

2017 Water Quality Report

City of Concord, New Hampshire

(EPA PWS #0501010)

What is the purpose of this report?

Since 1999 all public water systems have been required to provide an annual water quality report to their customers. It must detail the quality of your drinking water, where it comes from, and where you can get more information. The report must list all regulated drinking water contaminants found in your water, and compare them to standards known as Maximum Contaminant Levels (MCLs).

The City of Concord is pleased to report that your drinking water meets or exceeds all state and federal standards for water quality and treatment.

The sources of drinking water (both tap water and bottled water) include lakes, rivers, springs and wells. Water by its nature tends to dissolve and erode materials as it travels over land or through the ground. As a result, naturally occurring substances, as well as contaminants resulting from human activity, may be present in our source waters.

These contaminants may include:

Microbes, such as bacteria, protozoa, and viruses, which may come from septic systems, sewage treatment plants, livestock, and wildlife. (examples: E. coli, Giardia, Cryptosporidium, Hepatitis A).



Inorganic chemicals, such as salts and metals, which can be naturally occurring or from storm-water runoff, industrial or domestic wastewater, and farming (examples: arsenic, phosphates).

Volatile Organic Compounds and Synthetic Organic Compounds, which originate from industrial discharges, agriculture, gas stations, storm-water runoff, residential uses and septic systems (examples: MtBE, pesticides, herbicides).

Radioactive contaminants, which can be naturally occurring or may result from oil and gas production and mining activities (example: radon).

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Similarly, the bottled water industry is regulated by the US Food and Drug Administration (FDA) which must provide the same protection for public health.

Why are there contaminants in my 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 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.

Do I need to take special precautions? 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 at 1-800-426-4791.

What is the source of my drinking water?

Penacook Lake in West Concord is the City's primary water supply. The City can supplement this supply when necessary by using its pumping station on the Contoocook River. Concord also has a well water supply along the Soucook River, which is now managed as an emergency or back-up supply.

Water drawn from Penacook Lake and the Contoocook River passes through the Concord Water Treatment Plant where it is cleaned, filtered, and disinfected. Next, fluoride is added, and the pH and alkalinity are adjusted to reduce the natural corrosiveness of the water. Finally, the chlorine disinfectant is converted to a long lasting form called monochloramine, which protects the treated water from microbial re-contamination on the way to homes and businesses.



Results of 2016 Water Quality Testing

All tests were done during 2016 unless otherwise indicated.

Table 1. Hutchins Street Water Treatment Plant – Penacook Lake**SUBSTANCES FOUND:**

Substance (Date Tested)	Level Measured	MCL	MCLG	Meets Limits?	Likely Source
Barium	Highest Measurement: 0.005 mg/L	2 mg/L	2 mg/L	YES	Erosion of natural deposits.
Chloramines	Average: 2.1 mg/L Range of Measurements: 1.8 – 2.7 mg/L	MRDL: 4 mg/L	MRDLG: 4 mg/L	YES	Water additive used to control microbes.
Copper (2014)	90th Percentile: 0.037 mg/L # above the AL: 0 sites	AL: 1.3 mg/L	1.3 mg/L	YES	Corrosion of household plumbing systems; erosion of natural deposits; leaching of wood preservatives.
Fluoride	Average: 0.6 mg/L Range of Measurements: 0.5 – 0.7 mg/L	4 mg/L	4 mg/L	YES	Erosion of natural deposits; water additive which promotes strong teeth; waste from fertilizer and aluminum factories.
Lead (2014)	90th Percentile: 1 µg/L # above the AL: 0 sites	AL: 15 µg/L	0 µg/L	YES	Corrosion of household plumbing systems, erosion of natural deposits.
Compliance Gross Alpha	Highest Measurement: 0.2 pCi/L	15 pCi/L	0 pCi/L	YES	Erosion of natural deposits.
Combined Radium 226, 228	Highest Measurement: 0.9 pCi/L	5 pCi/L	0 pCi/L	YES	Erosion of natural deposits.
Total Organic Carbon (TOC)	Average % Removal: 39% Range of % Removal: 34% - 46%	TT: minimum removal is 26%, or must meet alternate criteria.	n/a	YES	Naturally present in surface waters.
Total Haloacetic Acids (HAA5s)	Highest Annual Average: 24 µg/L Range of Measurements: 12 – 38 µg/L	Annual Average 60 µg/L.	n/a	YES	By-product of drinking water disinfection with chlorine.
Total Trihalomethanes (TTHMs)	Highest Annual Average: 34 µg/L Range of Measurements: 22 – 44 µg/L	Annual Average 80 µg/L.	n/a	YES	By-product of drinking water disinfection with chlorine.
Turbidity	Highest Measurement: 0.19 NTU Lowest Monthly % OK: 100%	TT: maximum of 1 NTU and at least 95% of tests ≤ 0.3 NTU.	n/a	YES	Soil runoff.

What is Turbidity? Why do we measure it? It is a measure of the cloudiness of water. Surface water systems monitor turbidity because it is a good indicator of water quality and thus helps measure the effectiveness of the treatment process.

A Message About Fluoride: “Your public water supply is fluoridated. According to the Centers for Disease Control and Prevention, if your child under the age of 6 months is exclusively consuming infant formula reconstituted with fluoridated water, there may be an increased chance of dental fluorosis. Consult your child’s health care provider for more information.”

Table 2. Sanders Station Wells – emergency use only

SUBSTANCES FOUND:

Substance (Date Tested)	Level Measured	MCL	MCLG	Meets Limits?	Likely Source
Barium (2014, 2015)	Average: 0.004 mg/L Range: 0.002 – 0.005 mg/L	2 mg/L	2 mg/L	YES	Erosion of natural deposits; discharge of drilling wastes; discharge from metal refineries.
Chromium (2014, 2015)	Average: 1 µg/L Range: < 1 – 2 µg/L	100 µg/L	100 µg/L	YES	Erosion of natural deposits; discharge from steel and pulp mills.
Nitrate (as Nitrogen)	Average: 0.4 mg/L Range: < 0.5 – 1.6 mg/L	10 mg/L	10 mg/L	YES	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Compliance Gross Alpha	Average: 0.7 pCi/L Range: Not Detected – 1.8 pCi/L	15 pCi/L	0 pCi/L	YES	Erosion of natural deposits.
Combined Radium	Average: 0.4 pCi/L Range: 0.2 – 0.5 pCi/L	5 pCi/L	0 pCi/L	YES	Erosion of natural deposits.

2013 Unregulated Contaminant Monitoring Rule	
Substance	Level Measured
Chlorate (2013)	Average: 295.3 µg/L Range: 78.0 – 614.6 µg/L
Strontium (2013)	Average: 35.7 µg/L Range: 32.4 – 38.6 µg/L

What is the Unregulated Contaminant Monitoring Rule ? The EPA is required to monitor for new substances that have the potential to become problems in drinking water. The agency compiles a list of such substances that warrant further investigation. Under the UCMR, public water systems nationwide test for the new list every five years. EPA uses the results to determine if additional drinking water regulations are needed. During the 2013 UCMR, Concord found the two substances shown here. The EPA will announce whether these substances will need to be addressed in some way. A fourth round of the UCMR will begin in 2018.

Substance	Average Level Measured
Sulfate	7 mg/L
Chloride	26 mg/L
Sodium	26 mg/L
Iron	< 0.05 mg/L
Manganese	0.005 mg/L
Hardness	16 mg/L (as calcium carbonate) Very Soft!
Calcium	4.6 mg/L
pH	9.2 units
Alkalinity	24 mg/L (as calcium carbonate)
Perfluorochemicals	Levels Measured
PFOA	Not detected
PFOS	Not detected
PFBS	Not detected
PFHpA	Not detected
PFHxS	Not detected
PFNA	Not detected

Additional Testing: An obscure group of chemicals called perfluorochemicals (PFCs) made news beginning in March of 2016 when Saint-Gobain Performance Plastics found Perfluorooctanoic Acid (PFOA) in wells within their Merrimack, NH facility and self-reported to the NH Department of Environmental Services. The ensuing investigation confirmed low levels of the contaminant in the area. NHDES has set a Health Advisory level at 70 Parts Per Trillion (ppt). The City of Concord has tested its drinking water for all 8 PFCs, first in 2013 and again in April of 2016. No PFCs have been found.

We want you to know this about Lead: 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 Concord Water System is responsible for high quality drinking water, but cannot control the variety of materials used in your plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing cold water from your tap for at least 30 seconds before using the water for drinking or cooking. Do not use hot water for drinking and 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://water.epa.gov/drink/info/lead/index.cfm>

Definitions:

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 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.

TT - Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

AL - Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which water systems must follow.

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.

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.

mg/L - milligrams per Liter. A unit of concentration, also called parts per million, or ppm.

µg/L - micrograms per Liter. A unit of concentration, also called parts per billion, or ppb.

ng/L – nanograms per Liter. A unit of concentration, also called parts per trillion, or ppt.

pCi/L – picocurie per Liter. A unit expressing radioactive concentration.

NTU - Nephelometric Turbidity Unit.

TTHM - Total Trihalomethanes.

HAA5 – Haloacetic Acids.

< -- Less than. Below the limit of detection. Less than detectable.

n/a - not applicable.

Source Water Assessment Summary:

The NH Department of Environmental Services evaluated community water sources throughout New Hampshire for 14 risk factors that could affect water quality.

Examples of these risk factors include; proximity of highways, proximity of known contamination, and percentage of urban land cover.

A summary of the 2003 assessment of Concord's three sources is shown below.

This data is more than ten years old; the risks may have changed.

Risk Factor Rating	Penacook	Contoocook	Well
	Lake	River	Water
	# of factors	# of factors	# of factors
High	0	2	2
Medium	1	6	2
Low	11	3	8

The complete Source Assessment Report is available for review at the Department of General Services (603)228-2737), or online at

www.des.nh.gov/organization/divisions/water/dwgb/dwspp/dwsap.htm .

Concord's water supply is managed by the General Services Department:

Administrative Offices	311 North State Street	(603) 228-2737
Director, General Services Department	Chip Chesley	(603) 228-2737
Water Plant Superintendent	Marco Philippon	(603) 225-8696
Tours of the Water Plant	Marco Philippon	(603) 225-8696
City Website	http://www.concordnh.gov	
Online report	http://www.concordnh.gov/waterquality2017	

Getting Involved: The City of Concord encourages residents to contact the Water Plant Superintendent to express concerns or interest in the operation of the City's water utility.

Thank you to our sample site hosts!

HealthSouth Rehabilitation	Hoods Dairy	Banks Chevrolet
Citizens Bank – Penacook	Concord Library	UNH Law School
Concord Country Club	E. J. Prescott	SteepleGate Mall
Foxfire Property Management	Delta Dental	Concord Monitor
Quality Cash Market	Turner Group	Saint Pauls School
Irving Gas – Fisherville Road	Walmart	Heights Fire Station
Santander Bank-West Street	NH Liquor Commission	Trinity Baptist Church
Hannaford Supermarket	Briar Pipes Apartments	Hall Street WWTP
Beaver Meadow Golf Course	Penacook WWTP	Agway