BANGOR WATER DISTRICT

2010 Water Quality Report

Spring 2011

# Welcome to the 2010 Water Quality Report

*This report provides you with important information about the quality of your drinking water. You count on us for a safe and reliable supply of water every day, and the District staff is dedicated to providing the highest quality product and service.*

## Where Does Your Water Come From?

Floods Pond, pictured above, has served as the source of water supply for District customers since 1959. Floods Pond lies in a pristine, forested watershed in the town of Otis, Maine, east of Bangor, and provides some of the purest drinking water in the nation.

The Bangor Water District has acquired 3,764 acres of land around Floods Pond to protect the high quality of water found there. Through a combination of watershed land ownership and protective easements with neighboring landowners, the District controls nearly 100% of the entire Floods Pond watershed. Public access and recreational activities in the Floods Pond area are prohibited to minimize the chance of disease-causing organisms entering the drinking water supply. These and many other protective efforts make up the District's watershed control program which is very important to maintain the high quality of water drawn from Floods Pond.

Floods Pond is unique for being one of only nine surface water supplies in the state where filtration is not required. The District's waiver from surface water filtration requirements recognizes the excellent quality of its source of supply and the effectiveness of its watershed control program. By keeping the water in Floods Pond so clean, the District is able to save its customers tens of millions of dollars that would otherwise be needed to build and operate a water filtration facility.

## How is Your Water Treated?

Floods Pond is a high quality drinking water source due to the pristine nature of the water body and its surrounding land (its watershed). Disinfection, pH adjustment, and fluoridation are the only treatment steps required to ensure safe drinking water at your tap.

**Disinfection** is achieved using a state-of-the-art ozone treatment facility followed by the addition of chloramines. Ozone is the most effective disinfectant currently used by any water utility, but it is short-lived and does not persist beyond the treatment plant. To maintain disinfected drinking water throughout the water distribution system, chloramines, a combination of chlorine and ammonia, are added as a secondary disinfectant.

**pH Adjustment** is required because water from Floods Pond is naturally soft and acidic. The addition of soda ash to increase pH reduces the acidity of the water and minimizes its corrosiveness. Without treatment, the water could slowly dissolve metals associated with copper pipes and other plumbing fixtures. While not the only factor, effective corrosion control is an important part of ensuring low levels of lead and copper in samples collected from household water faucets.

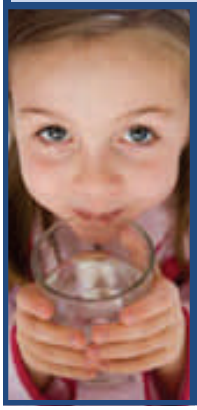
**Fluoridation** is decided upon by the community, and has been part of the District's treatment program since 1967. The natural fluoride level in Floods Pond is boosted to the optimal dose for the purpose of reducing the frequency of tooth decay and improving dental health.

# 2010 Water Test Results After Treatment

**Although many regulated compounds were not found in the water after treatment, below is a list of regulated compounds that were detected.**

| Disinfectant | MRDLG | MRDL | Result | Comments |
|---|---|---|---|---|
| Chloramines (mg/L) | 4 | 4 | 1.96 | Range of all sample results: 1.65 - 1.96 mg/L; maintains the high quality of water after it leaves the ozone treatment plant; the MRDL is based on the running annual average of samples collected every quarter. |

| Compound | MCLG | MCL | Result | Comments |
|---|---|---|---|---|
| Arsenic (µg/L) | 0 | 10 | 0.51 | Erosion of natural deposits. |
| Barium (mg/L) | 2 | 2 | 0.0015 | Erosion of natural deposits. |
| Copper (mg/L) | 1.3 | AL > 1.3 | 0.18 | Copper may enter drinking water from corrosion of household plumbing; samples are collected tri-annually; most recently in June and August 2010; copper was detected at the entrance to the distribution system at a level of 0.0068 mg/L. |
| Fluoride (mg/L) | 4 | 4 | 1.32 | Range of all sample results: 1.13 - 1.32 mg/L; additive for dental health; Floods Pond has a natural fluoride level of approximately 0.2 mg/L. |
| Haloacetic Acids (µg/L) | N/A | 60 | 9.54 | Range of all sample results: 0.00 - 30.00 µg/L; the MCL and result shown at left are based on the running annual average of quarterly samples at all sampling locations; by-product of water disinfection. |
| Lead (µg/L) | 0 | AL > 15 | 23 | Lead may enter drinking water from the corrosion of household plumbing; samples are collected tri-annually; most recently in June and August 2010; more information about the 2010 lead Action Level exceedance is provided at far right; lead was not detected at the entrance to the distribution system. |
| Nitrate (mg/L) | 10 | 10 | 0.16 | Erosion of natural deposits. |
| Total Coliform Bacteria (%) | 0 | 5 | 2.5 | Naturally present in the environment; a minimum of 30 samples are collected in the distribution system each month; in August, one sample out of 40 (2.5%) showed the presence of total coliform bacteria; for the entire year, a total of 480 samples were collected with one showing the presence of total coliform bacteria. |
| Trihalomethanes (µg/L) | N/A | 80 | 7.43 | Range of all sample results: 0.00 - 34.20 µg/L; the MCL and result shown at left are based on the running annual average of quarterly samples at all sampling locations; by-product of water disinfection. |
| Turbidity (NTU) | N/A | 5 | 0.77 | Range: 0.36 - 0.77 NTU; a measurement of suspended matter (silt); excessive levels can cause problems with water disinfection; 100% of the samples taken were below 5 NTU as required for an unfiltered surface water system. |
| Uranium (µg/L) | 0 | 30 | 0.68 | Erosion of natural deposits. |



**Definitions**

**AL**: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. To meet compliance, 90% of sample results must be at or below the Action Level.
**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.
**mg/L**: Milligrams per liter = parts per million.
**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.
**NTU**: Nephelometric Turbidity Unit: A measure of the amount of light scattered by suspended particles in a water sample.
**µg/L**: Micrograms per liter = parts per billion.

## Secondary Drinking Water Standards

These standards are established to protect aesthetic qualities. The District collects samples at the entrance to the distribution system.

| Compound | Standard | Result |
|---|---|---|
| Chloride (mg/L) | 250 | 4 |
| Color (units) | 15 | 5 |
| Copper (mg/L) | 1 | 0.0068 |
| Hardness (mg/L) | 500 | 5.4 |
| Iron (µg/L) | 300 | not detected |
| Manganese (µg/L) | 50 | 4.1 |
| Silver (µg/L) | 100 | not detected |
| Sodium (mg/L) | 100 | 14 |
| Sulfate (mg/L) | 250 | 2 |
| Zinc (mg/L) | 5 | not detected |

**For more information about what was not found in the water after treatment, please visit www.bangorwater.org.**

## What to Know About Lead in Tap Water

Fortunately, there is no lead in the water when it leaves the treatment facility, and the Bangor Water District uses piping that does not add lead to the water. However, lead can get into tap water through pipes in the home, lead solder used in plumbing, and some brass fixtures. The corrosion, or wearing away, of lead based materials can add lead to tap water, especially if the water sits in the pipes for a long time before use. To increase awareness, the following advice is provided to all customers:

"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. The Bangor Water District 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 2 to 3 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 at 1-800-426-4791 or at http://www.epa.gov/safewater/lead."

## Run Water To Flush Out Any Lead

Whenever your water has not been used for several hours, run the cold water tap for 2 to 3 minutes before using it for drinking or cooking. This easy practice will flush away any lead-containing water from the pipes.



## Keeping You Informed

Only during our 2010 monitoring have we found lead levels at certain homes higher than in previous years. As a result, we are taking a number of steps to address these findings. While we are looking into this matter, we will monitor lead more often at more locations and educate all of our customers about the importance of taking steps to reduce potential exposure to lead in drinking water.

## Health Information From U.S. EPA

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 water poses a health risk. More information about contaminants and potential health effects can be obtained from the Environmental Protection Agency Safe Drinking Water Hotline at 1-800-426-4791. You may also direct questions to the Maine Department of Health and Human Services Drinking Water Program at (207) 287-2070.

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/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 or online at http://www.epa.gov/safewater/hotline/.

## Fluoride in Drinking Water

Fluoridation of drinking water has been recognized for over sixty years as a safe and effective way to reduce tooth decay and improve dental health. The citizens of Bangor voted in 1967 to begin fluoridation, and since then the District has ensured that the proper amount of fluoride has been added to the water. The level of fluoride provided is safe and has reduced tooth decay throughout the community.

In January 2011, the U.S. Department of Health and Human Services, the U.S. Centers for Disease Control, and the American Dental Association announced their recommendation that the level of fluoride in drinking water can be set at the lowest end (0.70 mg/L) of the current optimal range, 0.70 – 1.20 mg/L, to prevent tooth decay. This latest recommendation takes into account new scientific data and recognizes that drinking water is now one of many sources of fluoride. Simply put, fluoride is found in many common modern-day consumables, and lowering the amount in drinking water is an effective and uniform way to ensure that everyone receives the optimal dose for continued dental health benefit. Per this recommendation, the Bangor Water District has reduced the fluoride level in its drinking water to 0.70 mg/L.

When mixing formula from powder or liquid concentrate for infants under the age of one, the American Dental Association (ADA) recommends using water that is fluoride free or low in fluoride. This will reduce the potential of the child developing mild dental fluorosis. While fluorosis does not pose a health concern, it can affect the appearance of the teeth (seen as white spots on the tooth enamel). Limiting a child's exposure to fluoride in the early stages of dental development is an effective measure since dental fluorosis does not progress once teeth are formed.

For more information about drinking water fluoridation, please contact the Maine Oral Health Program at (207) 287-2361 or visit the U.S. Centers for Disease Control website at http://www.cdc.gov/fluoridation/index.htm.

## Preparing for New Regulation

The Environmental Protection Agency recently issued a drinking water regulation, the Long Term 2 Enhanced Surface Water Treatment Rule (LT2). Its purpose is to reduce illness associated with *Cryptosporidium*, a microscopic protozoan, and it requires the District to install treatment to remove or inactivate *Cryptosporidium* by 2013. To date, *Cryptosporidium* has never been detected in Floods Pond. Currently, the District is actively involved in the design process for the installation of ultraviolet light treatment to meet the EPA requirements for *Cryptosporidium* inactivation.

## We Welcome Your Feedback

The Bangor Water District staff conducted a variety of activities related to water quality during 2010, and we encourage public comment on our efforts. If you wish to provide feedback, you can contact us:

1) by visiting our business office at 614 State St. in Bangor, ME, regular business hours are 7:00 a.m. - 3:30 p.m., Monday - Friday
2) by mail at P.O. Box 1129, Bangor, ME 04402-1129
3) online at http://www.bangorwater.org
4) by telephone at (207) 947-4516 ext 409 for Dina Page, the Water Quality Manager, or fax at (207) 947-5707
5) at the District's Board of Trustees meetings held at 614 State St. on the 3rd Tuesday of each month at 3:45 p.m.