2002

WATER QUALITY REPORT

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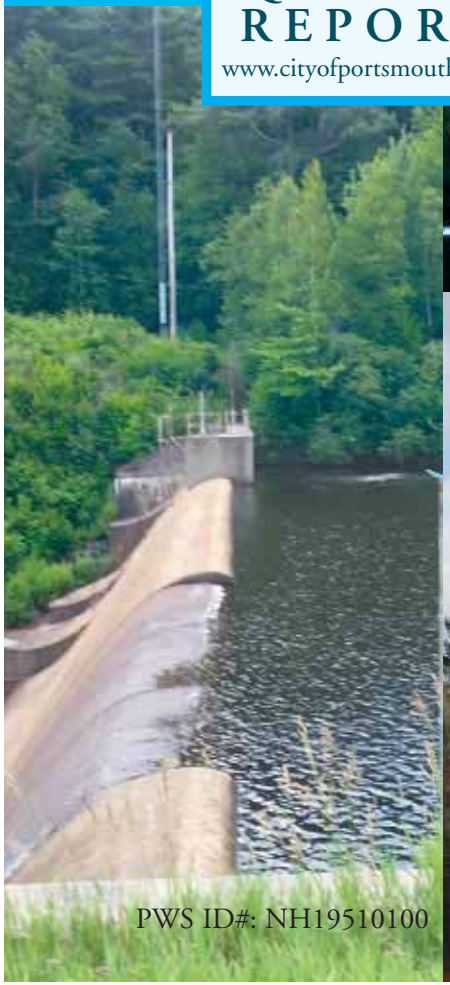

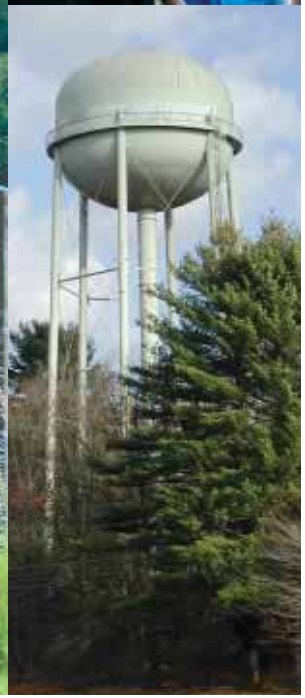

PWS ID#: NH19510100

Continuing Our Commitment

The following is our annual water quality report. This edition covers all contaminants detected from January through December 2002. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call David Allen, Deputy Director, Public Works Department; Peter Rice, City Engineer; or Thomas Cravens at (603) 427-1530. Or visit our Web site at www.cityofportsmouth.com.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water at any regularly scheduled City Council meeting. Meetings are scheduled twice each month on Monday evenings at 7:00 p.m. at Portsmouth City Hall, 1 Junkins Avenue. Call (603) 431-2000 for the date of the next meeting.

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the New Hampshire Department of Environmental Services has a Web site (http://www.des.state.nh.us/waterdiv.htm) that provides complete and current information on water issues in our own state. You may also get additional water information by visiting the city's Web site at www.cityofportsmouth.com.

Where Does My Water Come From?

The main source of Portsmouth's water is the Bellamy Reservoir in Madbury and Dover. The water is piped to the water treatment plant in Madbury, where it is treated and filtered. This area is also the site of Madbury Wells 2, 3 and 4. From there the water is pumped under pressure to consumers in Madbury, Dover and Durham, and then to the Booster Pumping Station in Newington, where the pressure is boosted up to city pressure. It is then pumped to consumers in Newington, Portsmouth, Greenland Rye and New Castle. Many consumers are also served by additional groundwater sources: the Collins Well and Portsmouth Well #1 in Portsmouth, and the Greenland Well in Greenland. Pease International Tradeport is served from the Haven and Smith Wells exclusively.

The NH DES has performed a source water assessment. This Drinking Water Source Assessment Report may be viewed at the Portsmouth Water Division at 680 Peverly Hill Road, Portsmouth, NH during regular working hours. Please call ahead (603-427-1530) for an appointment.

Special Health Information

Some 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.

How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is drawn from the Bellamy Reservoir. The water then goes to a mixing tank, where polyaluminumchloride and sodium hydroxide are added. The addition of these substances causes small particles to adhere to one another (called floc), making them heavy enough to settle out of the water. Powdered activated carbon is added to control taste and odors. The water is then filtered through layers of fine sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Sodium hypochlorite (bleach) is added at this point for disinfection. (We carefully monitor the amount of sodium hypochlorite, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, sodium hydroxide (used to adjust the final pH and alkalinity), fluoride (used to prevent tooth decay), and a corrosion inhibitor (used to protect distribution system pipes) are added before the water is pumped to sanitized, underground reservoirs, water towers and into your home or business.

Lead in Drinking Water

Lead is a naturally occurring element in our environment. Consequently, our water supply is expected to contain small, undetectable amounts of lead. However, most of the lead in household water usually comes from the plumbing in your own home, not from the local water supply. The U.S. EPA estimates that more than 40 million U.S. residents use water that can contain lead in excess of EPA's Action Level of 15 ppb.

Lead in drinking water is a concern because young children, infants and fetuses appear to be particularly vulnerable to lead poisoning. A dose that would have little effect on an adult can have a big effect on a small body. On average, it is estimated that lead in drinking water contributes between 10% and 20% of the total lead exposure in young children.

We maintain our drinking water supply at an optimum pH and mineral content level to help prevent corrosion in your home's pipes. To reduce lead levels in your drinking water you should flush your cold-water pipes by running the water until it becomes as cold as it will get (anywhere from 5 seconds to 2 minutes or longer) and use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead.

For more information, please contact the National Lead Information Center (800-LEAD-FYI) and the Safe Drinking Water Hotline (800-426-4791).

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. Samples taken at our water source indicate radon concentration ranging from none detected to 1,600 picocuries per liter (pCi/L). Inhalation of radon gas has been linked to lung cancer; however, the effects of radon ingested in drinking water are not yet clear. Water from groundwater systems can have relatively higher levels of radon than surface water systems. 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, contact the U.S. EPA's Radon Hotline at (800) SOS-RADON.

Lead and Copper Corrosion Control Program

Lead and copper were not detected in the drinking water sources (wells treatment plant). In 1992, the U.S. EPA instituted a law that required comprehensive testing for lead and copper at the home faucet. In 1992, the Portsmouth Water Division conducted a sampling program which indicated a potential for corrosion of home plumbing fixtures. The detections of lead and copper resulted from sampling houses with sweat copper fittings that used tin/lead solder in the joints. Lead-based solder was outlawed in 1986. A trial program of adding phosphate to our water in 1997 proved successful in controlling corrosion in water at the home faucet. This will also help reduce the occurrence of rusty water in our system. The construction of the chemical feed system for this chemical has been completed and the phosphate is presently being added to the water to inhibit corrosion of the water pipes. Testing is being performed on a regular basis to monitor the effects this is having on lead and copper corrosion within the water system.

Spinney Road Water Tank Project

In the fall of 2002, the new Spinney Road water tank was put into operation. This new composite water tank holds 1 million gallons of water and replaces an old 500,000-gallon riveted-steel tank.

Constitution Ave. to Congress St. Water Line Project

A new 20-inch water line has been installed between the Lafayette Road Water Tank and the Downtown Business District. More than 19,000 feet of new 20-inch water pipe was installed along with approximately 25 new hydrants. All side streets have been connected into this new water main. This new main will provide better fire protection and improved water quality.

Some Potential Contaminants that Could be Found in Drinking 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, 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 can acquire 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.

MCL Violation for TTHMs [Total Trihalomethanes]

Test results for 2002 show that our system exceeds the standard, or Maximum Contaminant Level (MCL), for TTHMs and HAA5s. The standard for Total Trihalomethanes (TTHMs) is 80 ppb for a four-quarter running average. The standard for Haloacetic Acids (HAA5s) is 60 ppb for a four-quarter running average. Testing results for 2002 show that our system exceeded the standard, or Maximum Contaminant Level (MCL), for HAA5s and TTHMS with an average level over the year of 88 and 90 ppb, respectively. Some people who drink water containing Haloacetic Acids in excess of the MCL over many years may have an increased risk of getting cancer. Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

What does this mean? This is not an emergency. If it had been, you would have been notified immediately.

What happened? What is being done? In order to provide a safe drinking water supply, chlorine is added as a disinfectant. In fact, regulations require a minimum amount of chlorine to be present in the water supplied to our customers. HAA5s and TTHMs are created when the chlorine reacts with organic and inorganic matter found in the source water and distribution system. The amount of chlorine added to the water has been reduced to minimize the production of HAA5s and TTHMs. In addition, the water division is investigating alternative treatment options to reduce the production of disinfection by-products.

What's in My Water?

The table below lists what substances were detected in our drinking water during 2002. Although most of the substances listed below are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

REGULATED SUBSTANCES

SUBSTANCE (UNITS)	YEAR SAMPLED	MCL	MCLG	AMOUNT DETECTED	RANGE (LOW-HIGH)	VIOLATION	TYPICAL SOURCE
Alpha emitters (pCi/L)	2002	15	0	0.43	ND-2	No	Erosion of natural deposits
Arsenic (ppb)	2002	10[1]	0[1]	4.6	ND-4.6	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2002	2	2	0.0143	0.0063-0.0143	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Haloacetic Acids (HAA5s) (ppb)	2002	60	NA	88	3.1-287	Yes	By-product of drinking water disinfection
Methyl-t-butyl ether (MTBE) (ppb)	2002	13	NA	1.19	ND-4.2	No	Reformulated gasoline
Nitrate (ppm)	2002	10	10	1.73	0.69-3.75	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2002	80	60	90	5.5-222	Yes	By-product of drinking water disinfection
Turbidity (NTU)[2]	2002	TT	NA	2.92	0.03-3.0	No	Soil runoff

UNREGULATED SUBSTANCES

SUBSTANCE (UNITS)	YEAR SAMPLED	AMOUNT DETECTED	RANGE (LOW-HIGH)	TYPICAL SOURCE
Bromodichloromethane (ppb)	2002	1.7	ND-1.7	By-product of drinking water disinfection
Chloroform (ppb)	2002	1.6	ND-10	By-product of drinking water disinfection
o-Chlorotoluene (ppb)	2002	2.1	ND-2.1	By-product of drinking water disinfection

[1]These arsenic values are effective January 23, 2006. Until then, the MCL is 50 ppb and there is no MCLG.

[2]Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. During the reporting year a minimum of 98% of all samples taken to measure turbidity met water quality standards.

Table Definitions

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.

NA: Not applicable

ND: Not detected

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water.

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.