



# ANNUAL WATER QUALITY REPORT

Reporting Year 2023



*Presented By*  
**City of Concord**



PWS ID#: NC0113010



## Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2023. Included are details about your sources of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing you with this information because informed customers are our best allies.

## 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, 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 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.

## Where Does My Water Come From?

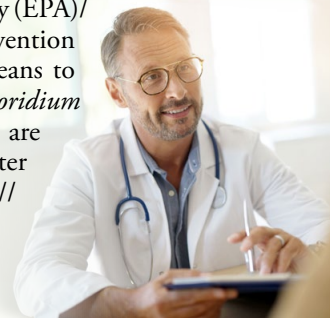
The City of Concord obtains water from five sources. The city has two water treatment plants, which draw water from two surface water reservoirs. The Coddle Creek Water Treatment Plant draws water from Lake Don T. Howell. The Hillgrove Water Treatment Plant draws water from Lake Fisher and Lake Don T. Howell. The City of Concord also purchases water from the City of Albemarle. For information on the quality of Albemarle's water, contact the Public Utilities Department at (704) 984-9605. Plans are underway to ensure that we continue to have an adequate water supply. Additionally, the City of Concord can purchase water from the City of Charlotte and the City of Kannapolis. For information on the quality of Charlotte's water, contact Charlotte-Mecklenburg Utilities at (704) 391-5144. For information on the quality of Kannapolis's water, contact Alex Anderson at (704) 920-4252.

“When the well is dry, we know the worth of water.”

—Benjamin Franklin

## Important 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. Environmental Protection Agency (EPA)/Centers 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 at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



**QUESTIONS?** For more information about this report, or for any questions relating to your drinking water, please call Anthony Allman, Water Operations Manager, at (704) 920-5336.



## Source Water Assessment

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to potential contaminant sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information, and a relative susceptibility rating of higher, moderate, or lower.

The relative susceptibility rating of each source was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). It is important to understand that a higher susceptibility rating does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area. The assessment findings are summarized in the table below:

SOURCE NAME	SUSCEPTIBILITY RATING	SWAP REPORT DATE
Lake Fisher/Coldwater Creek (Concord)	Higher	Sept. 9, 2020
Lake Don T. Howell (Concord)	Moderate	Sept. 9, 2020
Tuckertown Reservoir (Albemarle)	Higher	Sept. 9, 2020
Narrows Reservoir/Badin Lake (Albemarle)	Moderate	Sept. 9, 2020

The complete SWAP Assessment Report may be viewed at <https://www.ncwater.org/?page=600>. Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this website may differ from the results that were available at the time this Consumer Confidence Report was prepared. If you are unable to access your SWAP report online, you may mail a written request for a printed copy to Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name and number and provide your name, mailing address, and phone number. If you have any questions about the SWAP report, please contact the source water assessment staff at (919) 707-9098.

## What are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit <http://bit.ly/3Z5AMm8>.



## 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 two 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 (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Cryptosporidium in Drinking Water

To comply with the Long Term 2 Enhanced Surface Water Treatment Rule (LT2), the City of Concord began collecting samples for *cryptosporidium* and *E. coli* in October 2015. Samples were collected monthly from each raw water source. Here are the results that were obtained:

CONCORD CRYPTOSPORIDIUM (RESULTS SHOWN ARE REPORTED IN OOCYSTS/L)		
RAW WATER SOURCE	AVERAGE RESULT	RANGE OF RESULTS
Lake Don T. Howell	ND	ND
Lake Fisher	0.007	ND–0.087

*E. COLI:* The following averages and ranges were obtained from analyses of the following City Of Concord raw water sources (results shown are reported as MPN, colonies/100 mL of sample)

RAW WATER SOURCE	AVERAGE RESULT	RANGE OF RESULTS
Lake Don T. Howell (Concord)	2.6	<1–13.2
Lake Fisher (Concord)	9.0	<1–33.1

*Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *cryptosporidium*, the most commonly used filtration methods cannot guarantee 100-percent removal. Our monitoring indicates the presence of these organisms in our source water or finished water. Current test methods are not sufficient to determine if the organisms are dead or if they are capable of causing disease.

Ingestion of *cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

### Community Participation

You are invited to participate in your public forum and voice your concerns about your drinking water. The Concord City Council meets the second Thursday of each month at 6:00 p.m. in Council Chambers, located at 35 Cabarrus Avenue West, Concord.



## Definitions

**90th %ile:** The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

**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.

**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.

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**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).

**removal ratio:** A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

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



## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring 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.

REGULATED SUBSTANCES									
				City of Concord		Hillgrove WTP			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2023	[4]	[4]	0.96	0.22–1.72	NA	NA	No	Water additive used to control microbes
Fluoride (ppm)	2023	4	4	NA	NA	0.974	0.348–0.974	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2023	60 <sup>1</sup>	NA	52.1	20.40–61.0	NA	NA	No	By-product of drinking water disinfection
Total Organic Carbon [TOC] (removal ratio)	2023	TT <sup>2</sup>	NA	NA	NA	1.34 <sup>3</sup>	1.14–1.57 <sup>3</sup>	No	Naturally present in the environment
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2023	80 <sup>5</sup>	NA	67.0	20.90–98.90	NA	NA	No	By-product of drinking water disinfection
Turbidity <sup>6</sup> (NTU)	2023	TT = 1 NTU	NA	NA	NA	0.813	ND–0.813	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2023	TT = 95% of samples meet the limit	NA	NA	NA	100	NA	No	Soil runoff

REGULATED SUBSTANCES									
				Coddle Creek WTP		City of Albemarle			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2023	[4]	[4]	NA	NA	0.97	0.20–1.56	No	Water additive used to control microbes
Fluoride (ppm)	2023	4	4	0.75	0.51–0.75	0.70	0.65–0.70	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2023	60 <sup>1</sup>	NA	NA	NA	42	29–60	No	By-product of drinking water disinfection
Total Organic Carbon [TOC] (removal ratio)	2023	TT <sup>2</sup>	NA	1.44 <sup>3</sup>	1.22–1.66 <sup>3</sup>	1.39 <sup>4</sup>	1.21–1.61 <sup>4</sup>	No	Naturally present in the environment
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2023	80 <sup>5</sup>	NA	NA	NA	15	10–19	No	By-product of drinking water disinfection
Turbidity <sup>6</sup> (NTU)	2023	TT = 1 NTU	NA	0.19	ND–0.19	0.26	ND–0.26	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2023	TT = 95% of samples meet the limit	NA	100	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

				City of Concord		Hillgrove WTP		Coddle Creek WTP		City of Albemarle			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.119	0/53	NA	NA	NA	NA	0.128 <sup>7</sup>	0/32 <sup>7</sup>	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2022	15	0	ND	0/53	NA	NA	NA	NA	ND <sup>7</sup>	0/32 <sup>7</sup>	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES <sup>8</sup>

				City of Concord		Hillgrove WTP		Coddle Creek WTP		City of Albemarle		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2023	NA	NA	19	NA	16	NA	16.75	12.78–16.75	NA	NA	NA
Sulfate (ppm)	2023	NA	NA	23	NA	25	NA	25.9	19.3–25.9	NA	NA	NA

<sup>1</sup> Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

<sup>2</sup> Depending on the TOC in our source water, the system must have a certain percentage removal of TOC or achieve alternative compliance criteria. If we do not achieve that percentage removal, there is an alternative percentage removal. If we fail to meet the alternative percentage removal, we are in violation of a treatment technique.

<sup>3</sup> Compliance Method Step 1.

<sup>4</sup> Compliance Method ACC #2.

<sup>5</sup> 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.

<sup>6</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

<sup>7</sup> Sampled in 2023.

<sup>8</sup> Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

