

# 2008 Water Quality Report

Haverhill Water  
Department

Robert Ward,  
Superintendent/Engineer  
Water and Wastewater

## From the Director

Dear Valued Customer:

June, 2009

On behalf of the Haverhill Water Department, I am pleased to present our 2008 Water Quality Report. Each year, the Safe Drinking Water Act (SDWA) requires all water utilities to provide a "Consumer Confidence Report" to its customers, along with any additional notices required by law. Its purpose is to inform our customers on what has been found in the water and update you on what has been accomplished in the previous year.

The Haverhill Water Department is dedicated to providing our community with water of the highest quality. This report contains information on levels of substances that are present in your tap water. All drinking water, including bottled water, can be expected to contain at least small amounts of some contaminants. This does not indicate that the water poses a health risk.

Please take time and review the report. It can also be found on the City website, [www.ci.haverhill.ma.us/departments/water/water\\_system/treatment](http://www.ci.haverhill.ma.us/departments/water/water_system/treatment). If you have any questions, please call Mary D'Aoust at the Water Treatment Plant at (978) 374-2385.

Sincerely,  
Robert Ward, Acting Director

## Contact Information

Water/Wastewater  
Administration  
(978) 374-2382

Water Billing and Collection  
(978) 374-2370

Water Maintenance and Service

Water Meters  
(978) 373-8487

Water Treatment Plant  
(978) 374-2385

Backflow/Cross Connections  
(978) 374-2375

Wastewater Department  
(978) 374-2382

EPA Safe Drinking Water  
Hotline  
(800) 426-4791

**Public Water Supply #  
3128000**

## About your water sources

Our drinking water comes from a combined water source, all of which are surface water. Water is pumped from Millvale Reservoir and Crystal Lake into Kenoza Lake where the Water Treatment Plant is located. Round Pond and Winnekenni Basin overflows into Kenoza Lake.

At the Water Treatment Plant, the water goes through a conventional filtration plant, which includes coagulation, flocculation, and sedimentation. Coagulation is the first process where aluminum sulfate mixes with the water which causes the microscopic particles to want to clump together. This

makes them easier to remove. Flocculation is a continuation of the coagulation process where the water is stirred, encouraging the particles to become bigger.

As this is happening, the water flow is slowed down and enters the sedimentation basins. Here, most of the larger particles are now heavy enough to settle to the bottom of the basin and the clearer water is collected and routed toward the filters.

Haverhill has a two stage filtration process. Water will go through a dual media (sand and anthracite) filter and then directed into an activated carbon filter. After filtration, the water is disinfected, and then the finished product is pumped into the distribution

system. Haverhill's water is also fluoridated. Last year, the Water Treatment Plant processed 2.1 billion gallons of water.

The distribution system is made up of three storage tanks with a capacity of 17 million gallons, twelve pumping stations, and approximately 300 miles of water main.

*Conservation is easy. Free low-flow showerheads, faucet aerators, and conservation kits are available from the City Hall Water/Wastewater Billing Office at (978)374-2370.*

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo o hable con alguien que lo

Η κατωθεν αναφορα παρουσιαζει σπουδαιες πληροφοριες για το ποσιμο νερο σας. Πρακακλω να το μεταφρασετε η να το σξολειασετε με καποιον που το καταλαβαινη απολητως.

## A Year in Review

The city has begun work on a comprehensive water system master plan that will evaluate the city's entire water supply system from source to distribution. The last major water system evaluation was performed in 1996. Many changes to the water system have happened since that time to improve the level of service. This comprehensive water system master plan will incorporate all of the past improvements and assess the water system needs of the city for the next ten to twenty years.

Work continued on a study of ground-water quality and quantity from test wells along the Merrimack River. The

water department must look for viable water sources to provide redundancy in case of emergencies in the source water system and to ensure water supply as the city grows.

Completed a review of all residential and commercial meters one-inch and smaller and prepared a small meter replacement program that will go into effect in the summer of 2009. This project is part of the city's requirement under its State Water Management Act water withdrawal permit to reduce the age of water meters used by the utility. All small meters greater than ten years old will be scheduled to be changed and

updated with remote radio reading equipment. Radio read meters will allow quicker, more accurate and more efficient water meter readings.

New pump station on Seven Sister Road went into service.

A project to rehabilitate and replace old water main on South Main Street is in the final design phase and will be ready for the Mass Highway Department's reconstruction of the South Main Street roadway.

## Get involved

If you see any suspicious activity or dumping near city stormdrains or watersheds contact the Stormwater Hotline at 978-374-2334.

## Unregulated monitoring for 2008

In 2008, the Haverhill Water Department monitored for contaminants that are yet to be regulated. The Stage 2 Disinfectants and Disinfection Byproducts rule required the system to monitor 16 extra sample sites for trihalomethane and haloacetic acids. The results are included as part of the range in the table on the right.

The Long Term 2 Enhanced Surface Water Treatment Rule required monthly testing of Kenoz Lake and Crystal Lake's raw water for Cryptosporidium, E.Coli and turbidity. These results are also include in the table to the right. These are not results from your drinking water, but from the water sources themselves. Cryptosporidium was not detected in either lake in 2008.

## New EPA Lead Consumer Information

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 plumbing. The Haverhill Water Department is responsible for providing high quality drinking water, but can not control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize potential lead exposure by flushing your tap 30 seconds to 2 minutes before using water or drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in your drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## How to Read This Table

The results of tests performed in 2001 or the most recent testing available are presented in this table. Terms used in the Water Quality Table and in other parts of this report are defined here. Violations are marked in red

### Key To Table

AL = Action Level  
MCL = Maximum Contaminant Level  
MCLG = Maximum Contaminant Level Goal  
NTU = Nephelometric Turbidity Units  
ppm = parts per million (mg/L)

ppb = parts per billion (ug/L)  
pCi = picocuries per liter (a measure of radioactivity)  
TT = Treatment Technique  
ND = Not detected  
na = not applicable

### Water Quality Table Footnotes

1. None of the samples tested for copper exceeded the Action Level of 1.3 ppm. The 90th percentile measurement was 0.06ppm  
2. 1 of the 32 samples tested for lead exceeded the Action Level of 15 ppb. The 90th percentile

measurement was 4 ppb. Haverhill was in compliance.

3. 100% of the samples tested were below the treatment technique level of 0.3 NTU. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

4. Trihalomethane and Haloacetic Acid results are the highest quarterly average of a running annual average.

## Water Quality Table

2008 Test Results

| Inorganic Contaminants | Date Tested | Units | MCLG | MCL    | Detected Level | Range       | Major Sources                                                                            |
|------------------------|-------------|-------|------|--------|----------------|-------------|------------------------------------------------------------------------------------------|
| Fluoride               | 2008        | ppm   | 4    | 4      | 1.17           | 0.69-1.62   | Erosion of natural deposits; Water additive which promotes strong teeth                  |
| Sodium                 | 2008        | ppm   | na   | na     | 47             | na          | Runoff/Leaching from natural deposits                                                    |
| Sulfate                | 2007        | ppm   | na   | na     | 21.0           | na          | Runoff/Leaching from natural deposits                                                    |
| Copper <sup>1</sup>    | 2008        | ppm   | 1.3  | AL=1.3 | 0.036          | 0.005-0.077 | Corrosion of household plumbing systems; Erosion of natural deposits                     |
| Lead <sup>2</sup>      | 2008        | ppb   | 0    | AL=15  | 4.0            | ND - 18     | Corrosion of household plumbing systems; Erosion of natural deposits                     |
| Nitrate                | 2008        | ppm   | 10   | 10     | 0.14           | na          | Runoff from fertilizer use; Leaching septic systems; sewage; Erosion of natural deposits |
| Barium                 | 2008        | ppm   | 2    | 2      | 0.0073         | na          | Discharge from drilling wastes or metal refineries; Erosion of natural deposits          |

| Microbiological Contaminants | Date Tested | Units | MCLG | MCL | Detected Level | Range     | Major Sources |
|------------------------------|-------------|-------|------|-----|----------------|-----------|---------------|
| Turbidity <sup>3</sup>       | 2008        | NTU   | na   | TT  | 0.11           | 0.01-0.15 | Soil Runoff   |

| Radioactive Contaminants | Date Tested | Units     | MCLG | MCL | Detected Level | Range | Major Sources                          |
|--------------------------|-------------|-----------|------|-----|----------------|-------|----------------------------------------|
| Alpha emitters           | 2003        | pCi/L     | 0    | 15  | 1.0 (+/- 2.0)  | na    | Erosion of natural deposits            |
| Beta particle activity   | 2003        | mrem/year | 0    | 4   | 4.6 (+/- 3.3)  | na    | Decay of natural and man-made deposits |
| Radium 226               | 2003        | pCi/L     | 0    | 5   | 0.4 (+/- 0.3)  | na    | Decay of natural and man-made deposits |
| Radium 228               | 2003        | pCi/L     | 0    |     | 0.2 (+/- 0.6)  | na    | Decay of natural and man-made deposits |

| Volatile Organic Contaminants | Date Tested | Units | MCLG | MCL | Detected Level     | Range     | Major Sources                             |
|-------------------------------|-------------|-------|------|-----|--------------------|-----------|-------------------------------------------|
| Total Trihalomethanes (TTHM)  | 2008        | ppb   | na   | 100 | 37.1 <sup>4</sup>  | 14.3—77.1 | By-product of drinking water chlorination |
| Bromodichloromethane          | 2008        | ppb   | na   | na  | 11.53 <sup>4</sup> | 5.4-13.0  | By-product of drinking water chlorination |
| Chlorodibromomethane          | 2008        | ppb   | na   | na  | 2.53 <sup>4</sup>  | 1.4-3.6   | By-product of drinking water chlorination |
| Chloroform                    | 2008        | ppb   | na   | na  | 38.75 <sup>4</sup> | 7.5-52.0  | By-product of drinking water chlorination |
| Total Haloacetic Acids (HAA5) | 2008        | ppb   | na   | na  | 17.9 <sup>4</sup>  | ND—41.9   | By-product of drinking water chlorination |
| Dichloroacetic Acid           | 2008        | ppb   | na   | na  | 12.67 <sup>4</sup> | ND-16     | By-product of drinking water chlorination |
| Trichloroacetic Acid          | 2008        | ppb   | na   | na  | 8.2 <sup>4</sup>   | ND-11     | By-product of drinking water chlorination |
| Monobromoacetic Acid          | 2008        | ppb   | na   | na  | 2.1                | 2.1       | By-product of drinking water chlorination |

| Unregulated Stage 2 Monitoring | Date Tested | Units       | Kenoza Lake | Range    | Crystal Lake | Range     | Major Sources |
|--------------------------------|-------------|-------------|-------------|----------|--------------|-----------|---------------|
| Raw Water Turbidity            | 2008        | NTU         | 2.68        | 0.6-3.90 | 1.86         | 0.30-2.80 | Soil Runoff   |
| Raw Water E. Coli              | 2008        | Per 100 mls | 7.9         | <1.0-8.6 | 4.9          | <1.0-5.2  | Soil Runoff   |

**Haverhill Water  
Department**

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131 Amesbury Road  
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2008 Water Quality Information



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## General Facts about Drinking Water

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 human activity. Contaminants 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 and wildlife.

( A ) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil, gas production, mining or farming.

( B ) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

( C ) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

( D ) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to contaminants than the general population. Immuno-compromised persons include persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).