

# *2011 Annual Drinking Water Quality Report*

## **North Haven Water Department**

North Haven, Maine  
PWSID ME0091130

We're pleased to present to you our Annual Drinking Water Quality Report, also known as the Consumer Confidence Report. This report, a requirement of the 1996 amendments to the Safe Drinking Water Act, is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

### **WATER SOURCE**

Our water source is Fresh Pond. The construction of a new water filtration plant was completed in June of 2003. The Town began distribution of water treated by that plant in the spring of 2003. Raw water is drawn from the Fresh Pond through three centrifugal pumps. From there, the water is treated with ozone and passes through a contact chamber. The water is then evenly distributed into four slow sand filters. The first stage is a roughing filter, the second a slow sand bed and finally the limestone contact chamber. After filtration, the water is first injected with soda ash for pH adjustment, followed by sodium hypochlorite and ammonia to form chloramines for disinfection. Then the water proceeds to the 50,000-gallon clear water storage. The finished water is pumped into the distribution system by one of two 150 GPM vertical turbine pumps.

### **SOURCE WATER ASSESSMENT**

The Maine Drinking Water Program (DWP) has evaluated all public water supplies as part of the Source Water Assessment Program (SWAP). The assessments included geology, hydrology, land uses, water testing information, and the extent of land ownership or protection by local ordinance to see how likely our drinking water source is to being contaminated by human activities in the future. Assessment results are available at public water suppliers, town offices, and the DWP. For more information about the SWAP, please contact the DWP at telephone 207-287-2070.

If you have any questions about this report or concerning your water system, please contact Glen Marquis at telephone number 207-867-4433 or mailing address PO Box 400, North Haven, ME 04853. We want our valued customers to be informed about their water system. If you want to learn more, please attend any of our regularly scheduled selectmen's meetings. The meetings are held every Tuesday at 4:00 p.m.

### **WATER QUALITY**

North Haven Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table shows any detection resulting from our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2011.

In 2011, due to efforts to protect the water supply, our system was granted a 'Synthetic Organics Waiver.' This is a three year exemption from the monitoring/reporting requirements for the following industrial chemical(s): herbicides, carbamate pesticides, toxaphene/chlordane/PCB and semivolatile organics. This waiver was granted due to the absence of these potential sources of contamination within a half mile radius of the water source. The state of Maine Drinking Water Program grants a waiver only upon a finding that "it will not result in an unreasonable risk to health."

The sources of drinking water include rivers, lakes, ponds and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from human or animal activity. All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. Contaminants that may be present in source water include:

**Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and herbicides** may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

**Organic chemical contaminants**, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

**Radioactive contaminants** can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The table below lists all of the drinking water contaminants that were detected through out water quality monitoring and testing. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk.

<b>TEST RESULTS</b>						
Unless otherwise noted, testing was done in 2011.						
<b>Contaminant</b>	<b>Violation Y/N</b>	<b>Level Detected</b>	<b>Unit Measurement</b>	<b>MCLG</b>	<b>MCL</b>	<b>Likely Source of Contamination</b>
<b>Microbiological Contaminants</b>						
Total Coliform Bacteria (TCR) (Aug 2011)	Y	<b>2 positive</b>	Highest monthly # of positive samples	0 positive	1 positive	Naturally present in the environment
Turbidity (2011)	N	<b>0.2</b>	ntu	N/A	TT	Soil runoff
<b>Inorganic Contaminants</b>						
Arsenic (9/15/10)	N	<b>0.55</b>	ppb	10	10	Erosion of natural deposits
Barium (6/2/11)	N	<b>0.0014</b>	ppm	2	2	Erosion of natural deposits
Chromium (2/2/11)	N	<b>0.51</b>	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper* (1/1/11-6/30/11)	Y	<b>2.2</b>	ppm	1.3	AL=1.3	Corrosion of household plumbing systems
Lead* (1/1/11-6/30/11)	N	<b>4.9</b>	ppb	0	AL=15	Corrosion of household plumbing systems
Nitrate (6/2/11)	N	<b>0.26</b>	ppm	10	10	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits.
* = Reported results are the 90 <sup>th</sup> percentile value (the value that 90% of all samples are less than).						
<b>Disinfection By-Products</b>						
HAA5 [Total Haloacetic Acids] (2011)	N	<b>RAA = 16 (0-43)</b>	ppb	0	60	By-product of drinking water chlorination
TTHM [Total Trihalomethanes] (2011)	N	<b>RAA = 9 (0-29.1)</b>	ppb	0	80	By-product of drinking water chlorination

**Note:** The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Not all contaminants are tested for every year due to monitoring waivers and therefore we must use the most recent round of sampling. Some of our data is more than one year old, however, is limited to no older than 5 years.

**Definitions:**

**Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Maximum Contaminant Level (MCL)** - is 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.

**Maximum Contaminant Level Goal (MCLG)** - is 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.

**Maximum Residual Disinfection Level (MRDL)** -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.

**Maximum Residual Disinfection Level Goal (MRDLG)** – 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.

**Not Applicable (N/A)** - Does not apply

**Running Annual Average (RAA)** - The average of all monthly or quarterly samples for the last year at all sample locations.

**Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water (e.g. treatment technique for turbidity).

**Variations, Exemptions, and Waivers** - State or EPA permission not to meet an MCL, a treatment technique or test for a given contaminant under certain conditions.

**Units:**

**Nephelometric Turbidity Unit (NTU)** - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Parts per billion (ppb) or micrograms per liter (µg/L)** - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Parts per million (ppm) or milligrams per liter (mg/L)** - One part per million corresponds to one minute in two years or a single penny in \$10,000.

**Picocuries per liter (pCi/L)** - A measure of the radioactivity in water.

**Notes:**

**Arsenic:** The U.S. EPA adopted the new MCL standard in October 2001. Water systems must meet this new standard by January 2006.

**Gross Alpha:** Action level over 5 pCi/L requires testing for Radium. Action level over 15 pCi/L requires testing for Radon and Uranium.

**Lead/Copper:** Action levels are measured at consumer's tap. 90% of the tests must be equal to or below the action level.

**Nitrate:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

**Radon:** The State of Maine adopted a Maximum Exposure Guideline (MEG) for Radon in drinking water at 4000 pCi/L, effective 1/1/07. If Radon exceeds the MEG in water, treatment is recommended. It is also advisable to test indoor air for Radon. The U.S.EPA is proposing setting federal standards for Radon in public drinking water.

**Total Coliform Bacteria:** Reported as the highest monthly number of positive samples, for water systems that take < 40 samples per month.

**TTHM/HAA5:** Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) are formed as a by-product of drinking water chlorination. This chemical reaction occurs when chlorine combines with naturally occurring organic matter in water.

**Turbidity:** Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

**IMPORTANT INFORMATION**

Since our system chlorinates its water, we are required to report our annual average for chlorine residual.

**Chlorine Residual** was found to be **1.74 ppm**, with a range of 1.20 ppm to 2.10 ppm.

**Violations****Violation Period Violation Type**

8/1/2011 - 8/31/2011 22 Violation - MCL (TCR), MONTHLY COLIFORM (TCR)

1/1/2011 - 6/30/2011 SE Violation - STATE EXCEEDANCE COPPER, FREE

Total Coliform Bacteria MCL Violation: In 2011, our water system tested positive and recheck sample(s) were positive for the presence of coliform bacteria. To resolve this problem we resampled upgradient and downgradient of the positive sampling sites. All samples came back negative confirming that the positive reading was introduced at the point of collection. Public notification was posted or distributed to all concerned residents.

Coliforms are bacteria which 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. Subsequent tests have been negative for coliform bacteria.

**Lead & Copper Action Level Exceedance:** In 2011, routine sampling detected Copper in excess of the maximum level allowed. Three out of forty-one sites sampled exceeded the action level for Copper. Drinking water regulations require that samples are taken from homes with a high risk potential for Lead/Copper in the plumbing. Public education material was distributed to all residents, shortly thereafter. A corrosion control plan was submitted to the State Drinking Water Program. We have increased the target pH to reduce the corrosivity of the water, thereby reducing the Copper levels in household plumbing. We have also implemented a more frequent hydrant flushing program in order to reduce the pH drop in the distribution system. Lead and copper sampling resumed in 2012 at a 6-month frequency. Results of subsequent future Lead/Copper testing will be made available to all residents. **Copper Health Effects:** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short time could experience gastrointestinal distress, or suffer liver or kidney damage. People with Wilson's Disease should consult their doctor.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

For most people, the health benefits of drinking plenty of water outweigh any possible health risk from these contaminants. However, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Center of Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 thirty (30) seconds to two (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 <http://www.epa.gov/safewater/lead>.

We, at North Haven Water Department, work hard to provide top quality water to every tap. We ask that all our customers help us protect and preserve our drinking water resources, which are the heart of our community, our way of life, and our children's future. Please contact us with any questions. Thank you for working together for safe drinking water.