

ANNUAL WATER QUALITY REPORT

WATER TESTING
PERFORMED IN 2015



Presented By



BRUNSWICK & TOPSHAM
WATER DISTRICT

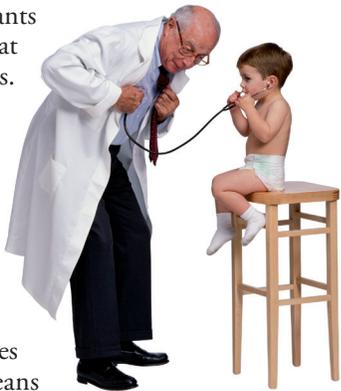
Meeting the Challenge

Once again we are proud to present our annual drinking water report covering all drinking water testing performed between January 1 and December 31, 2015. Over the years we have dedicated ourselves to producing drinking water that meets all State and Federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you with any questions or concerns you may have.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those 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/hotline>.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that 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, in some cases radioactive material, and 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 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.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

How Is My Water Treated and Purified?

At all of our sources we add sodium hypochlorite (chlorine), to protect against bacteriological contaminants, and fluoride, to promote dental health. We also add a phosphate compound to inhibit corrosion of the distribution system piping and to reduce lead and copper corrosion of internal plumbing systems. The water from the Jackson and Taylor wells is filtered to remove iron and manganese caused by erosion of natural deposits in the sand and gravel aquifer. The pH of the water from the Jordan Avenue well field is adjusted using aeration to reduce the corrosivity of the water.

Safe & Reliable Drinking Water

The drinking water problems in Flint, Michigan have raised questions and concerns from our customers. We would like to tell you what we have done regarding lead and copper.

Our water has no lead in it from the wells through the distribution system. Nevertheless, lead can enter tap water by prolonged contact with lead service pipes and interior plumbing and fixtures. There are two ways to reduce the amount of lead that gets into your water. One approach is to remove any piping and fixtures that have lead components. The other approach is to treat the water to minimize the risk of dissolving the lead from your pipes. Unfortunately, neither remedy occurred in Flint. In Brunswick and Topsham, we work to address both.

Twenty-five years ago, we began an effort to remove all lead piping in the District system. Even though there wasn't much, we aggressively worked to remove all known lead services. At our treatment plants, we balance the water chemistry to make it non-aggressive to copper plumbing and the lead solder that holds it together.

We routinely test our water to make sure that the chemistry is working. We are significantly below the EPA standards for lead and copper. EPA rules require us to submit 30 samples from homes deemed to be at risk. Every three years, we send out over 60 letters offering to take samples from homes that qualify. We typically have 40 customers participate.

We have treated the water to reduce its corrosiveness since the early 1970's. In 2011, we adjusted our treatment to further lower lead, copper, and costs. We took samples throughout the system to make sure we were improving water quality. This past year, customers had the lowest levels of lead and copper since we started tracking it regularly in 1992.

If you are worried, the best advice is to let the water run until it is cold. This flushes out the warm water that sat motionless in your pipes. Motionless water can dissolve small amounts of metals and, over time, these levels increase. When you flush that warm water out and get the cold water from the mains in the street, you are drinking water that has not had time to leach lead and copper from your plumbing.

How to Learn More About Your Water

This report highlights some of our activities during the past year. There are many ways to get the information you need:

- Visit our Web site: www.btwater.org
- Like us on Facebook: Brunswick & Topsham Water District
- Subscribe to a construction blog: www.btwater.org
- Stop in the office: 266 River Road, Topsham, M - Th 7 am - 5 pm
- Attend a Board Meeting: Second Monday of each month at 5:30 pm
- Call the office: (207) 729-9956, M - Th 7 am - 5 pm

In case of emergency after normal business hours, please call (207) 729-9956. The answering service will contact the appropriate personnel. A technician will return your call as soon as possible.



Where Does My Water Come From?

Our sources of supply are all groundwater taken from various wells, as follows:

- Jackson Station, Topsham: one 24-inch-diameter well, one 18-inch-diameter well
- Jordan Avenue Station, Brunswick: 138 2.5-inch-diameter wells
- Taylor Station, Brunswick: one 24-inch-diameter well, one 18-inch-diameter well, and one 12-inch-diameter well
- Williams Station, Brunswick: one 12-inch-diameter well

Our water distribution system includes approximately 115 miles of water main, two storage tanks, 7,000 services, and 1,100 private and public hydrants. In 2015, we delivered an average of 1.74 million gallons of water per day to our customers. July 13th was our highest demand day in 2015, when we delivered 3.25 millions gallons of water.

QUESTIONS?

If you have any questions or comments about this report or any other aspect of our operations, please contact Alan J. Frasier, PE, General Manager, at (207) 729-9956 (phone), (207) 725-6470 (fax), or ajfrasier@btwater.org (email).

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering the distribution system is of very high quality. Nevertheless, water quality can deteriorate in the mains. Water main flushing is the process of cleaning the interior of the mains by sending a rapid flow of water through them.

We usually flush the mains in our system every two years to remove iron and manganese sediments. Although we treat the water to remove iron and manganese, not 100 percent of it is removed. Over time, the small amounts remaining after treatment can settle in the pipes. Iron and manganese can affect the taste, clarity, and color of the water. Flushing also helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at such times. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use, and avoid using hot water to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.



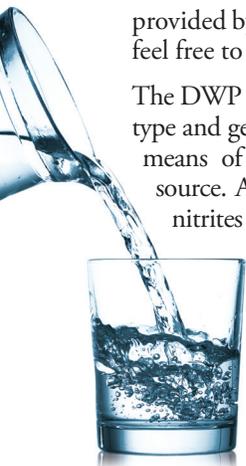
SWAP

In 1996, amendments to the Federal Safe Drinking Water Act (SDWA) required each state to complete assessments for each public water supply source. The assessments identify and describe conditions that may threaten the quality of water available to consumers. These assessments are the focus of Maine's Source Water Assessment Program (SWAP). The State of Maine Drinking Water Program (DWP) completed its SWAP report for the Brunswick and Topsham Water District in 2003. The report was sent to municipal officials in Brunswick and Topsham. The report can be viewed by contacting the Brunswick & Topsham Water District during normal business hours.

The responsibility for protecting public water supply sources from contamination falls largely to the public water suppliers. But municipal officials, not water suppliers, make land-use decisions. This means that protection of public water supplies requires a partnership between water suppliers, state and federal regulators, local landowners, and municipalities.

Categories of risk evaluation for public water sources include well type and site geology; existing and future risk of acute contamination; and existing and future risk of chronic contamination. The following is a summary of the assessment provided by the DWP. If you have any questions or comments, feel free to contact the Brunswick & Topsham Water District.

The DWP has assessed the risk of all our water sources, based on type and geology, to be at the moderate level. The only practical means of reducing the risk is through replacement of the source. Acute contaminants, such as pathogens, nitrates, and nitrites are those that can make people sick immediately after being consumed. The DWP has assessed all of our sources to have low risk for existing and future acute contamination. Chronic contaminants are those that pose a health risk if consumed over many years. The DWP has assessed our sources to have, on average, moderate risk for existing and future chronic contamination.



Lead in Home Plumbing

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 we 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/lead.

Radon

Radon is a radioactive gas that occurs naturally in some groundwater. It may pose a health risk when the gas is released from water into air, as occurs during showering, bathing, or washing dishes and clothes. Radon gas released from drinking water is a relatively small part of the total radon in air. Radon is released into homes and groundwater from soil. Inhalation of radon gas has been linked to lung cancer; however, the effects of radon ingested in drinking water are not yet clear. If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information on how to have your home tested, call (800) SOS-RADON.

Sampling Results

During the past year, we have taken hundreds of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. 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.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2014	10	0	2.5	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2014	2	2	0.00069	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2015	[4]	[4]	0.80	0.18–1.69	No	Water additive used to control microbes
Chromium (ppb)	2014	100	100	2.1	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium (pCi/L)	2011	5	0	0.0571	NA	No	Erosion of natural deposits
Fluoride (ppm)	2015	4	4	0.65	NA	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2015	60	NA	56	26–73	No	By-product of drinking water disinfection
Nitrate (ppm)	2015	10	10	1.5	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2015	80	NA	78.5	25–94	No	By-product of drinking water disinfection
Total Coliform Bacteria (# positive samples)	2015	1 positive monthly sample	0	0	NA	No	Naturally present in the environment
Uranium (ppb)	2014	30	0	0.89	NA	No	Erosion of natural deposits
Uranium [Combined] (ppb)	2015	30	0	1	NA	No	Erosion of natural deposits

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)	2015	1.3	1.3	0.342	0/40	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2015	15	0	1	0/40	No	Corrosion of household plumbing systems; Erosion of natural deposits

MINERAL CONTENT AND SECONDARY STANDARDS

SUBSTANCE (MGL)	MAINE RECOMMENDED LIMIT	RESULT RANGE	
Chloride	250	10	41
Hardness	150	24	56
Iron	0.3	<0.01	0.07
Manganese	0.05	0.001	0.007
Sodium	100	11	55
Magnesium	50	1.7	2.1
Calcium	500	6.9	19
Zinc	5	<0.002	0.21

Definitions

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that 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

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).