

ANNUAL  
**WATER**  
QUALITY  
**REPORT**

*Water testing performed in 2010*

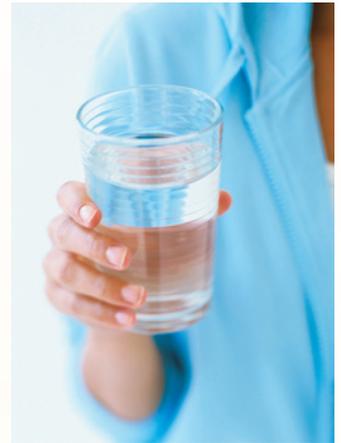
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Mansfield, MA 02048

## Quality First

The Town of Mansfield, Water Division, is proud to present its 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.



Mansfield Water is a division of the Department of Public Works operating under DPW Director Lee Azinheira. For questions relating to your drinking water, please call Kurt E. Gaffney, Water Operations Manager, at (508) 261-7376.

## Community Participation

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

## Where Does My Water Come From?

The water source for the Town of Mansfield comes from the Ten Mile River Basin and the Taunton River Basin. The Town water is presently supplied from nine gravel-packed wells and one well field located in Mansfield. Cate Springs Well #1 is located off of Maple Street and pumps 1,100 gallons per minute (gpm). Albertini Well #2 pumps 500 gpm, Albertini Well #3 pumps 300 gpm, and Albertini Well #4 pumps 250 gpm; these three wells are located off of West Street and are inactive at this time. 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; it is located off of East Street and includes a treatment facility to remove iron and manganese. Prescott Well #8 pumps 700 gpm and Prescott Well #9 pumps 500 gpm; these wells are both located off of East Street. The Walsh Wellfield, which pumps 1,042 gpm, is located off of Gilbert Street and includes a treatment facility that removes iron and manganese. A small number of residences in West Mansfield are provided water by the City of Attleboro Water System. The Town of Mansfield has interconnected with and has agreements with the towns of Easton, Norton, and Foxboro, MA, to supply water in emergency situations.

## Source Water Assessment

The Massachusetts Department of Environmental Protection completed a Source Water Assessment Plan (SWAP) for the Mansfield Water Division. The report is used as a planning tool to support local and state efforts to improve water supply protection. The plan includes 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 Source Water Assessment Plan, Mansfield wells received a susceptibility rating of either moderate or high. Recommendations focus on Best Management Practices and drinking water source protection measures.

The Mansfield Water Division is commended in the SWAP report conclusion for taking an active role in promoting source protection measures in the Water Supply Protection Areas. Protection measures include passing local controls that meet MA Wellhead Protection Regulations 310 CMR 22.21(2), developing a Wellhead Protection Plan, passing regulations to control floor drains, receiving grant money to hire a consultant to perform floor drain inspections, developing a master plan for the water system, and installing a SCADA system and alarms. To review a copy of the Source Water Assessment Plan, contact the Water Division during regular office hours (7:00 a.m. – 3:00 p.m.).

## Federal Ground Water Rule (GWR)

### Presence of *E. coli* in ground water sample from Cate Springs Well #1

The Mansfield Water Division was informed on June 2, 2010, that one of its routine bacteria samples collected (June 1, 2010) from the raw ground water source at Well #1 prior to treatment, was *E. coli* positive. All of the water that entered the public water distribution system was treated.

In response to this incident, the Water Division consulted with the Massachusetts Department of Environmental Protection Drinking Water Program and followed all required federal Ground Water Rule (GWR) procedures to properly address the situation.

As required, on June 2, 2010 the Water Division collected five additional samples from the ground water source (pretreatment) at Well#1 for fecal contamination analysis, and immediately placed Well #1 out of service. Although four out of the five of these samples were confirmed positive for fecal contamination (*E. coli*), all treated water samples collected and tested from the public water system were absent of *E. coli* bacteria. A public notice was issued to all Mansfield water customers within 24 hours of learning of the positive samples in the ground water source. The notice appeared in The Sun Chronicle newspaper, on the Town of Mansfield Web site ([www.mansfieldma.com](http://www.mansfieldma.com)), and on cable access TV.

To correct this situation, the Water Division is moving forward with construction of a new treatment plant for Well #1, which will achieve a 4-log removal or inactivation of viruses. Completion of the new facility is expected in 2011. In the interim, water is needed from Well #1 to meet customer demand. On June 24, 2011 the Water Division submitted a Temporary 4-log Treatment Plan for Well #1 to the Massachusetts Department of Environmental Protection for approval. The plan was approved by the Mass DEP on 7/2/10 and is currently being implemented on a temporary basis.

The Mansfield Water Division uses a variety of resources to keep its customers informed of periodic water incidents that may or may not impact water service (i.e., emergency repairs, hydrant flushing, temporary water shut-offs, etc.). Customers can find these types of notices posted on the town Web site at [www.mansfieldma.com](http://www.mansfieldma.com), click "Notices"; on Mansfield Cable Access Channel 15 (FiOS 27); and by direct communication through the Water Email Notification System. To add your name to the distribution list, send a request to [emccarter@mansfieldma.com](mailto:emccarter@mansfieldma.com). For general questions related to the public drinking water system, contact Water Operations Manager Kurt E. Gaffney at (508) 261-7376.

## 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) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. 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, untreated ground water, 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.

## About Our Total Coliform Violation

**N**ON & RTC-SE-09-5D140: In July 2009, the Town incurred a violation from the Massachusetts Department of Environmental Protection (DEP) for one Total Coliform MCL (Maximum Contaminant Level) exceedance within a 12-month period. The Water Division collected a total of 65 samples in July to test for the presence of coliform bacteria. Five (5) of our tested samples returned positive coliform results. The drinking water standard is that no more than five percent (5%) of the samples taken per month may test positive.

Additional samples were collected and tested to ensure that the quality of the water continued to meet state regulation C310 CMR 22.05, Maximum Microbiological Contaminant Levels, Monitoring Requirements and Analytical Methods. Samples collected on July 30, 2009, and tested for coliform bacteria all returned negative results. As an added precaution, the Water Division chlorinated and flushed pipes in the distribution system to ensure that the bacteria were eliminated. A public notice, "Situation Resolved," was published August 17, 2009, with DEP approval.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed, and this was a warning of potential problems.

## Important Health Information

**S**ome 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/>.

## Lead in Home Plumbing

**I**f 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).

## The Benefits of Fluoridation

**F**luoride 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 one part per million (ppm) to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. Our water system has been providing this treatment since 1997. There are over 3.9 million people in 140 Massachusetts water systems and 184 million people in the United States who receive the health and economic benefits of fluoridation.

## Fact or Fiction

There is the same amount of water on Earth now as there was when the Earth was formed. *(Fact: The water that comes from your faucet could contain molecules that dinosaurs drank!)*

About half the water treated by public water systems is used for drinking and cooking. *(Fiction: Actually, the amount used for cooking and drinking is less than 1% of the total water produced!)*

A person can live about a month without food, but only about a week without water. *(Fact: Dehydration symptoms generally become noticeable after only 2% of one's normal water volume has been lost.)*

The first water pipes in the U.S. were made of cast iron. *(Fiction: The first water pipes were actually made of fire-charred bored logs.)*

The world's first municipal water filtration plant was opened in the United States. *(Fiction: The first plant was actually opened in Paisley, Scotland, in 1832.)*

A person must consume a half-gallon of water daily to live healthily. *(Fact: A person should drink at least 64 ounces, or 8 cups, of water each day.)*

One gallon of gasoline poured into a lake can contaminate approximately 750,000 gallons of water. *(Fact)*

## 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 (ppm)	2010	[4]	[4]	0.17	0.01–1.16	No	Water additive used to control microbes
Combined Radium <sup>1</sup> (pCi/L)	2009	5	0	0.66	NA	No	Erosion of natural deposits
<i>E. coli</i> [at the groundwater source] <sup>2,3</sup> (# positive samples)	2010	NA	NA	5	NA	No	Human and animal fecal waste in untreated groundwater
Fecal Indicators [ <i>E. coli</i> , enterococci or coliphage] Ground Water Rule <sup>2,3</sup> (# positive samples)	2010	TT	NA	5	NA	No	Human and animal fecal waste in untreated groundwater
Fluoride (ppm)	2010	4	4	1.03	0.86–1.25	No	Water additive which promotes strong teeth
Haloacetic Acids [HAA] (ppb)	2010	60	NA	7.02	ND–22.8	No	By-product of drinking water disinfection
Nitrate (ppm)	2010	10	10	0.42	ND–0.92	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2008	2	NA	0.09	ND–0.15	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
TTHMs [Total Trihalomethanes] (ppb)	2010	80	NA	20.58	5–41	No	By-product of drinking water disinfection
Total Coliform Bacteria (# positive samples)	2009	1 positive monthly sample	0	5	NA	Yes	Naturally present in the environment

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)	2010	1.3	1.3	0.67	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2010	15	0	4	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES <sup>4</sup>				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2010	0.8	ND–2.5	By-product of drinking water disinfection
Bromoform (ppb)	2010	0.15	ND–0.6	By-product of drinking water disinfection
Chloroform (ppb)	2010	0.8	ND–2.7	By-product of drinking water disinfection
Sodium (ppm)	2010	42.8	ND–42.8	Naturally present in the environment; Runoff from road salt; By-product of drinking water treatment process

## INITIAL DISTRIBUTION SYSTEM EVALUATION RESULTS <sup>5</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Haloacetic Acids [HAA]—IDSE Results (ppb)	2009	7.31	ND–35.1	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]—IDSE Results (ppb)	2009	16.20	ND–49.9	By-product of drinking water disinfection

<sup>1</sup> Only one sample was collected in 2009.

<sup>2</sup> See the “Federal Ground Water Rule (GWR) Violation” section in this report.

<sup>3</sup> Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

<sup>4</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 the U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

<sup>5</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.

**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).

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