Sturbridge Retirement Co-Operative Corp.
2021

PWS ID: #2287020

REPORT ON WATER QUALITY

This report is a snapshot of the quality of the drinking water that we provided last year. The statistics in this report are based on testing done throughout 2021 and prior years. We hope you will find it helpful to know the sources of your water and the process by which safe drinking water is delivered to your home.

Where Does My Water Come From?

SRCC supplies water from five artesian wells located on the property. Well #1 is located behind the main office, Well #2 on First St., Well #3 on Second St. and Well #4 is in the Park Circle area. Additionally, Well #5 is located off Pleasant Parkway.

The supply and distribution system consists of over two miles of water main delivering water to 220 locations. There are 3 pumping stations with each having a 2500 gallon storage tank and a 1000 gallon pressure tank. Additionally, the pump station for Well #5 has 3 variable speed pumps with two 8000-gallon storage tanks.

WHAT WE ARE DOING TO IMPROVE WATER QUALITY?

In the last couple of years we made several upgrades to our water system. We installed a new well pump, well piping, and electrical upgrades for Well #1. We took the opportunity to clean the storage tank for Well #1 while it was offline. We also began adding six new water gates throughout the system and we put anew vented well cap at the well head for Well #3. These upgrades and replacements were done as part of an on-going program to improve the water quality in the park.

Opportunities to Participate

Any matters that concern your drinking water supply or issues you would like to see addressed can be submitted to the Board of Directors.

Maintaining Water Quality

SRCC continuously strives to produce the highest quality water possible to meet or surpass every water quality standard. We monitor both our sources 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.

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

Is My Water Treated?

State and Federal water regulations require certain chemical treatments before water enters the distribution system. Wells #1, #2 and #5 currently require no treatment. Wells #3 & #4 use a light soda ash to raise the pH to between 6.5 and 8.0 on a scale of 0 to 14. This is delivered using a chemical feed pump. Wells #3 & #4 also treat for iron and manganese using potassium permanganate regenerated greensand filters in the pump station. In June 2020, we were approved for a pilot test to have the backwash to be pumped into the wastewater plant, which negates the need to rebuild the pit and leaching area.

Sturbridge Retirement Co-operative Corporation

If you have any questions about this report, please contact:

Darryl Ledoux, Water Operator and Maintenance Facilitator at (508) 347-3212.

Additional copies of this report are available upon request and at www.whitewateronline.com

DISTRIBUTION SYSTEM WATER QUALITY

This report summarizes only those items detected during sampling - not all contaminants that are monitored.

Microbial Results	Highest # Positive in a Month	Total # Positive	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	13	24	1	0	Yes	Naturally present in the environment
E. Coli	0	0	*	0	No	Human and animal fecal waste
*Compliance with Fecal Coliform / E. Coli MCL is determined upon additional repeat testing.						

Total 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 assessment(s) to identify any problems that were found during these assessments.

Assessments	Number Required	Number completed	Number of corrective actions required	Number of corrective actions completed	Assessment Findings
Level 1 & 2 Assessments	2	2	4	4	Routine water samples and follow up samples taken in September 2021 tested positive for total coliforms. This triggered a Level 1 Assessment. Several additional total coliform positive samples in October 2021 triggered a more in-depth Level 2 Assessment. These assessments determined that since one well had been taken offline due to the recent high beryllium detections, and with record rainfalls in July and August, only one well was supplying the water system at twice its normal rate of production. As a result, this may have contributed to the presence of coliforms. A temporary chlorinator was installed on 10/22/2021 and new tanks will be designed to replace the current ones which are aging.

Lead & Copper	Date(s) Collected	90th Percentile of Sample	Action Level	MCLG	# of Sites sampled	# of Sites Above Action Level	Exceeds Action Level?	Possible Source of Contamination
Lead (ppb)	2020	1	15	0	5	0	No	Corrosion of household plumbing systems
Copper (ppm)		0.028	1.3	1.3			No	Corrosion of household plumbing systems

Key to Tables

- ppm – Parts per million, corresponds to one penny in $10,000

- ppb – Parts per billion, corresponds to one penny in $10,000,000

- pCi/L – Picocuries per liter (a measure of radioactivity)

- ND – Not detected

- n/a - not applicable

- RAA –Running annual average

- TT—Treatment technique

TESTING FOR 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. **Sturbridge Retirement Co-Operative Corp.** 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.

SOME TERMS DEFINED

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

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 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.*

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

Massachusetts Office of Research and Standards Guideline (ORSG): *This is the concentration of a chemical in drinking water, at or below which, adverse, non-cancer health effects are likely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.*

Total Coliform: *A bacteria that indicates other potentially harmful bacteria may be present.*

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.*

90th Percentile: *Out of every 10 homes, 9 were at or below this level.*

SUMMARY OF FINISHED WATER CHARACTERISTICS

Regulated Contaminants	Date(s) Collected	Highest Detect Value	Range Detected	MCL	MCLG	Violation	Possible Source of Contamination
Inorganic Contaminants							
Fluoride (ppm)	5/24/21	0.9	ND-0.9	4	4	No	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Barium (ppm)	5/24/21	0.037	ND-0.037	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium (ppb) **	2021	6**	ND-6	4	4	Yes**	Discharge from electrical, aerospace, and defense industries; erosion of natural deposits
Nitrate (ppm)	5/24/21	0.183	ND-0.183	10	10	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Radioactive Contaminants							
Gross Alpha (pCi/L)	6/1/16	1.4	ND-1.4	15	0	No	Erosion of natural deposits
Radium 226 & 228 (combined) (pCi/L)	5/20/19	0.54	n/a	5	0	No	Erosion of natural deposits

Beryllium— Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

Regulated	Detect Result or Range	MCL	Violation	Possible Sources	Health Effects
PFAS6 (ppt)	Wells #1 & #2: 0 Well #3: 9.16 Well #4: 0 Well #5: 0	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.	Some people who drink water containing these PFAS in excess of the MCL may experience certain adverse effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. These PFAS may also elevate the risk of certain cancers.

Unregulated Contaminants	Date(s) Collected	Result or Range	Average	SMCL	ORSG or Health Advisory	Possible Source of Contamination
Inorganic Contaminants						
Sodium (ppm)	2021	14-117	42.2	-	20	Natural sources; runoff from use as salt on

Sodium is a naturally-occurring common element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. Some people, however, have difficulty regulating fluid volume as a result of several diseases, including congestive heart failure and hypertension. The guideline of 20 mg/L for sodium represents a level in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled. For additional information, contact your health care provider, your local board of health or the Massachusetts Department of Public Health, Bureau of Environmental Health Assessment at 617-624-5757.

Secondary Contaminants	Date(s) Collected	Result or Range	Average	SMCL	ORSG or Health Advisory	Possible Source of Contamination
Iron (ppb)	2021	ND-210	115	300	-	Naturally occurring, corrosion of cast iron pipes
Manganese (ppb)	2021	ND-54	15.43	50	300*	Erosion of natural deposits

*US EPA and MassDEP have established health advisory levels for manganese to protect against concerns of potential neurological effects.

Manganese is a naturally occurring mineral found in rocks, soil and groundwater and surface water. The USEPA and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 0.05 mg/L (50 micrograms per liter (ug/L) or 50 parts per billion (ppb)). At levels, greater than 0.05 mg/L, the water may appear brown, taste unpleasant and may leave black stains on bathroom fixtures and laundry. While manganese is part of a healthy diet, it can be harmful if consumed in large concentrations.

EPA has also set a health guideline for lifetime exposure to manganese in drinking water of 0.3 mg/L (300 ppb). EPA considered this level to be a protective limit for adults from potential neurological effects over a lifetime of exposure. For short-term 10-day exposures, EPA advises that levels in drinking water be below 1 mg/L (100 ppb). Infants and children less than 3 years of age should consume drinking water with manganese levels below 0.3 mg/L (300 ppb), or preferably as low as possible. This recommendation is based on concerns about effects to the nervous system that are more likely to occur in younger children, and because formula-fed infants/children already receive adequate manganese as an added essential nutrient in their formula. Formula fed infants or children may consume more manganese than the rest of the family if the manganese fortified formula is prepared with water that also contains manganese. In addition, young children appear to absorb more but excrete less manganese than older children. See: http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf.

SHOULD SOME PEOPLE TAKE SPECIAL PRECAUTIONS?

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 (800)426-4791.

Source Water Protection

The MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the Sturbridge Retirement Co-Operative. The report assesses the susceptibility of public water supplies to contamination and makes recommendations.

Wells #1 & #2 are not treated. Wells #3 & #4 use green sand filters, Well #5 is also not treated, but was not assessed during the 2002 assessment. pH adjusted with soda ash solution and backwashed with potassium permanganate solution to remove iron and manganese. A susceptibility ranking of **moderate** was assigned to all four wells.

This report is available in our main office, the Board of Health and also at the MassDEP website: http://www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2287020.pdf. If you have any questions, please contact **Darryl Ledoux at (508) 347-3212.**

FOR YOUR INFORMATION

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided to 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. 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 EPA's Safe Drinking Water Hotline (800-426-4791).

Where to go for more information ….

Massachusetts Department of Environmental Protection (MassDEP)
http://www.mass.gov/eea/agencies/massdep/water/drinking/

DRINKING WATER SUPPLY
Please conserve and protect it!

SOURCE WATER CHARACTERISTICS

The sources of drinking water in the United States (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, 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. These contaminants can also come from gasoline storage, urban storm water runoff, and septic systems.

- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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Cross Connection Control & Prevention

The outside watering tap and garden hose tend to be the most common sources of cross connections

What is a cross connection?

A cross connection occurs whenever a potable drinking water line is directly or indirectly linked to a piece of equipment or piping containing non-potable water.

Why should I be concerned about cross connections?

An unprotected or inadequately protected cross connection in your home or work place could contaminate the drinking water not only in your building, but in neighboring businesses and homes. Severe illnesses– even death– have been caused by cross connection contamination events that could have been prevented. Unprotected and inadequately protected cross connections have been known to cause outbreaks of hepatitis A, gastroenteritis, Legionnaire's disease, chemical poisoning, body lesions (from exposure through showering), damage to plumbing fixtures and explosions.

How can a cross connection contamination occur?

Non-potable water or chemicals used in equipment or a plumbing system can end up in the drinking waterline as a result of backpressure or backsiphonage. Backpressure occurs when the pressure in the equipment such as a boiler or air conditioning unit is greater than the pressure in the drinking water line.

Backsiphonage occurs when the pressure in the drinking water line drops due to fairly routine occurrences such as water main breaks, nearby fires, unusually heavy water demand. Contaminants are then sucked out and into the drinking water line.

What can I do to make sure my water supply is protected from cross connections?

At home:

- Contact your local water supplier to find out what he/she is doing to prevent cross connection contamination incidents.
- Survey your home to make sure you are not unknowingly creating a cross connection
- Do not attach any pesticide, chemical, or any other non-potable liquid applicators to your water line
- Install hose bibb vacuum breakers (HBVB) on all outside faucets. The HBVB isolates garden hose applications, protecting your drinking water supply from contaminants that could be drawn into your home through the hose.

At work:

- Contact your supervisor and/or maintenance personnel and find out if all cross connections within your workplace are protected.
- Find out when/if all backflow preventers have been tested.
- Ask you facility to provide you with information on its cross connection program.

In general:

- Find out all you can about cross connection control from DEP, your local water department, or a plumbing inspector.

For further information about our Cross Connection Control and Backflow Prevention Program please contact WhiteWater at

Phone: 888-377-7678
Fax: 508-248-2895
Email: mthompson@rhwhite.com

Backsiphonage may occur due to a water main break or other low-pressure incident such as a fire.