

A dynamic, high-speed photograph of water splashing against a light blue background. The water is captured in mid-air, creating a complex pattern of droplets and streams that flow from the bottom right towards the top left. The lighting highlights the transparency and texture of the water, giving it a sense of movement and freshness.

ANNUAL WATER QUALITY REPORT

Reporting Year 2021

Presented By
**Groveland Water &
Sewer Department**



We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. Our staff continues to work hard every day—at all hours—to deliver the drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

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.

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.

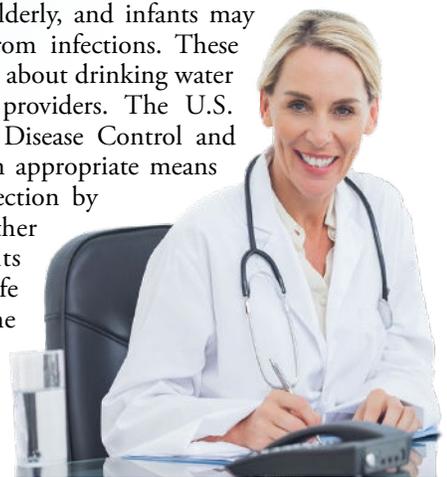
“When the well is dry, we know the worth of water.”

—Benjamin Franklin

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 those with cancer undergoing chemotherapy, those 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>.



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 comprising a sealed motor and pump mounted underwater 35 feet down in the well. Each of the wells can run independently.



Groveland's water is distributed through a network of water mains approximately 36.5 miles long and 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.

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 Monday nights, once a month, at our office located in Town Hall. The meeting agenda is posted one week in advance; please contact our office for assistance. Visit the town website, www.grovelandma.com, for postings and meeting location.

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 is performed (no filtration). Computer-controlled metering pumps are used to administer the chemical, and chemistry is monitored by in-line analyzers 24 hours a day, seven days a week. 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 (7.0). This is high enough to keep the lead and copper from dissolving very much and still keep most of the iron and manganese in solution.

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 (mg/L). The fluoride is added to achieve a target dose of 0.70 mg/L 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 0.14 mg/L throughout the distribution system. A target dose of 0.50 mg/L has been established to achieve this residual.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the Massachusetts 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 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 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;

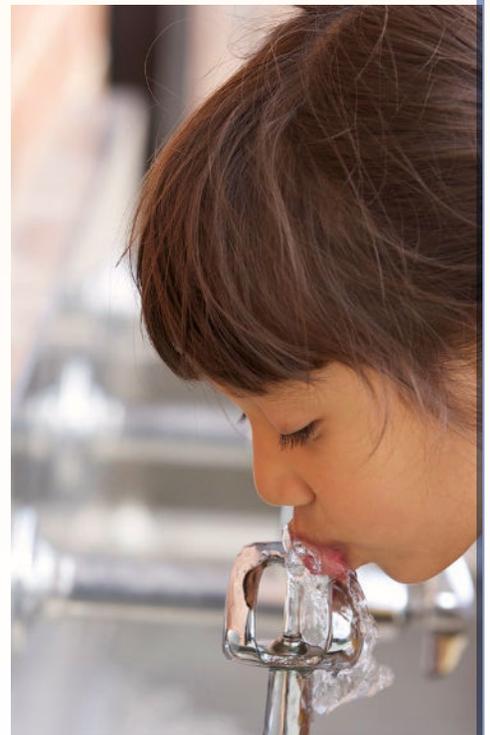
Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

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 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.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. DEP sets this sampling schedule, and we are required to submit our sampling results monthly to DEP. Here, we show only 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 often 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)	2021	[4]	[4]	0.23	0.10–0.23	No	Water additive used to control microbes
Combined Radium (pCi/L)	2015	5	0	0.44	NA	No	Erosion of natural deposits
Fluoride (ppm)	2021	4	4	0.5	0.4–0.5	No	Water additive that promotes strong teeth
Nitrate (ppm)	2021	10	10	1.12	0.74–1.12	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
PFAS6 (ppt)	2021	20	NA	11.1	4.6–15	No	Discharges and emissions from industrial and manufacturing sources associated with moisture- and oil-resistant coatings on fabrics and other materials; Firefighting foams
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2021	80	NA	21	17–21	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)	2021	250	NA	122	28.3–122	No	Runoff/leaching from natural deposits
Iron (ppb)	2021	300	NA	457	99–457	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2021	50 ¹	NA	186	131–186	No	Leaching from natural deposits
Odor (TON)	2021	3	NA	1.3	1.3–1.3	No	Naturally occurring organic materials
pH (units)	2021	6.5–8.5	NA	7.96	7.94–7.96	No	Naturally occurring
Sulfate (ppm)	2021	250	NA	14.6	12.7–14.6	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2021	500	NA	320	150–320	No	Runoff/leaching from natural deposits
Zinc (ppm)	2021	5	NA	0.004	0.003–0.004	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES²

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Perfluorobutanesulfonic Acid [PFBS] (ppt)	2021	1.95	1.6–2.3	NA
Perfluorohexanoic Acid [PFHxA] (ppt)	2021	3.85	2.2–5.5	NA
Sodium (ppm)	2021	53	28–83	Naturally occurring

¹ Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. The U.S. EPA and DEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects.

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

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 that, if exceeded, triggers treatment or other requirements that 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.

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.



BY THE NUMBERS

The number of Americans who receive water from a public water system.

300
MILLION

1
MILLION

The number of miles of drinking water distribution mains in the U.S.

The number of gallons of water produced daily by public water systems in the U.S.

34
BILLION

135
BILLION

The amount of money spent annually on maintaining the public water infrastructure in the U.S.

The number of active public water systems in the U.S.

151
THOUSAND

199
THOUSAND

The number of highly trained and licensed water professionals serving in the U.S.

The age in years of the world's oldest water, found in a mine at a depth of nearly two miles.

2
BILLION