

# ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2020

Presented By





## Quality First

Once again, we are pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2020. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

## Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to purify and clarify water;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

## 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).

## Where Does My Water Come From?

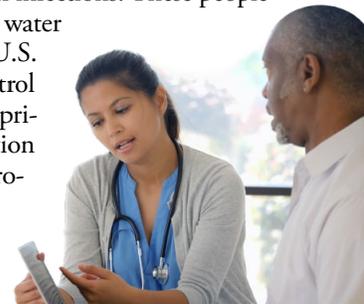
The City of Concord obtains water from six different sources. The city has two water treatment plants, which draw water from three surface water reservoirs. The Coddle Creek Water Treatment Plant draws water from Lake Don T. Howell. The Hillgrove Water Treatment Plant draws water from Lake Concord, Lake Fisher, and Lake Don T. Howell. The City of Concord also purchases water from the City of Kannapolis and the City of Albemarle. For information on the quality of Kannapolis's water, contact Alex Anderson, Director of Water Resources, at (704) 920-4252. For information on the quality of Albemarle's water, contact Shaun Whitley at (704) 984-9657. 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. For information on the quality of Charlotte's water, contact Charlotte-Mecklenburg Utilities at (704) 391-5144.

## 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 6:00 p.m. in the Council Chambers, 35 Cabarrus Avenue West, Concord.

## 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>.



**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 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)	Moderate	September 1, 2017
Lake Concord/Coldwater Creek (Concord)	Moderate	September 1, 2017
Lake Don T. Howell (Concord)	Moderate	September 1, 2017
Kannapolis Lake (Kannapolis)	Moderate	July 12, 2017
Second Creek/Back Creek (Kannapolis)	Moderate	July 12, 2017
Tuckertown Reservoir (Albemarle)	Moderate	September 1, 2017
Narrows Reservoir/Badin Lake (Albemarle)	Moderate	September 1, 2017

The complete SWAP assessment report may be viewed online 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 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 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 by phone at (919) 707-9098.

## 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.



## 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.

We participated in the fourth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES											
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	City of Concord				Hillgrove WTP		Coddle Creek WTP		VIOLATION	TYPICAL SOURCE
		MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
<b>Atrazine</b> (ppb)	2020	3	3	ND	NA	ND	NA	ND	NA	No	Runoff from herbicide used on row crops
<b>Chlorine</b> (ppm)	2020	[4]	[4]	1.04	0.20–1.85	ND	NA	ND	NA	No	Water additive used to control microbes
<b>Dalapon</b> (ppb)	2020	200	200	ND	NA	ND	NA	ND	NA	No	Runoff from herbicide used on rights-of-way
<b>Fluoride</b> (ppm)	2020	4	4	ND	NA	0.86	0.52–0.86	0.80	0.50–0.80	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>Haloacetic Acids [HAAs]<sup>1</sup></b> (ppb)	2020	60	NA	55.7	20.3–70.2	ND	NA	ND	NA	No	By-product of drinking water disinfection
<b>Total Organic Carbon [TOC]</b> (removal ratio)	2020	TT <sup>2</sup>	NA	ND	NA	1.37 <sup>3</sup>	1.22–1.54 <sup>3</sup>	1.39 <sup>3</sup>	1.17–1.95 <sup>3</sup>	No	Naturally present in the environment
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2020	80	NA	61	20.8–75.2	ND	NA	ND	NA	No	By-product of drinking water disinfection
<b>Turbidity<sup>5</sup></b> (NTU)	2020	TT = 1 NTU	NA	ND	NA	0.24	0.05–0.24	0.19	0.04–0.19	No	Soil runoff
<b>Turbidity</b> (lowest monthly percent of samples meeting limit)	2020	TT = 95% of samples meet the limit	NA	ND	NA	100	NA	100	NA	No	Soil runoff

## 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 By-products 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.

## REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	City of Albemarle				City of Kannapolis		VIOLATION	TYPICAL SOURCE
		MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
<b>Atrazine</b> (ppb)	2020	3	3	0.31	ND–0.31	0.15	ND–0.15	No	Runoff from herbicide used on row crops
<b>Chlorine</b> (ppm)	2020	[4]	[4]	1.46	0.19–1.67	1.50	0.20–1.50	No	Water additive used to control microbes
<b>Dalapon</b> (ppb)	2020	200	200	ND	NA	1.62	1.27–1.62	No	Runoff from herbicide used on rights-of-way
<b>Fluoride</b> (ppm)	2020	4	4	0.25	NA	ND	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>Haloacetic Acids [HAAs]<sup>1</sup></b> (ppb)	2020	60	NA	52	41–59	46	33–46	No	By-product of drinking water disinfection
<b>Total Organic Carbon [TOC]</b> (removal ratio)	2020	TT <sup>2</sup>	NA	1.56 <sup>4</sup>	1.50– 1.70 <sup>4</sup>	1.33 <sup>3</sup>	0.10–1.64 <sup>3</sup>	No	Naturally present in the environment
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2020	80	NA	49	26–73	55	37–55	No	By-product of drinking water disinfection
<b>Turbidity<sup>5</sup></b> (NTU)	2020	TT = 1 NTU	NA	0.17	0.03–0.17	0.081	0.015–0.081	No	Soil runoff
<b>Turbidity</b> (lowest monthly percent of samples meeting limit)	2020	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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	City of Concord				City of Albemarle		City of Kannapolis		VIOLATION	TYPICAL SOURCE
		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		
<b>Copper</b> (ppm)	2019	1.3	1.3	0.075	0/51	0.196 <sup>6</sup>	0/35 <sup>6</sup>	0.18 <sup>7</sup>	0/39 <sup>7</sup>	No	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Lead</b> (ppb)	2019	15	0	ND	0/51	ND <sup>6</sup>	0/35 <sup>6</sup>	ND <sup>7</sup>	0/39 <sup>7</sup>	No	Corrosion of household plumbing systems; Erosion of natural deposits

## UNREGULATED SUBSTANCES <sup>8</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Hillgrove WTP		Coddle Creek WTP		City of Albemarle		City of Kannapolis	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
<b>Sodium</b> (ppm)	2020	17	NA	14	NA	13.35	NA	14.19	NA
<b>Sulfate</b> (ppm)	2020	20	NA	20	NA	19.1	NA	21.6	NA



**UNREGULATED AND OTHER SUBSTANCES <sup>8</sup>**

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	City of Concord		City of Albemarle		City of Kannapolis	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
2-Methoxyethanol (ppb)	2019	NA	NA	ND	NA	2.3	NA
2-Propen-1-ol (ppb)	2019	NA	NA	NA	NA	0.32	NA
Alpha-Hexachlorocyclohexane (ppm)	2019	NA	NA	NA	NA	35.1	NA
Bromide (ppb)	2020	31.4	12.8–31.4	NA	NA	30.8 <sup>9</sup>	NA
Bromochloroacetic Acid (ppb)	2020	6.7	ND–6.7	3.02	2.48–3.02	16.5 <sup>9</sup>	NA
Bromodichloroacetic Acid (ppb)	2020	4.4	ND–4.4	3.32	1.08–3.32	NA	NA
Butylated Hydroxyl Anisole (ppb)	2019	NA	NA	NA	NA	31.8	NA
Chlorodibromoacetic Acid (ppb)	2020	1.1	0.31–1.1	0.372	0.323–0.372	3.2 <sup>9</sup>	NA
Chlorpyrifos (ppb)	2019	NA	NA	NA	NA	13.1	NA
Dibromoacetic Acid (ppb)	2020	0.70	0.28–0.70	NA	NA	NA	NA
Dichloroacetic Acid (ppb)	2020	57.5	22.3–57.5	23.3	12.4–23.3	32.2 <sup>9</sup>	NA
Dimethipin (ppb)	2019	NA	NA	NA	NA	5.0	NA
Ethoprop (ppb)	2019	NA	NA	NA	NA	17.1	NA
Germanium (ppb)	2019	NA	NA	NA	NA	1.3	NA
HAA6Br <sup>1</sup> (ppb)	2020	13.3	ND–13.3	NA	NA	NA	NA
HAA9 <sup>1</sup> (ppb)	2020	87.1	50.1–87.1	NA	NA	52.4 <sup>9</sup>	NA
Haloacetic Acid, Total <sup>1</sup> (ppb)	2020	77.8	43.6–77.8	NA	NA	3.9 <sup>9</sup>	NA
Manganese (ppb)	2020	22.3	0.34–22.3	1.55	0.869–1.55	23.3 <sup>9</sup>	NA
Monobromoacetic Acid (ppb)	2020	0.5	ND–0.5	NA	NA	1.8 <sup>9</sup>	NA
Monochloroacetic Acid (ppb)	2020	4.0	ND–4.0	NA	NA	NA	NA
N-Butanol (ppb)	2020	0.69	ND–0.69	NA	NA	NA	NA
Profenofos (ppm)	2019	NA	NA	NA	NA	3.1	NA
Total Organic Carbon [TOC] (ppm)	2020	4.9	3.4–4.9	2.69	2.45–2.69	NA	NA
Tribufos (ppb)	2019	NA	NA	NA	NA	1,760	NA
Trichloroacetic Acid (ppb)	2020	31.7	16.8–31.7	25.4	17.1–25.4	3,390 <sup>9</sup>	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 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> Compliance method: Step 1.

<sup>4</sup> Compliance method: ACC #2.

<sup>5</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 percent or more of the monthly samples must be less than or equal to 0.3 NTU.

<sup>6</sup> Sampled in 2020.

<sup>7</sup> Sampled in 2018.

<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.

<sup>9</sup> Sampled in 2019.