



This report was prepared by:  
GROVELAND WATER & SEWER  
183 Main Street  
Groveland, MA 01834

## Quality First

Once again we are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2010. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us to continue providing you and your family with quality drinking water.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions or concerns, we are always available to assist you.



For more information about this report, or for any questions relating to your drinking water, please call Thomas D Cusick Jr, Water Department Superintendent, at (978) 556-7219.

## Where Does My Water Come From?

Water for Groveland's groundwater supply consists of three gravel packed wells. Well #1 at 462 Main Street, Well #3 behind the Pines Recreation Area and Well #4 further down the river. At Wells #1 and #3 the vertical turbine pumps are down 50 feet with long shafts to the drive motors which are housed in the building above the wells. Well #4 uses a submersible well pump with a sealed motor mounted under water with the pump 35 feet down in the well. Each of the wells can run independently of each other. Groveland's water is distributed through a network of water mains approximately 36.5 miles long and ranging in size from 4 to 12 inches in diameter. There are currently 1909 active services connected to our system.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (Department) and the U.S. Environmental Protection Agency (U.S. EPA) prescribes 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.

## What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at <http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/index.cfm>. You can also call the Safe Drinking Water Hotline at (800) 426-4791.

## WATER CONSERVATION

The total volume of water pumped from these wells in 2010 was 148.1 million gallons. This was up from 131.4 million gallons pumped in 2009. This was likely due to a hot summer. We continually check for leaks and repair them when found to minimize the amount of water wasted. The Towns Unaccounted for Water (UAW) is 8%, DEP Set a standard not to exceed 10%.

### YOU TOO CAN HELP SAVE WATER

Keep water in the refrigerator to chill it instead of letting the faucet run for a glass of water. Water your lawn wisely. Water deeply in the morning. Do not over water, keep your mower sharp and don't cut too short. A healthy lawn needs less water to look good. Repair leaks. (Your water meter has a red diamond on it to help you catch small leaks. If it turns when everything is off, you have a leak, probably a toilet.)

### WHAT IS NEW

The SCADA project was awarded in March 2011, construction should begin in April with completion set for this Summer. The addition of SCADA will give the operators the ability to monitor the system by computer at all times. Preliminary engineering for a new .8 million gallon water storage tank was completed this spring. Bid procurement is set for this summer with anticipated construction in the fall 2011.

## Water Treatment Process

### WHAT IS ADDED TO THE WATER ? WHY ?

Sodium Hydroxide is added to make the water less corrosive by raising the pH. Corrosive water can dissolve Lead and Copper out of water services and household plumbing. We raise the system pH to an average near 7.2 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 ground water in this area. Natural Fluoride occurs at about 0.05 to 0.1 mg/L. The fluoride is added to the water at about 1.0 mg/l to help build stronger, more cavity resistant teeth for all those who DRINK the water in their developmental years. The Groveland Water & Sewer Department is aware of the proposed Health and Human Services recommendations and will review our processes in light of the final recommendation. We will also pay close attention to regulatory developments and stand ready to respond.

Calcium Hypochlorite is added to maintain a disinfection residue through out the distribution system, target dose range is 0.25 to 0.50 mg/l.

## 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>.

## 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 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 [www.epa.gov/safewater/lead](http://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.

If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours.



### Why do I get this report each year?

Community water system operators are required by Federal law to provide their customers an annual water quality report. The report helps people make informed choices about the water they drink. It lets people know what contaminants, if any, are in their drinking water and how these contaminants may affect their health. It also gives the system operators a chance to tell customers what it takes to deliver safe drinking water.

### How much water is used during a typical shower?

The Federal Energy Policy Act set a nationwide regulation that limits showerheads to a maximum flow of 2.5 gallons per minute (GPM). Showerheads made before 1980 are rated at 5 GPM. Since the average shower is estimated to last 8.2 minutes, the old showerheads use 41 gallons of water while the newer, low-flow showerheads use only about 21 gallons.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state allows us to monitor 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
Chlorine <sup>1</sup> (ppm)	2010	[4]	[4]	0.15	0.13–0.18	No	Water additive used to control microbes
Fluoride (ppm)	2010	4	4	1.0	0.70–1.2	No	Water additive which promotes strong teeth
Nitrate (ppm)	2010	10	10	0.19	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
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%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2009	1.3	1.3	0.29	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2009	15	0	3.1	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
OTHER REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
TTHMs [Total Trihalomethanes]–IDSE Results <sup>2</sup> (ppb)	2010	80	NA	6.6	4.3–8.9	No	By-product of drinking water disinfection
SECONDARY SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2010	250	NA	8.2	NA	No	Runoff/leaching from natural deposits
Copper (ppm)	2010	1.0	NA	0.0041	NA	No	Corrosion of household plumbing systems; Erosion of natural deposits
Iron <sup>3</sup> (ppb)	2010	0.003	NA	0.037	NA	No	Leaching from natural deposits; Industrial wastes
Manganese <sup>4</sup> (ppb)	2010	50	NA	140	49–230	No	Leaching from natural deposits
Odor (TON)	2010	3	NA	2	NA	No	Naturally-occurring organic materials
Sulfate (ppm)	2010	250	NA	20	13–25	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2010	500	NA	316	100–520	No	Runoff/leaching from natural deposits
Zinc (ppm)	2010	5	NA	0.0034	NA	No	Runoff/leaching from natural deposits; Industrial wastes
pH (Units)	2010	6.5–8.5	NA	7.34	7.1–7.5	No	Naturally occurring
UNREGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE			
Bromoform (ppb)	2010	0.94	NA	NA			
Sodium <sup>5</sup> (ppm)	08/07/2008	26	7.9–37	Road Salt			

<sup>1</sup>Footnote for DEP ID# 10001,10002,10004: Chlorine is added to maintain disinfection through out the distribution system.

<sup>2</sup>Footnote for DEP ID# 10001,10002,10004: Total Trihalomethanes are a by-product of the disinfection process.

<sup>3</sup>Footnote for DEP ID# 10001,10002,10004: This is a secondary contaminant no action required.

<sup>4</sup>Footnote for DEP ID# 10001,10002,10004: EPA has established a lifetime Health Advisory for manganese at 300 ppb(ug/L)and an acute HA at 1000 ppb(ug/L), this is a secondary contaminant no action required.

<sup>5</sup>Footnote for DEP ID# 10001,10002,10004: There is no MCL on this contaminant, DEP does have a guigeline (ORSG) limit of 20 mg/L based on an 8oz serving.

Manganese is a naturally occurring mineral. At la evel greater than 50 ppb the water will appear brown, taste unpleasant, and may leave black stains on fixtures or on laundry. While manganese is part of a healthy diet, it can be harmful if consumed in large concentrations; infants should not drink water that contains manganese above this level, especially if they are bottle fed.

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.

## Definitions

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

**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.

**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).

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

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