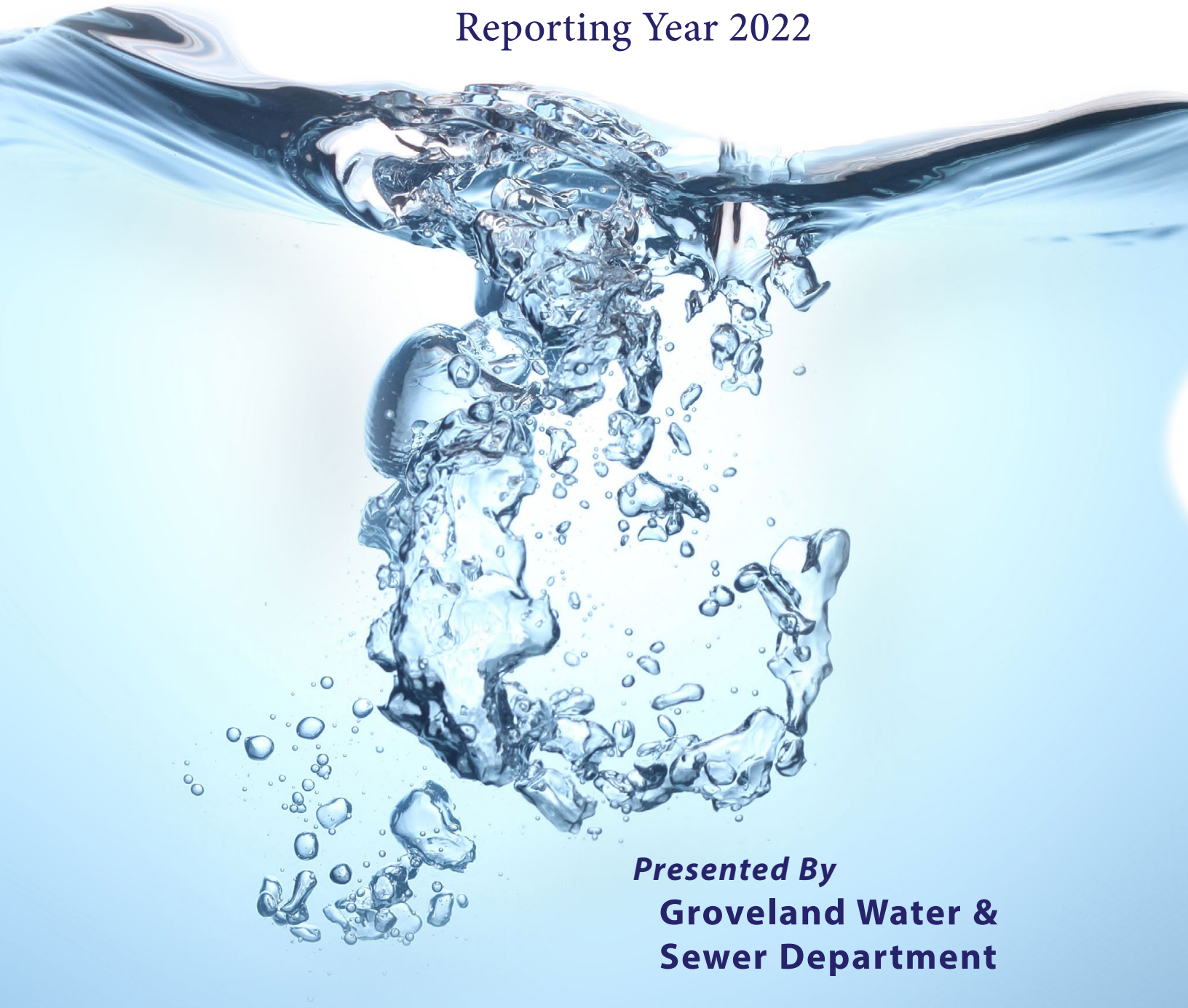


# ANNUAL WATER QUALITY REPORT

Reporting Year 2022



*Presented By*  
**Groveland Water &  
Sewer Department**



## Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

## Source Water Assessment

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the SWAP, our water system had a susceptibility rating of medium. If you would like to review the SWAP, please feel free to contact our office during regular office hours.

## Important Health Information

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 organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention)



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 (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

## Community Participation

You are invited to participate in our public forum to discuss any topic related to your drinking water and public water service. We meet once a month on a Monday night, typically at Town Hall. The meeting agenda is posted one week in advance; please contact our office for assistance. Check the town website, [www.grovelandma.com](http://www.grovelandma.com), for postings and meeting location.

## The Benefits of Fluoridation

Fluoride is a naturally occurring element in many water supplies in trace amounts. In our system the fluoride level is adjusted to an optimal level averaging 0.7 ppm to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. There are over 3.9 million people in 140 Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

### Where Does My Water Come From?



The Town of Groveland is served by a groundwater supply consisting of three gravel-packed wells. Well 1 is located at 462 Main Street, Well 3 is located behind the Pines Recreation Area, and Well 4 is located further down the river from Well 3. Wells 1 and 3 are serviced by vertical turbine pumps that draw water from 50 feet below the surface. The pumps are connected by long shafts to the drive motors, which are housed in the building above the wells. Well 4 uses a submersible well pump comprised of a sealed motor and pump mounted underwater 35 feet down. Each well can run independently of the others.

Groveland's water is distributed through a network of water mains approximately 36.5 miles long, ranging in size from 2 to 12 inches in diameter. There are currently 1,971 active services connected to our system.

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call the Groveland Water Department office at (978) 556-7220 and ask to speak with Colin Stokes.

## Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 two 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 at (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting 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, which 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 contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The 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. Substances 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, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 which may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

### BY THE NUMBERS



The number of Olympic-sized swimming pools it would take to fill up all of Earth's water.

**800**  
TRILLION

**1**

The average cost in cents for about 5 gallons of water supplied to a home in the U.S.

The percent of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers.

**99**

**50**

The average daily number of gallons of total home water use for each person in the U.S.

The percent of Earth's surface that is covered by water.

**71**



## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

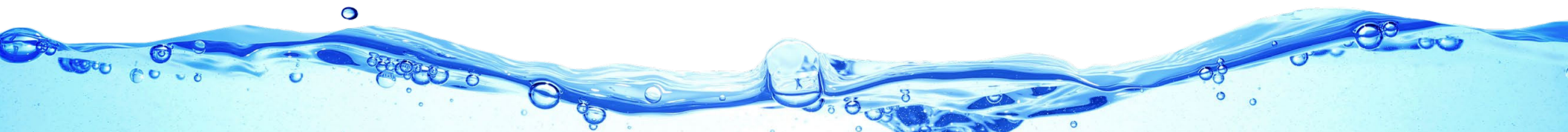
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2021	2	2	0.015	0.010–0.015	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2022	[4]	[4]	0.18	0.12–0.28	No	Water additive used to control microbes
Combined Radium (pCi/L)	2015	5	0	0.44	NA	No	Erosion of natural deposits
Fluoride (ppm)	2022	4	4	0.5	0.3–0.5	No	Water additive which promotes strong teeth
Nitrate (ppm)	2022	10	10	1.22	0.53–1.22	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
PFAS6 (ppt)	2022	20	NA	9.5	4.1–15	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 firefighting foams.
TTHMs [total trihalomethanes]– Stage 2 (ppb)	2022	80	NA	22.9	19.1–22.9	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2021	1.3	1.3	0.13	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2021	15	0	2.3	0/20	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

### SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2022	250	NA	121	28.5–121	No	Runoff/leaching from natural deposits
Iron (ppb)	2022	300	NA	632	100–632	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2022	50 <sup>1</sup>	NA	150	105–187	No	Leaching from natural deposits
Odor (TON)	2022	3	NA	1.3	1.3–1.3	No	Naturally occurring organic materials
pH (units)	2022	6.5–8.5	NA	7.95	7.85–7.95	No	Naturally occurring
Sulfate (ppm)	2022	250	NA	14.6	11.8–14.6	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2022	500	NA	320	170–320	No	Runoff/leaching from natural deposits
Zinc (ppm)	2022	5	NA	0.004	0.004–0.004	No	Runoff/leaching from natural deposits; Industrial wastes



## UNREGULATED SUBSTANCES<sup>2</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Perfluorobutanesulfonic Acid [PFBS] (ppt)	2022	2.2	1.4–4.4	NA
Perfluorohexanesulfonic Acid [PFHxS] (ppt)	2022	1.62	0.68–3.7	NA
Perfluorononanoic Acid [PFNA] (ppt)	2022	0.18	ND–0.986	NA
Perfluorooctanesulfonate Acid [PFOS] (ppt)	2022	2.81	0.89–5.56	NA
Perfluorooctanoic Acid [PFOA] (ppt)	2022	3.54	2.5–4.9	NA
Sodium (ppm)	2021	53	28–83	Naturally occurring

<sup>1</sup>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 it can have undesirable effects on certain sensitive populations at elevated concentrations. U.S. EPA and DEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects.

<sup>2</sup>Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

## Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water sources, and then in-line chemical treatment (no filtration) is performed. Computer-controlled metering pumps are used to administer the chemical, and chemistry is monitored by in-line analyzers 24/7. Our treatment operators monitor the system daily and confirm the treatment goals.

Sodium hydroxide is added to make the water less corrosive by raising the pH. Corrosive (acidic) water has the ability to leach lead and copper out of piping and plumbing fixtures. We raise the system pH to an average of 7.6 (just above neutral, or 7.0). This is high enough to keep the lead and copper from dissolving and still keep most of the iron and manganese in solution form.

Fluoride is added to the water as sodium fluoride to fight dental cavities. Both sodium and fluoride occur naturally in small amounts in the groundwater in this area. Natural fluoride occurs at a range of 0.05 to 0.10 milligram per liter, or part per million (ppm). The fluoride is added to achieve a target dose of 0.70 ppm to help build stronger, more cavity-resistant teeth for all who drink the water in their developmental years.

Calcium hypochlorite is added to maintain a disinfection residual at an average of 0.17 ppm throughout the distribution system. A target dose of 0.50 ppm has been established to achieve this residual.

## Definitions

**90th %ile:** 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.

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

**MCL (Maximum Contaminant Level):** 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.

**MCLG (Maximum Contaminant Level Goal):** 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.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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 contaminants.

**NA:** Not applicable.

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**ppt (parts per trillion):** One part substance per trillion parts water (or nanograms per liter).

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

**TON (Threshold Odor Number):** A measure of odor in water.

