

2008  
ANNUAL

# WATER QUALITY REPORT

*Water testing performed in 2008*



TOWN OF MANSFIELD

PWS ID#: 4167000

## Meeting the Challenge

The Town of Mansfield's Water Division proudly presents to you its annual water quality report. This edition covers all testing completed from January 1, 2008 through December 31, 2008, as well as interesting topics related to the water system.

As new challenges to drinking water safety emerge, Mansfield Water keeps its focus on the big picture. Producing drinking water that meets all state and federal drinking water standards remains a top priority as we continually strive to adopt better and more cost-efficient methods for delivering the best-quality drinking water to you. Our business enterprise remains vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Mansfield Water is the honored recipient of the "2008 Utility of the Year Award" presented by the New England Water Works Association. Additional awards presented to Mansfield Water this year include: Public Communications, Top Water Community - Large Systems, and the Massachusetts Department of Public Health Fluoride Award.

**Kurt E. Gaffney**, Water Operations Manager



New England Water Works Association; Christopher Woodbridge (left) presents the 2008 Utility of the Year and Public Communications Award awards to Mansfield Water Operation Manager, Kurt E. Gaffney (right).

## 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.

## Where Does My Water Come From?

Our water source for the Town of Mansfield comes from the Ten Mile River Basin and the Taunton River Basin. The Town's water is currently supplied from nine gravel-packed wells and one well field. Our Cate Springs Well is located off of Maple Street in Mansfield and pumps 1,100 gpm (gallons per minute). Albertini Well #2 pumps 500 gpm and Albertini Well #3 pumps 300 gpm; both are located off of West Street. Mahana Well #6 pumps 700 gpm and Morrison Well #10 pumps 695 gpm; these wells are both located off of Plain Street. Dustin Well #7 pumps 800 gpm and is located off of East Street. Prescott Well #8 pumps 700 gpm and Prescott Well #9 pumps 500 gpm; these two are both located off of East Street. The Town of Mansfield proudly opened a new Water Treatment Facility to remove iron and manganese from the Dustin and Prescott Wells. The Walsh well field, which pumps 1,042 gpm, is located off of Gilbert Street and also includes a treatment facility that removes iron and manganese. The Town of Mansfield has interconnection agreements with the Towns of Easton, Norton, and Foxboro to supply water in emergency situations. A small number of residences in West Mansfield receive water from the City of Attleboro Water System.

## Community Participation

Members of the Mansfield Board of Selectmen also serve in the roles of water and sewer commissioners for the Town. The Board meets every Wednesday evening at 7:00 p.m. at the Mansfield Town Hall (third floor, Conference Room 3A/3B), Six Park Row, Mansfield, Massachusetts. Mansfield water customers are welcome to participate in these public meetings.



Mansfield officials accept top awards at the Massachusetts Public Drinking Water Day Ceremony, May 7, 2008

## Source Water Assessment

The Massachusetts Department of Environmental Protection has completed a Source Water Assessment and Protection (SWAP) report for the Town of Mansfield's water supply. The report contains information relative to land uses in the water supply areas of our wells, which are highly susceptible to potentially being contaminated. The report also contains several recommendations including the use of best management practices and the performance of regular watershed inspections. These recommendations are being addressed through annual sanitary surveys of the aquifer areas and the management of stormwater discharges. As a member of the community, you can assist our efforts by limiting the use of pesticides and fertilizers on your lawn and by properly disposing of hazardous household chemicals. Anyone who wishes to read the report in its entirety may do so by contacting our office during regular business hours or by going online to [www.mass.gov/dep/water/drinking/4167000.pdf](http://www.mass.gov/dep/water/drinking/4167000.pdf).

## Questions?

For questions or concerns related to your drinking water or about this report, contact Kurt E. Gaffney, Water Operations Manager (508) 261-7376. Mansfield Water invites its customers to participate in our Water Email Notification System Program. The program allows you to receive electronic updates via e-mail regarding periodic water incidents that may/or may not impact water service (i.e. hydrant flushing, construction repairs, etc.). Send a request to join this free program today: [emccarter@mansfieldma.com](mailto:emccarter@mansfieldma.com).

## Lead and Drinking Water

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 your home's plumbing. The Town of Mansfield's Water Division 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 two minutes before using the 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).

## Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council (NRDC), bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25% of bottled water is actually just bottled tap water (40% according to government estimates).

The U.S. Food and Drug Administration (FDA) is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70% of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion of the NRDC study results, check out their Web site at [www.nrdc.org/water/drinking/bw/exesum.asp](http://www.nrdc.org/water/drinking/bw/exesum.asp).



## 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. Fertilizers, cesspools, or garden chemicals may contaminate garden hoses that are left lying on the ground. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continually jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

For more information, review the Cross-Connection Control Manual on the U.S. EPA's Web site at [www.epa.gov/safewater/crossconnection.html](http://www.epa.gov/safewater/crossconnection.html). You can also call the Safe Drinking Water Hotline at (800) 426-4791.

## Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip

can waste from 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.

- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and appliances that use water. Then check the meter after 15 minutes. If it moved, you have a leak.

## 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 the 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.

## 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. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The Town receives a sample schedule each year issued by the Massachusetts Department of Environmental Protection. Included in this schedule was a waiver for sampling inorganic and synthetic organic compounds from 2005 through 2007.

The state requires 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 (ppm)	2008	4	4	0.10	ND–0.55	No	Water additive used to control microbes
Dichloromethane (ppb)	2008	5	0	0.58	ND–2.9	No	Discharge from pharmaceutical and chemical factories
Ethylbenzene (ppb)	2008	700	700	0.48	ND–2.4	No	Discharge from petroleum refineries
Fluoride (ppm)	2008	4	4	1.01	0.89–1.12	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2008	60	NA	11.41	ND–20.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2008	10	10	0.69	ND–1.68	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2008	2	NA	0.092	ND–0.15	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks and explosives.
TTHMs [Total Trihalomethanes] (ppb)	2008	80	NA	17.47	ND–46.4	No	By-product of drinking water chlorination
Total Coliform Bacteria (# positive samples)	2008	1 positive monthly sample	0	1	NA	No	Naturally present in the environment
Xylenes (ppb)	2008	10,000	10,000	3.96	ND–19.8	No	Discharge from petroleum factories; Discharge from chemical factories

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)	2007	1.3	1.3	0.5	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2007	15	0	4	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

### SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	EXCEEDANCE	TYPICAL SOURCE
Color (Units)	2008	15	NA	27	5–35	Yes <sup>1</sup>	Naturally-occurring organic materials

### IDSE SAMPLING RESULTS<sup>2</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Haloacetic Acids [HAA]- IDSE Results (ppb)	2008	4.9	ND–13.8	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–IDSE Results (ppb)	2008	16.43	0.6–36.8	By-product of drinking water disinfection

<sup>1</sup> Color was detected in our water supply at levels exceeding the established state secondary MCLs (SMCLs), which were set to protect against unpleasant aesthetic effects such as color, taste, odor, and staining of plumbing fixtures (e.g., tubs and sinks) and of clothing during laundering. There are no adverse health effects expected with this exceedance.

<sup>2</sup> We were required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Disinfection by-products, e.g., HAAs and TTHMs, result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

## 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).