

2003 Annual Water Quality Report

City of Greensboro
PWS# 02-41-010

The City of Greensboro is pleased to provide you with the 2003 Water Quality Report. The Federal Safe Drinking Water Act requires all public water systems to provide this report to its customers. The report presents information about our water system and the quality of our water. Our constant goal is to provide a safe and dependable supply of drinking water. The City's Water Resources Department is proud to report that our drinking water meets or surpasses all State and Federal (EPA) standards, and no violations occurred.

Greensboro's Water Sources

Greensboro depends upon three surface water sources to supply our water: Lake Townsend, Lake Brandt and Lake Higgins. These lakes are located in northern Guilford County in the Upper Cape Fear River Basin within a protected watershed. When full, Greensboro's three water reservoirs hold about eight billion gallons of water.

Water from Lake Brandt is treated at the Mitchell Water Treatment Plant and water from Lake Townsend is treated at the Townsend Water Treatment Plant. Lake Higgins is used to refill Lake Brandt as needed.

Greensboro's water system serves more than 225,000 people with an average daily water demand of 29.7 million gallons per day in 2003.

During 2003, the City of Greensboro purchased minimal amounts of water from Reidsville, Winston-Salem, High Point, and Burlington. To obtain Water Quality Reports from these systems, please contact the following:

City of Reidsville	(336) 349-1070
City of Winston-Salem	(336) 727-8418
City of High Point	(336) 883-3410
City of Burlington	(336) 222-5130



Understanding Contaminants

All sources of drinking water, both tap and bottled, include water that travels over the surface of the land or through the ground. The water dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be expected in untreated water include:

- Microbial - viruses and bacteria from human, agricultural, or wildlife sources;
- Inorganic - salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, mining or farming;
- Pesticides and herbicides - may come from urban stormwater runoff, residential uses and agricultural uses;
- Organic chemicals - synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems;
- Radioactive materials - can be naturally occurring or 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 amount 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.

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), or visit their web site at www.epa.gov/safewater/hfacts.html.

2003 Drinking Water Quality Test Results

Over 120 substances are regularly monitored in your drinking water according to Federal and State regulations and to produce high quality water. The table below lists all the substances that were detected during the 2003 calendar year, all of which were below regulatory limits. For a full list of substances that were analyzed, please visit our website at www.greensboro-nc.gov/water or call 373-7527.

MONITORED LEAVING THE TREATMENT PLANT

SUBSTANCE OR CHARACTERISTIC	UNIT	HIGHEST LEVEL ALLOWED (MCL)	IDEAL GOAL (MCLG)	ANNUAL COMPLIANCE TESTS		AVERAGE OF ROUTINE TESTING	RANGE OF ROUTINE TESTING	POTENTIAL SOURCE OF SUBSTANCE
				Townsend	Mitchell			
Aluminum	mg/L	SS	0.20			0.17	0.02-0.46	Residual from the Treatment Process
Bromodichloromethane	µg/L	NR	zero	2.95	2.98			By-product of drinking water disinfection
Chloride	mg/L	SS	250			7.1	5.3-10.2	Naturally occurring minerals in the soil
Chlorine, Free residual ¹	mg/L	4.0 MRDL	4.0 MRDLG			1.71	T: 0.35-2.50; M: 1.00-2.50	Water additive used to control microbes
Chlorodibromomethane	µg/L	NR	60.0	0.93	0.84			By-product of drinking water disinfection
Chloroform	µg/L	NR	N/A	14.3	18.2			By-product of drinking water disinfection
Color	CU	SS	15			1.4	0.3-3.1	
Copper (Also monitored at customer's tap)	mg/L	SS	1.0			<0.01	0.01-<0.01	Corrosion of household plumbing
Fluoride, mg/L	mg/L	4.00	2.00	0.85	<0.01	0.46	0.06-0.97	Water additive which promotes strong teeth
Gross Beta	pCi/L	50	zero	<4	4.1			Decay of natural and man-made minerals
Hardness, Total ²	mg/L	NR				36	30-43	Natural deposits and the treatment process
pH	SU	SS	6.5-8.5	7.20	7.37	7.5	7.3-8.0	
Phosphorus, Total	mg/L	NR				0.25	0.20-0.33	Fertilizer runoff; Corrosion control treatment
Sodium	mg/L	NR		7.10	15.1	9.3	6.2-15.6	Naturally occurring minerals; treatment process
Sulfate	mg/L	SS	250	18	19	18.9	16.2-22.8	Naturally occurring minerals; treatment process
Total Dissolved Solids	mg/L	SS	500			79	60-91	Erosion of natural deposits; treatment process
Total Organic Carbon ³	mg/L	TT				T: 2.44; M: 2.20	T: 2.06-2.97; M: 1.67-2.84	Naturally present in the environment
Turbidity ⁴	NTU	TT	N/A			T: 0.05; M: 0.05	T: 0.01-0.54 NTU; M: 0.01-0.28 NTU T: 99.95%<0.50; M: 100%<0.50	Soil Runoff
Uranium	pCi/L	20	zero	3.8	<2			Erosion of natural deposits
Zinc	mg/L	SS	5.0			<0.01	<0.01	Corrosion plumbing fixtures; industrial waste

MONITORED IN THE DISTRIBUTION SYSTEM

Chlorine, Free residual ⁵	mg/L	4.0 MRDL	4.0 MRDLG			1.09	0.02-3.96	Disinfection additive used to control microbes
Total Haloacetic Acids HAA5	µg/L	60.0	N/A			34.3	25.5-64.7	By-product of drinking water disinfection
Total Trihalomethanes TTHM	µg/L	80.0	N/A			66.0	28.4-140.4	By-product of drinking water disinfection

MONITORED AT THE CUSTOMER'S TAP

Copper ⁶	mg/L	1.30 AL	1.30	100% of homes tested were below AL		0.004-0.177	Corrosion of Household Plumbing
Lead ⁶	µg/L	15.0 AL	zero	100% of homes tested were below AL		<3.0-9.0	Corrosion of Household Plumbing

¹ Chlorine residual tested hourly and monitored continuously on-line

² Considered to be moderately soft

³ Compliance based on 35-45% removal

⁴ 95% of samples <0.30

⁵ Tested at each bacteriological sample site

⁶ 50 homes at-risk for Copper and Lead plumbing corrosion tested every 3 years; Next sampling is June-September 2004

Key to Abbreviations Used in the Table

<	Less than symbol ; Which means below the detection limit of the instrument
AL	Action Level ; The concentration of a contaminant that triggers treatment changes or other requirements; If more than 10% of tap samples exceed the AL for Copper and Lead, water systems must take additional steps
CU	Color Units
M	Mitchell Water Plant ; Located in central Greensboro
MCL	Maximum Contaminant Level ; The highest level of a contaminant that is allowed in drinking water; MCLs are set at very stringent levels - a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of it affecting their health
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 and are non-enforceable public health goals
MRDL	Maximum Residual Disinfectant Level ; Highest level of a disinfectant allowed in drinking water; Convincing evidence shows 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 disinfectants to control microbes

µg/L	Micrograms per Liter ; Equivalent to Parts per Billion (ppb); Corresponds to one penny in \$10,000,000 or one minute in 2,000 years
mg/L	Milligrams per Liter ; Equivalent to Parts per Million (ppm); Corresponds to one penny in \$10,000 or one minute in two years
N/A	Not Applicable ; Information not applicable/not required for the water system or for that particular regulation
NR	Not Regulated ; Unregulated contaminants are those for which EPA has not established drinking water standards; Used by EPA to determine the occurrence of unregulated contaminants and if future regulation is needed
NTU	Nephelometric Turbidity Unit ; Measures cloudiness of water; Turbidity may not go above 1.0 NTU, and must not exceed 0.30 in 95% of daily samples in any month
pCi/L	Picocuries per Liter ; A measure of radioactivity in water
SS	Secondary Standards ; Non-enforceable guidelines for drinking water due to aesthetic considerations such as taste, color and odor; Substances are not considered a risk to human health at the established levels
SU	Standard Units
T	Townsend Water Plant ; Located northeast of Greensboro
TT	Treatment Technique ; A required process intended to reduce the level of a contaminant in drinking water

Greensboro Testing Highlights

- All substances detected were below regulatory limits. No violations occurred.
- 1,875 water samples were collected at various points in the distribution system to test for bacteria such as Total Coliform and E. Coli. No harmful bacteria were present in any sample.
- Tests were conducted for 40 Synthetic Organic Chemicals including pesticides and herbicides. None were detected.
- Of the more than 50 Volatile Organic Chemicals that are monitored, only trace amounts of three substances were detected: Bromodichloromethane, Chlorodibromomethane, and Chloroform. These are part of the Total THM group of disinfection by-products and were well below regulatory limits. (See Table)



What EPA Wants You to Know

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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Frequently Asked Questions

Someone left bottles at my house as part of a Community Water Test. Does the Greensboro Water Resources Department do this?

No. This is a private company trying to sell you a water-conditioning unit. The Water Resources Department will test your tap water if you have a concern. Contact the Service Center at 373-2033 or the Water Quality Lab at 373-7527.

Does Greensboro have hard water?

No. Greensboro's water is about 2 grains per gallon (equivalent to 36 mg/L), which is considered moderately soft. "Hard" refers to a measure of difficulty—how hard it is to form lather and suds, and to the hard mineral deposit left on fixtures. "Soft" water uses less soap and detergent to form lather and suds, and can make clothing and skin feel softer. However, very soft water is corrosive to household plumbing.

Why does my water appear cloudy?

Cloudy water is usually caused by tiny air bubbles in the water. This often happens during winter months when air gets mixed into the cold water and then the water is warmed as it sits in household plumbing or hot water heaters. Cold water can hold more air than warm water. When the warmed water is released from a faucet into a glass, air bubbles rise to the top and the water clears. There is no health risk associated with air in water. Air can also occur in water following routine repairs to waterlines. If the air does not clear up or if it seems excessive, call 373-2033.

Why does my water smell and taste like chlorine?

We are required by law to provide disinfectant (chlorine) residuals to the taps of our customers to protect the water from harmful bacteria. This may mean that you encounter chlorine-type tastes and odors from time to time. If you find these objectionable, you can fill a container with water and store it in the refrigerator for drinking. Leave the cap slightly loose and most of the chlorine smell should dissipate.

My water has a rusty appearance. What causes this?

Yellow, rusty, or brownish colored water is usually due to flow changes in the system that stir up sediment in the line. Discolored water can also be the result of in-house plumbing problems, such as the attachment of dissimilar metals like copper and galvanized pipes. Rusty water can occur as the result of water system maintenance like main break repairs and hydrant flushing. It is a temporary condition and should clear up in a couple of hours. If possible, avoid dishwashing or laundry until the condition clears up. If you experience ongoing discolored water, or to find out how long the condition should last, call 373-2033.

Questions and Public Involvement are Welcome

Water Resources is a department within the City of Greensboro local government, and is responsible for the operation and maintenance of the City's drinking water system.

Greensboro City Council meetings are held at 6:00 p.m. on the first and third Tuesday of each month in the Melvin Municipal Office Building at 300 W. Washington Street.

If you have any questions about this report or concerning your Greensboro City Water quality, please contact the Water Quality Laboratory at 373-7527.

If you have well water and have questions about your water quality, contact Guilford County Environmental Health at 641-7613.

For questions about your water bill or your meter, please call the Customer Service Division at 373-2344.

To report water main breaks, sanitary sewer backups, or other system maintenance concerns, please call the Construction and Maintenance dispatcher at 373-2033.

Visit our web site for additional information about Water Resources: www.greensboro-nc.gov/water.

For more drinking water information, visit EPA's web site at www.epa.gov/safewater.



En Español

Este informe contiene información muy importante. Tradúzcale o hable con un amigo quien lo entienda bien.



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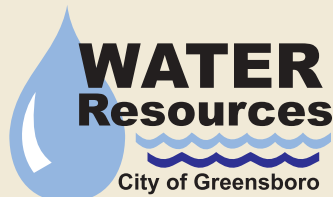


The City of Greensboro's 2003 Annual Water Quality Report contains important information about your drinking water.

Look inside for details about:

- The Sources of Your Drinking Water
- Substances that are Detected in Your Drinking Water
- Frequently Asked Questions
- Water Resources Contact Information

The City's Water Resources Department is proud to report that our drinking water meets or surpasses all State and Federal (EPA) standards, and no violations occurred.



Water - Use It Wisely

- #1 There are a number of ways to save water, and they all start with you.
- #12 Minimize evaporation by watering during the early morning hours, when temperatures are cooler and winds are lighter.
- #15 Use a broom instead of a hose to clean your driveway or sidewalk and save 80 gallons of water every time.