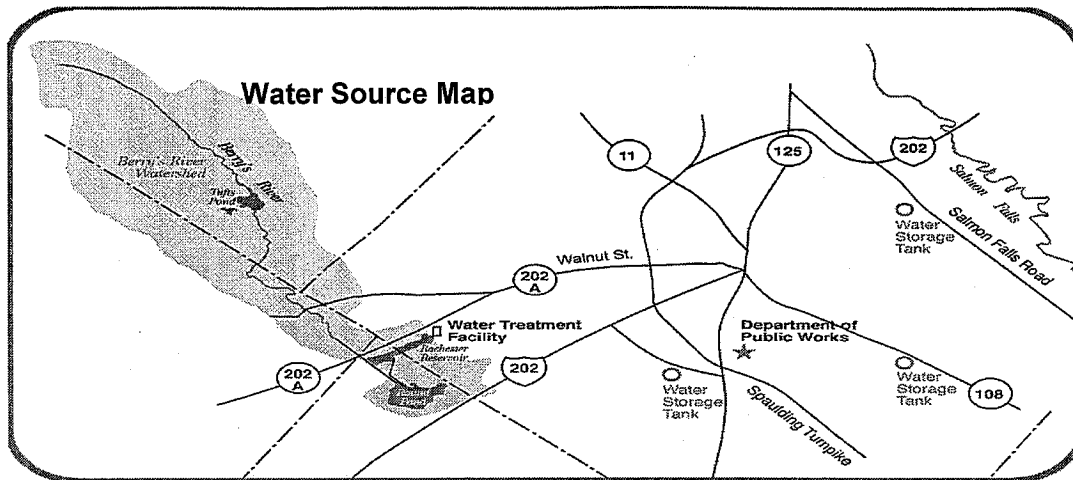


## City of Rochester, NH Water Quality Report 2009



**The Quality of Your Drinking Water:** The City of Rochester is committed to providing our customers with the highest quality drinking water that meets or exceeds state and federal requirements. We will continue to work on your behalf to ensure delivery of a quality product. We are pleased to report the results of our 2009 water-testing program to inform you about your drinking water.

**Rochester Water System Source:** The City of Rochester consumed 662,879,000 gallons of drinking water in 2009. Our water is taken from the Rochester Reservoir, which draws from the Berry River watershed. The supply is 100% surface water. The distribution system consists of approximately 120 miles of water main, four water storage tanks, five water booster stations and approximately 8,000 service connections.

**Rochester's Water Treatment:** The City of Rochester operates a water filtration facility 24 hours per day, seven days per week. Our operators are required to maintain certifications and participate in training programs. We treat the water to remove impurities as required by federal and state regulations and good public health practices. Our water treatment facility is capable of treating 4 million gallons of water per day. The treatment process removes impurities from the water through settling and filtration. After filtration, chlorine is added to the water for disinfection, fluoride is added to promote strong teeth, sodium bicarbonate is added to increase the alkalinity. The pH of the water is increased, and an inhibitor is added to reduce the corrosion of household plumbing. The water then flows by gravity into the distribution system to your home or business.

**Is Our Water Safe for Everyone?** Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as a person 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. The US Environmental Protection Agency (EPA) / US Center for Disease Control and Prevention (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).

**Corrosion of Internal Household Plumbing:** Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

**Why are contaminants in my drinking water?** 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

**Source Water Assessment Summary:** The NH Department of Environmental Services (DES) has prepared a Source Water Assessment Report for the source serving our community, assessing the source's vulnerability to contamination. The results of the assessment prepared on 10/29/02, are as follows: Berry River received 1 high susceptibility rating, 3 medium susceptibility ratings and 8 low susceptibility ratings. The complete Assessment Report is available for review at The Water Treatment Plant. For more information call Robert Gray at 335-4291 or visit the DES Drinking Water and Groundwater Bureau web site at [www.des.nh.gov/dwgb](http://www.des.nh.gov/dwgb)

**Definitions:** Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminants monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. **MTBE** – Methyl Tertiary-Butyl Ether - , The NH Bureau of Health Risk Assessment considers MTBE a possible human carcinogen. **Radon** – EPA sets drinking water standards and has determined that radon is a health concern at certain levels of exposure. Radon is a naturally occurring radioactive contaminant that occurs in groundwater. It is a gas and is released from water into household air during water use. Radon has been found in epidemiology studies to cause lung cancer in humans at high exposure levels. At lower exposure, the risk of lung cancer is reduced. Presently EPA is reviewing a standard for radon in water. The City of Rochester does not have an issue with radon as our system is supplied by surface water and radon is not an issue in surface waters. Also, drinking water that meets the EPA standard is associated with little of this risk and is considered safe with respect to radon. **Turbidity** is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality and the effectiveness of filtration. High Turbidity can hinder the effectiveness of disinfectants. **Total trihalomethanes** – (TTHM) Some people who drink water containing TTHM in excess of the MCL over many years experience problems with their liver, kidneys or central nervous system and may have an increased risk of getting cancer. **Haloacetic Acids**- (HAA5) Some people who drink water containing HAA5 in excess of the MCL over many years have an increased risk of getting cancer. **Sampling Dates:** The State of New Hampshire allows water systems to monitor for some contaminants less than once a year because the concentration of these contaminants does not change frequently. Some of the data presented, though representative, may be more than a year old.

**Description of Drinking Water Contaminants:** 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 from 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. **Inorganic contaminants**, such as salts and metals, which 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**, which 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, which 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 the oil and gas production and mining activities. 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. The United States Food and Drug Administration (FDA) regulation establishes limits for contaminants in bottled water that must provide the same protection for public health.

#### **Abbreviations:**

**MCLG** – Maximum Contaminant Level Goal, or the level of a contaminant in drinking water below which there are no known or expected health risks. **MCL** – Maximum contaminant level, the highest level of a contaminant that is allowed in drinking water. **AL** - Action level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow. **TT** – Treatment technique, or required process intended to reduce the level of a contaminant in drinking water. **MRDLG** – Maximum residual disinfectant level goal or the level of drinking water disinfectants below which there is no known or expected health risk. **MRDL** – Maximum residual disinfectant level or the highest level of a disinfectant allowed in drinking water. **NA** – not applicable, **ND** – none detected, **NR** – not regulated, **NTU** – Nephelometric Turbidity Units, **ppm** – parts per million, **ppb** – parts per billion, **ppt** - parts per trillion, **ppq** - parts per quadrillion, **MFL** – million fibers per liter, **pCi/L** – pico curies per liter, a measurement of radioactivity

\*It is possible to get a slightly higher level at one site and still be within MCL range. This level is derived from samples taken at 4 locations, four times a year and is a running annual average of all.

\*\*This contaminant is tested for once every three years, on the corresponding dates per regulation. Lead & Copper 7/31/2008 90<sup>th</sup> percentile for copper 0.196 ppm, 90<sup>th</sup> percentile for lead 0.001 ppm. Next sampling 2011.

The State allows us to monitor some contaminants less than once a year because the concentrations of these contaminants do not tend to change frequently.

#### **Questions or Concerns**

Questions on water quality and our treatment and supply systems may be directed to Robert Gray at the Water Treatment Facility at 335-4291 Monday through Friday 7:00am to 3:00pm or via email at [bob.gray@rochesternh.net](mailto:bob.gray@rochesternh.net)

## 2009 Water Quality Summary

The results for detected contaminants listed below are from the most recent monitoring done in compliance with regulations ending with the year 2007

Contaminant Units	Detected Yes / No Violation	MCL	MCGL	Likely Source of Contamination	Health Effects
<b>Microbiological</b>					
Turbidity NTU	0.06-0.09 No Violation	TT	N/A	Soil run off	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.
Total Organic Carbon (TOC) ppm	1.3-2.0 No Violation	TT	NA	Naturally present in the environment.	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
<b>Inorganic Contaminants</b>					
Fluoride mg/l	1.10 No Violation	4		Erosion natural deposits; additive to promote strong teeth.	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
**Lead ppm	ND No Violation	AL=0.015	0	Natural deposits, and corrosion of household plumbing	(15 ppb in more than 5%) infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791). Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
**Copper ppm	0.0050-0.25 No Violation	AL=1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Nitrate mg/l	ND No Violation	10	10	Runoff from fertilizer use, leaching septic tanks, sewage, erosion of natural deposits.	(5 ppm through 10ppm) 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 for advice from your health care provider. (Above 10 ppm) infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrite mg/l	ND No Violation	1	1	Runoff from fertilizer use, leaching septic tanks, sewage, erosion of natural deposits.	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill, and if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
<b>Volatile Organic</b>					
Chlorine ppm	1.73-2.00 No Violation	4 MRDL	4 MRDL	Additive used to control microbes	Some people who use water containing chlorine well in excess of the MRL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
Total Trihalomethanes, TTHM ppb, Bromodichloromethane, Dibromomethane, Chloroform,	*61 No Violation	80	NA	By products of Chlorination Process	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 system, and may have an increased risk of getting cancer.
Haloacetic Acid HAA5 ppb	*27 No Violation	60	NA	By product of Chlorination Process	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.