

# ANNUAL WATER QUALITY REPORT

Reporting Year 2021

*Presented By*



## We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at all hours—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

## Where Does My Water Come From?

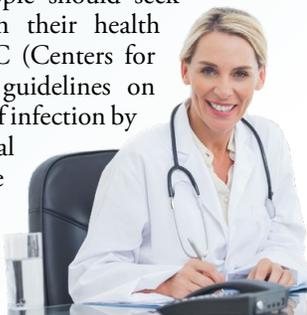
The City of Concord obtains water from five different sources. The City has two water treatment plants, which draw water from two surface water reservoirs. The Coddle Creek Water Treatment Plant draws water from Lake Don T. Howell. The Hillgrove Water Treatment Plant draws water from Lake Fisher and 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 Public Utilities Department at (704) 984-9605. Plans are underway to ensure that we 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) 336-7600. For information on the quality of Kannapolis's water, contact Alex Anderson at (704) 920-4252.

## Community Participation

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

## 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. 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>.



## NOTICE TO THE PUBLIC

### IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

During 2021, the City of Albemarle received a Reporting Violation

Violation Awareness Date: March 31, 2021

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the February 2021 compliance period, the City of Albemarle did not report the results of monitoring for Total Coliform within the required time frame.

The City of Albemarle failed to notify the state drinking water program as required by March 10, 2021. Although public health was not impacted, as our customers, you have the right to know what happened and what we did to correct the situation.

What should I do? There is nothing you need to do at this time.

What is being done? While the City of Albemarle did not notify the state as quickly as they should have, the missing reporting data was uploaded on April 19, 2021. The City of Albemarle is no longer in violation.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

For more information about this violation, please contact the Albemarle Public Utilities Department at (704) 984-9605.

**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.



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

”

## 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.

## Testing For Cryptosporidium

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:

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 and/or finished water. Current test methods do not allow us 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.

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



## 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 susceptibility rating of “higher” 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	September 9, 2020
Lake Don T. Howell (Concord)	Moderate	September 9, 2020
Tuckertown Reservoir (Albemarle)	Higher	September 9, 2020
Narrows Reservoir/Badin Lake (Albemarle)	Moderate	September 9, 2020

The complete SWAP Assessment report may be viewed on the web, 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 web site may differ from the results that were available at the time this CCR was prepared. If you are unable to access your SWAP report on the web, 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 requests to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, 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 by phone at (919) 707-9098.



## 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		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	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
2,4-D (ppb)	2021	70	70	NA	NA	0.5	ND–0.5	0.30	ND–0.30	ND	NA	No	Runoff from herbicide used on row crops
Chlorine (ppm)	2021	[4]	[4]	1.09	0.21–1.96	NA	NA	NA	NA	1.01	0.20–1.61	No	Water additive used to control microbes
Fluoride (ppm)	2021	4	4	NA	NA	1.07	0.51–1.07	0.83	0.46–0.83	0.81	0.62–0.81	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2021	60	NA	51.5	14.0–53.0	NA	NA	NA	NA	53	22–43	No	By-product of drinking water disinfection
Mercury [inorganic] (ppb)	2021	2	2	NA	NA	ND	NA	ND	NA	0.001	ND–1.0	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
TTHMs [Total Trihalomethanes]–Stage 2 (ppb)	2021	80	NA	62	9.4–68.1	NA	NA	NA	NA	50	19–54	No	By-product of drinking water disinfection
Total Organic Carbon [TOC] <sup>1,2</sup> (removal ratio)	2021	TT	NA	NA	NA	1.29	1.12–1.46	1.46	1.12–1.89	1.47	1.16–1.71	No	Naturally present in the environment
Turbidity <sup>3</sup> (NTU)	2021	TT = 1 NTU	NA	NA	NA	0.15	0.04–0.15	0.19	0.04–0.19	0.15	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2021	TT = 95% of samples meet the limit	NA	NA	NA	100	NA	100	NA	100	NA	No	Soil runoff
Tap water samples were collected for lead and copper analyses from sample sites throughout the communities													
				City of Concord				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	VIOLATION	TYPICAL SOURCE				
Copper (ppm)	2019	1.3	1.3	0.075	0/51	0.196 <sup>4</sup>	0/35 <sup>4</sup>	No	Corrosion of household plumbing systems; Erosion of natural deposits				
Lead (ppb)	2019	15	0	ND	0/51	ND <sup>4</sup>	0/35 <sup>4</sup>	No	Corrosion of household plumbing systems; Erosion of natural deposits				

## UNREGULATED SUBSTANCES <sup>5</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Hillgrove WTP		Coddle Creek WTP		City of Albemarle		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
<b>Sodium</b> (ppm)	2021	18	NA	13	NA	11.44	10.1–12.8	Naturally occurring
<b>Sulfate</b> (ppm)	2021	20	NA	22	NA	19.1	16.3–22.0	Naturally occurring

<sup>1</sup>Footnote for Hillgrove WTP and for Coddle Creek WTP: Compliance method: Step 1.

<sup>2</sup>Depending on the TOC in our source water, the system MUST have a certain percentage removal of TOC or must 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>Footnote for City of Concord and for Hillgrove WTP and for Coddle Creek WTP and for City of Albemarle: 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>4</sup>Sampled in 2020.

<sup>5</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.

## 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.

**LRAA (Locational Running Annual Average):** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

**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.

