

2023 Annual Drinking Water Quality Report

Yadkin County-East Bend Water

Water System Number: NC 30-99-034

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source(s) 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 to providing you with this information because informed customers are our best allies. **If you have any questions about this report or concerning your water, please contact Terry Foster at (336) 849-7575. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. You can see these dates and times at www.yadkincountync.gov.**

What EPA Wants You to Know

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 (800-426-4791).

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 (800-426-4791).

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. Yadkin County-East Bend Water is responsible for providing high quality drinking water, but 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 or at <http://www.epa.gov/safewater/lead>.

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; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the number of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

When You Turn on Your Tap, Consider the Source

The water that is used by this system is purchased from Winston Salem/Forsyth County Utilities Commission, which is a surface treatment operation at PW Swan Water Treatment Plant that gets its source water from the Yadkin River, and is located at 2800 River Ridge Rd. Pfafftown NC 27040

Source Water Assessment Program (SWAP) Results

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 for Yadkin County-East Bend Water 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). The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
Yadkin River (PW Swann WT)	Moderate	September 2020

The complete SWAP Assessment report for Yadkin County-East Bend Water, (Winston Salem/Forsyth County Utilities 02-34-010) may be viewed on the Web at: www.ncwater.org/pws/swap. 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. 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.

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.

Violations that Your Water System Received for the Report Year

During 2021, the Yadkin County-East Bend Water system received **NO** MCL violations. This comes from continuously monitoring water quality and a good action plan for controlling contaminants.

Water Quality Data Tables of Detected Contaminants

We (along with Winston Salem- Forsyth County Utilities Commission) routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2023.** The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old. Lead and Copper for example

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

Important Drinking Water Definitions:

Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

Parts per million (ppm) or Milligrams per liter (mg/L) - One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/L) - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

Million Fibers per Liter (MFL) - Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

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

Maximum Residual Disinfection Level Goal (MRDLG) – 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.

Maximum Residual Disinfection Level (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.

Maximum Contaminant Level (MCL) - 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.

Maximum Contaminant Level Goal (MCLG) - 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.

Tables of Detected Contaminants

Microbiological Contaminants in the Distribution System - For systems that collect *less than 40* samples per month)

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	Absent	0	one positive monthly sample	Naturally present in the environment
Fecal Coliform or <i>E. coli</i> (presence or absence)	N	Absent	0	0 (Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive)	Human and animal fecal waste

E. coli - Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Fecal Indicators (enterococci or coliphage) - Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

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Asbestos Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Total Asbestos (MFL)	1/7/20	N	Non-Detect	Non-Detect		7	7	Decay of asbestos cement water mains; erosion of natural deposits

Lead and Copper Contaminants (Reduced Monitoring to every 3 years)

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	6/14/21	0.053	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	6/14/21	Non-Detect	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectants and Disinfection Byproducts Contaminants (Disinfection Byproducts have been reduced to once yearly, (TTHM and HAA5)).

Contaminant (units)	MCL/MRDL Violation Y/N	Your Water RAA (Stage 1)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	N	50	48 – 57	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	N	35	18 - 100	N/A	60	By-product of drinking water disinfection
Chlorine (ppm)	N	0.94 mg/l	0.52-1.66	MRDLG = 4	MRDL = 4	Water additive used to control microbes

For TTHM: 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 systems, and may have an increased risk of getting cancer.

For HAA5: Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Additional Monitoring of Other Contaminants

All of the contaminants listed above are just the ones that Yadkin County-East Bend Water samples for. All samples came back good. All other contaminants are sampled by Winston Salem/Forsyth County Utilities. The results of those samples can be seen on their Consumer Confidence Report or in the following Reports.

<https://www.cityofws.org/1537/Water-Quality-Reports>

Water Quality						
The following substances were detected in Winston-Salem/Forsyth County public water supply during the 2023 calendar year						
Regulated at the Treatment Plant						
Substance	Highest Level Allowed (EPA's MCL)	Ideal Goals (EPA's MCLG)	Range of Detections	Average Level Detected	Source	

Fluoride, ppm	4.0	4.0	0.001 - 1.215	0.799	Erosion of natural deposits; Water additive, promotes strong teeth
Orthophosphate, ppm	NA	1.0	0.60 - 1.10	0.88	Water treatment additive to prevent pipe corrosion
Total Organic Carbon, ppm	Treatment Technique	n/a	0.90 - 2.17	1.37	Naturally present in the environment
Turbidity, NTU	Treatment Technique	n/a	0.02 - 0.19	0.04	Soil erosion
Regulated in the Distribution System					
Total Trihalomethanes, ppb	80 LRAA	0.0	18.8 - 104.0	49.3	Byproducts of drinking water disinfection
Total Haloacetic Acids (5), ppb	60 LRAA	0.0	17.7 - 49.9	32.5	Byproducts of drinking water disinfection
Chlorine, ppm	4.0	4.0	0.72 - 2.11	1.45	Water treatment additive for disinfection
Total Coliforms	Less than 5% positive	0.0	ND - 1.61% ¹⁵	0.18%	Naturally present in the environment
Unregulated Substances at the Treatment Plant - Point of Entry					
Geosmin, ppt	Not Regulated	Not Regulated	1.15 - 5.37	3.38	Byproduct of algae growth
2-methylisoborneol, ppt	Not Regulated	Not Regulated	ND - 5.06	1.05	Byproduct of algae growth
Unregulated Substances at the Treatment Plant - Source Water					
Geosmin, ppt	Not Regulated	Not Regulated	ND - 9.23	1.93	Byproduct of algae growth
2-methylisoborneol, ppt	Not Regulated	Not Regulated	1.09 - 34.70	5.27	Byproduct of algae growth
¹⁵ 3 positive TC samples in May 2023 out of 186 samples. 1 positive TC sample in November 2023 out of 185 samples.					
As part of the Unregulated					
Contaminant Monitoring Rule 5,					

Physical & Mineral Characteristics		
For Calendar Year 2023		
Constituent	Annual Range Detected	Annual Average
Alkalinity, ppm	14.0 - 32.0	23.7
Calcium, ppm	3.19 - 3.63	3.46
Carbon Dioxide, ppm	1.5 - 8.1	6.0
Chlorine, ppm	0.92 - 2.02	1.43
Conductivity, micromhos/cm	86 - 139	107
Hardness, ppm	10.0 - 29.0	19.9
Magnesium, ppm	1.47 - 1.82	1.66
Manganese, ppm	ND - 0.019	0.003
pH, Standard Units	6.6 - 8.1	7.5
Phosphate, ppm	0.55 - 1.13	0.89
Potassium, ppm	1.61 - 2.26	1.94
Silica, ppm	5.8 - 13.9	10.0
Sodium, ppm	8.62 - 15.90	11.30
Temperature, Deg. C	5.5 - 30.6	18.0
Zinc, ppm	0.16 - 0.31	0.23
ND = not detected		

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Table 2 SWAP Results			
Source Name	Inherent Vulnerability Rating	Contaminant Rating	Susceptibility Rating
Salem Lake	Moderate	Higher	Higher
Yadkin River (Idols Dam)	Higher	Moderate	Higher
Yadkin River (PW Swann WTP)	Higher	Lower	Moderate

Regulated at the Consumers Tap - 2022 Compliance Samples					
Substance	EPA Action Level	EPA Ideal Goal	Number of Sites Sampled	Number of Sites Above the Action Level	90th Percentile Concentration, ppb
Lead, ppb	15.0 (action level)	0.0	52	1	<3.0

Copper, ppb	1300.0 (action level)	1300.0	52	0	<50.0
Unregulated at the Consumers Tap - 2023 Customer Samples					
Lead, ppb	15.0 (action level)	0.0	14	0	3.0
Copper, ppb	1300.0 (action level)	1300.0	15	0	86.0

Unregulated Substances at the Treatment Plant - Point of Entry¹⁴

Unregulated Substances at the Treatment Plant - Source Water¹⁴

Unregulated Substances at the Treatment Plant - Point of Entry¹⁴

As part of the Unregulated Contaminant Monitoring Rule 5, WSFC Utilities is voluntarily sampling for 29 per-and polyfluoroalkyl substances and lithium. Since we began this effort, all results have been non-detectable.

SUBSTANCE	IDEAL GOALS (EPA MCLG ²)	RANGE OF DETECTION	AVERAGE LEVEL DETECTED	SOURCE
Geosmin, ppt ³	Not Regulated	1.15 - 5.37	3.38	Byproduct of algae growth ¹²
2-methylisoborneol, ppt	Not Regulated	ND - 5.06	1.05	Byproduct of algae growth ¹²

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Geosmin, ppt	Not Regulated	ND - 9.23	1.93	Byproduct of algae growth
2-methylisoborneol, ppt	Not Regulated	1.09 - 34.70	5.27	Byproduct of algae growth