arsenic (IOC) ppt	04/14/2020	ND <.05	1	.05	ND-Waiver pending approval

*Information on these contaminants and samples can be obtained at the Water District office.

Belchertown Water District collected all necessary samples in 2021 to comply with MassDEP regulations. All other samples were non-detected.

Cross Connection and You

A cross connection is a connection between a drinking water pipe and a contaminated source. The contamination can come from your own home. For instance, suppose you're going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the pressure drops (because of fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the house. The same scenario may exist with a hose left in a bucket or swimming pool. Using an attachment on your hose called a backflow prevention device can prevent this problem.

The Belchertown Water District recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. These can be purchased at a hardware store or plumbing supply store.

The District also requires proper devices on all lawn irrigation systems and recommends the annual testing each device requires. The District is required to have a licensed cross connection inspector on staff. Home inspections are free of charge and recommended if you have a lawn irrigation system.

This is a great way to help protect the water in your home as well as the drinking water system. For additional information on cross connections and on the status of the District's cross connection program please call the **Belchertown Water District at 413-323-6987**.

*Remember conservation and source protection are the key to a long lasting precious resource.
This report can be obtained at the Water District Office, 206 Jabish Street, Belchertown, MA*