

2022

ANNUAL DRINKING WATER QUALITY REPORT

This report is a snapshot of the drinking water quality that was provided last year. Included are details about where your water came from, what it contained, and how it compared to state and federal standards. Our system makes every effort to provide you with safe and pure drinking water.

for
Sturbridge Retirement Cooperative
PWS ID #2287020



Prepared by

McCLURE
ENGINEERING, INC

The water system is owned by Sturbridge Retirement Cooperative Corp. For additional copies, please contact Mary Berry or the McClure Engineering website at <http://www.mcclureengineers.com/water.html> or office at 508.248.2005.

This report contains very important information about your drinking water.
Please translate it, or speak with someone who understands it.

Community Drinking Water Source

S Turbridge Retirement Cooperative is located in Sturbridge, MA, and is supplied water by the following groundwater sources:

- PWS Source ID# 2287020-01G (Well 01G)
- 2287020-02G (Well 02G)
- 2287020-03G (Well 03G)
- 2287020-04G (Well 04G)
- 2287020-05G (Well 05G)

Data in this report reflects water quality from Well 01G, Well 02G, Well 03G, Well 04G and Well 05G.

Sturbridge Retirement Cooperative continuously strives to produce the highest quality water possible to meet or surpass every water quality standard. We monitor our water source and distribution system very closely. The standards we operate under were enacted by the U.S. Congress as the Safe Drinking Water Act in 1974 and were amended in 1986 and 1996.

Is My Water Treated?

To ensure that we provide the highest quality of water available, certified operators and MassDEP regularly monitor water quality. When standards are exceeded, MassDEP requires treatment. Currently Well 03G and Well 04G are treated to remove iron and manganese. Chlorine disinfection is available for emergency situations.

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 storm water runoff 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 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 can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants** can be naturally occurring or be the result of oil and gas production and mining activities.
- **Unregulated Contaminants** are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the US Environmental Protection Agency (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 infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/Centers 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).

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) 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 public health.

~ CROSS CONNECTION CONTROL AND PREVENTION ~

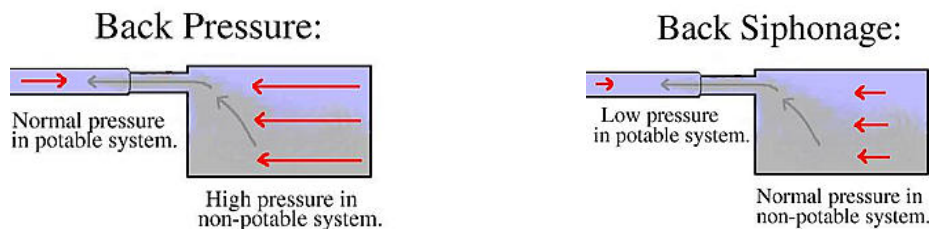
Sturbridge Retirement Cooperative makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted via deep wells from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

What is a cross-connection?

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

What is a backflow?

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



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

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

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.

- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

Sturbridge Retirement Cooperative recommends the installation of low-cost hose bibb vacuum breakers for all inside and outside threaded spigots and hoses. You can purchase them at a hardware store or plumbing supply store. This is a great way to help protect the water system that serves your home and community!

~ *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.

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

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.

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

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.

Level 1 Assessment – This is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment – This 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 (ng/l)

pCi/l = picocuries per liter (measure of radioactivity)

ND = Not Detected

N/A = Not Applicable

NA = Not Available

DISTRIBUTION SYSTEM WATER QUALITY

What Does This Data Represent?

The water quality information presented in the table is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table.

Lead & Copper	Last Date Collected	* 90 th Percentile	Action Level (AL)	MCLG	# of sites sampled	# of sites above Action Level	Exceeds Action Level	Possible Sources of Contamination
Lead (ppb)	Q3 2020	1	15	0	5	0	N	Corrosion of household plumbing; erosion of natural deposits
Copper (ppm)	Q3 2020	0.028	1.3	1.3	5	0	N	Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives.
<p>*9 out of every 10 sites sampled were at or below this level. Lead and copper compliance is determined by comparing the 90th percentile value to the Action Level (AL) for each contaminant. The AL is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.</p> <p>Lead and copper sampling is scheduled every three years. The last samples collected were in 2020 and the next sample collection will be during Quarter 3 of 2023.</p>								

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. Sturbridge Retirement Cooperative 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 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>.

DISTRIBUTION SYSTEM WATER QUALITY (continued)

Bacteria	MCL / TT	MCLG	Value	Date	Violation (Y/N)	Possible Sources
Total Coliform Bacteria	MCL	0	Positive	NA	Y	Human and animal fecal waste
Total Coliform Bacteria	TT	0	Positive	9/20/21	Y	Human and animal fecal waste
Total Coliform Bacteria	MCL	0	Positive	10/20/21	Y	Human and animal fecal waste
Total Coliform Bacteria	TT	0	Positive	10/22/21	Y	Human and animal fecal waste
Total Coliform Bacteria	MCL	0	Positive	5/10/22	Y	Human and animal fecal waste
Total Coliform Bacteria	TT	0	Positive	5/12/22	Y	Human and animal fecal waste
Routine water samples and follow up samples taken in May 2022 tested positive for total coliforms. This triggered a Level 1 Assessment due to having 2 or more total coliform-positive samples in the same month. Due to the second occurrence of a Level 1 Assessment within a 12-month period, a Level 2 Assessment was triggered.						

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. When this occurs, we are required to conduct assessments to identify any problems that were found during these assessments.

During the past year, one Level 2 Assessments were required to be completed for our water system. One Level 2 Assessments was completed. In addition, we were required to take five corrective actions and we completed five of these actions.

The total coliform (TC) exceedance at Well 01G was detected and the well cap, vent and sanitary seals were replaced, which resolved the issue. The TC exceedance at Well 05G was detected and the well was taken offline. The Two 8,000-gallon storage tanks (A and B) were evaluated and the seals on the hatches were found to leak. The inner chambers were sealed, and new bulkhead hatches were installed on both tanks. Tank A was put back into service, but Tank B is currently still not in operation and has not been needed as Tank A has provided adequate storage to meet the PWS demands served by the Tank.

DISTRIBUTION SYSTEM WATER QUALITY (continued)

Regulated Contaminants	Date Collected	Highest Result or Highest Avg	Range detected	MCL	MCLG	Violation (Y/N)	Possible Sources
Inorganic Contaminants							
Arsenic (ppb)	5/24/2021	ND	ND	10	N/A	N	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	5/24/2021	0.0037	0 – 0.037	2	2	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium (ppb)	8/23/2022 10/18/2022 12/6/2022	2	0 – 2	4	4	N	Discharge from electrical, aerospace, and defense industries; erosion of natural deposits
Fluoride (ppm)	6/13/2022	0.4	0.4	4	4	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm) (annual)	5/23/2022 6/13/2022	0.24	0 – 0.24	10	10	N	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Nitrite (ppm)	5/23/2022 6/13/2022	ND	ND	1	1	N	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Perchlorate (ppb)	7/26/2022	ND	ND	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents
PFAS6 (ppt)	1/11/2022 4/18/2022 7/26/2022	7.27	0 – 7.27	20	None	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.
Radioactive Contaminants							
Gross Alpha (pCi/L)	6/5/2017	ND	ND	N/A	15	N/A	Erosion of natural deposits
Radium 226 & 228 (pCi/L)	5/20/2019	0.34	0.2 – 0.34	5	N/A	N	Erosion of natural deposits
-Arsenic was sampled in May 2021. Next sampling event is due in Quarter 2 of 2024. -Gross Alpha Particle Activity was sampled in June 2017. Next sampling is in Quarter 2 of 2025. -Radium 226 & Radium 228 were sampled May 20, 2019. Next sampling is in Quarter 1 of 2023. -Inorganic Contaminants (IOCs) were sampled May 24, 2022. <u>IOCs were non-detected unless listed above.</u> Next sampling is due in Quarter 2 of 2024. -Synthetic Organic Contaminants (SOCs) were sampled May 10, 2021. <u>SOCs were non-detected.</u> Next sampling is in Quarter 2 of 2024. -Volatile Organic Compounds (VOCs) were sampled in 2022. <u>VOCs were non-detected.</u> Next sampling is in Quarter 2 of 2023.							

DISTRIBUTION SYSTEM WATER QUALITY (continued)

Unregulated and Secondary Contaminants	Last Date Collected	Result or Range Detected	SMCL (ppb)	ORSG	Possible Sources
Iron (ppb)	12/6/2022	160	300	--	Natural and industrial sources as well as aging and corroding Distribution Systems and household pipes
Manganese* (ppb)	12/6/2022	ND	50	Health advisory of 300 ppb	Erosion of natural deposits
Nickel (ppb)	4/4/2022	0 – 1.5	N/A	100	Discharge from domestic wastewater, landfills, and mining and smelting operations
Sodium** (ppm)	5/24/2021	14 – 117	N/A	20	Discharge from the use & improper storage of sodium-containing de-icing compounds or in water-softening agents.
<p>*US EPA and MassDEP have established public Health Advisory (HA) 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.</p> <p>**<u>Sodium</u>: Some people who drink water containing sodium at high concentrations for many years could experience an increase in blood pressure.</p> <p>-Sodium: Next sampling event is due in Quarter 2 of 2024.</p>					

~ EDUCATIONAL INFORMATION ~

SWAP (Source Water Assessment and Protection) ~

MassDEP has not prepared a Source Water Assessment Program (SWAP) Report for Sturbridge Retirement Cooperative. The report, if prepared, would assess the susceptibility of public water supplies to contamination and make recommendations.

Residents can help protect sources by:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives at the next town meeting
- Taking hazardous household chemicals to hazardous materials collection days
- Limiting pesticides, fertilizer uses, and unnecessary outdoor watering

Opportunities to Participate ~

Any matters that concern your drinking water supply or issues you would like to see addressed can be presented at the regularly scheduled meeting of the trustees, association or board. If your concerns need immediate attention contact System Owner, Mary Berry at (508) 347-3212.

Water System Improvements ~

Our water system is routinely inspected by MassDEP for its technical, financial and managerial capacity to provide safe drinking water to you. The PWS continues to monitor the water and make adjustments when necessary.

Sturbridge Retirement Cooperative Corporation
PWS ID# 2287020
1 Kelly Road
Sturbridge, MA 01450
(508) 347-3212

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Date Distributed: 6/30/2023

For more information please contact:

Sturbridge Retirement Cooperative Corporation
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This report was prepared by McClure Engineering, Inc.

Also available at <http://www.mcclureengineers.com>

This notice for **PWS ID# 2287020** was distributed by **Mary Berry** by **6/30/2023**.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER