

# 2002 ANNUAL WATER QUALITY REPORT

The City of Greensboro has been providing water service for nearly one hundred years. Your Water Resources Department is proud to present you with the "Consumer Confidence Report" for 2002. We are committed to providing our customers with the best quality of water possible.

We are pleased to report that our testing shows the excellent quality of our water and that we meet or exceed all State and Federal drinking water standards.



115,000 copies of this document printed at a cost of \$.055 each

## Our Commitment to you...

Quality  
Drinking  
Water...



P. O. Box 3136  
Greensboro, NC 27402



### PWSID # 02-41-010

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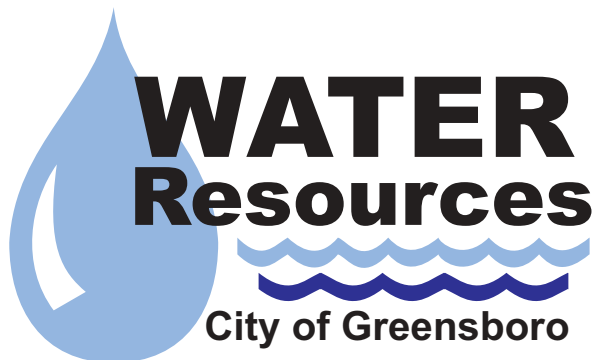
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### En Espanol

Este informe contiene informacion muy importante. Traduzcalo o hable con un amigo quien lo entienda bien.



Citizens who wish to have public input regarding water quality issues may attend Greensboro City Council meetings, held at 6:00 p.m. on the first and third Tuesday of each month, at the Melvin Municipal Office Building, 300 W. Washington Street.



# Where Greensboro's Water Comes From . . .

All of our water comes from **surface sources** (impounded reservoirs) within a **protected watershed**. Our water sources are the **Lake Higgins, Lake Brandt** and **Lake Townsend Reservoirs** which are fed primarily by **Reedy Fork Creek**. We are in the **Upper Cape Fear River Basin**.

When full, Greensboro's 3 water reservoirs hold almost 8 billion gallons of water. Greensboro has 11 water storage tanks that hold a total of 15 1/2 million gallons of water. Finished Water Storage at the plants and Distribution system totals 34 Million Gallons.



## HOW YOUR WATER IS TREATED . . .

Liquid alum is added to raw water and mixed to cause coagulation. The water is conveyed to a flocculation basin where the coagulated particles grow and the clarification of the water begins. Sedimentation basins allow the coagulated material to settle and the clarified water is filtered through sand and anthracite filters for removal of all remaining turbidity. Sodium hypochlorite is added for disinfection to guarantee bacteriologically safe water. Lime is added for pH adjustment and hydrofluosilicic acid is added as a fluoride source to retard dental decay. Finally a phosphate is added to retard the corrosive nature of water. The product is the finished water that is transported to your tap.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or manmade. All 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 the 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 at 1-800-426-4791**. Customers with **Internet access** can visit the **EPA Website** at <http://www.epa.gov/safewater> for additional information.

### CRYPTOSPORIDIUM

**Cryptosporidium** is a microscopic organism that, when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. The public can be protected by an effective treatment combination including sedimentation, filtration, and disinfection.

**Cryptosporidium Monitoring  
Last Sampled  
January – December 1998**

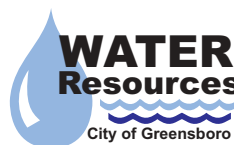
**Note:** During 1998, **monthly samples** were taken at the **raw (untreated water)** intakes at the **Lake Townsend** and **Lake Brandt** reservoirs. These were analyzed for **Cryptosporidium** and **Giardia lamblia**. There were **no detects** above the **minimum detection limits** of the analytical technique. Since no organisms were detected in the **untreated water**, testing of the treated water was not required.

For additional information visit the **CDC Website** at <http://www.cdc.gov/ncidod/dpd/crypto.htm>

### SPECIAL INFORMATION AVAILABLE

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)**.

For additional information visit the City of Greensboro website at [www.ci.greensboro.nc.us/wateres/Supply/index.htm](http://www.ci.greensboro.nc.us/wateres/Supply/index.htm)



These tables show the results of our monitoring for the period of January 1 to December 31, 2002 and the most recent test results of contaminants that were not due to be tested in 2002. **Only contaminants actually detected are listed.** Information on other monitored contaminants and the Water Resources Department's monitoring program may be obtained by calling the Townsend Water Laboratory at 373-7527.

**REGULATED**

Turbidity Yearly Average based on plant testing every 4 hours							
Contaminant	Violation Y/N	Yearly Average	Highest Level Detected	Unit Measurement	MCLG	MCL	Likely Source
Turbidity	no	T 0.03 M 0.04	0.57 0.47	NTU	TT	TT = 5 % of samples <0.5 NTU T = 99.99% M = 100%	Soil runoff

**Radioactive Contaminants Sampled 3-30-99 (Most recent sampling prior to 12-31-02) (next required sampling March 2003)**

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source
Gross Beta	no	T 1.8 M 2.6	pCi/liter	none	50	Decay of natural and man-made deposits

**Inorganic Contaminants Sampled 3-14-02 for Level Detected; Daily plant testing for Highest Level and Yearly Average**

Contaminant	Violation Y/N	Level Detected	Highest Level Detected	Optimum Range	Yearly Average	Unit Measurement	MCLG	MCL	Likely Source
Fluoride	no	T 0.87 M 0.77	1.32 1.32	0.8-1.2	0.78	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer

**Disinfection Distribution System Treatment Plant Tests**

Contaminant	Violation Y/N	Annual Average	Range	Highest Level Detected	Annual Average	Unit Measurement	MCLG	MCL	Likely Source
Chlorine	no	1.04	0.02 - 2.20	T 2.38 M 2.65	1.60 (plant tests every hour)	ppm	MRDLG = 4	MRDL = 4	Water additive used to control microbes

**MICROBIOLOGICAL CONTAMINANTS 2002**

There were a total of **1865** microbiological compliance samples collected from Distribution monitoring points in 2002. There were **no detects (positive samples)** for either **Total Coliform** or **Fecal Coliform**.

**Volatile Organic Contaminants and Disinfection By-Products 2002 Annual Average**

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source
<b>TTHM</b> Total Trihalomethanes	no	56.2*	ppb	0	80	By-product of drinking water chlorination
Range: 2002 Maximum 2002 Minimum		140 12.9	ppb	These results represent the <b>yearly running average (*)</b> , <b>maximum</b> measured level and <b>minimum</b> measured level of <b>Total Trihalomethanes</b> from <b>eight</b> sampling points in our distribution system measured <b>quarterly</b> .		
<b>Haloacetic Acids</b> Total HAA	no	38.8*	ppb	0	60	By-product of drinking water chlorination
Range: 2002 Maximum 2002 Minimum		89.5 9.3	ppb	These results represent the <b>yearly running average (*)</b> , <b>maximum</b> measured level and <b>minimum</b> measured level of <b>Haloacetic Acids</b> from <b>eight</b> sampling points in our distribution system measured <b>quarterly</b> .		

**Disinfection By-Product Precursors**

Contaminant	Violation Y/N	Finished Water Average	Unit Measurement	Range	MCL	Likely Source
<b>Total Organic Carbon (TOC)</b>	no	T 2.47	ppm	1.50 - 4.58	TT	Naturally present in the environment
	no	M 2.07		1.10 - 4.47	TT	

**Lead and Copper Monitoring Last Sampled June - September 2001 (next required sampling 2004)**

Contaminant	Detect Y/N	Maximum	90th Percentile	Action Level	Unit Measurement	Likely Source
Lead	yes	9	ND	15	ppb	Customer plumbing and service connection
Copper	yes	0.177	0.117	1.3	ppm	Customer plumbing and service connection

**Note:** Samples for **Lead and Copper Monitoring** were collected from specific sample sites meeting the EPA criteria (single-family homes with lead-soldered copper plumbing built prior to 1987). The data indicate that our **corrosion control program is functioning effectively** in preventing lead and copper contamination from domestic plumbing.

- #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.
- #1. There are a number of ways to save water, and they all start with you.



## UNREGULATED

### Volatile Organic Contaminants    Sampled 3-13-02

Contaminant	Detect Y/N	Average	Level Detected	Unit Measurement	Likely Source
Chloroform	yes	12.2	T 14.7 M 9.7	ppb	By-product of drinking water chlorination
Bromodichloromethane	yes	4.9	T 5.5 M 4.3	ppb	By-product of drinking water chlorination
Chlorodibromomethane	yes	1.55	T 1.6 M 1.5	ppb	By-product of drinking water chlorination

### Unregulated Inorganic Substances    Sampled 3-13-02

Contaminant	Detect Y/N	Average	Unit Measurement	Range Minimum	Range Maximum	Proposed	Likely Source
Sulfate	yes	20.6	ppm	11.8	27.5	500	Naturally occurring minerals in soil
Sodium	yes	10.0	ppm	6.2	25.2	20.0	Naturally occurring minerals in soil

As you can see by the tables, our system had **NO VIOLATIONS**. We have learned through our monitoring and testing that some constituents have been detected. None of the detected contaminants were found in amounts exceeding the maximum contaminant level or action level established by the EPA. **We're proud that your drinking water meets or exceeds all Federal and State requirements.**

During 2002 the City of Greensboro purchased water from the City of Reidsville. The table below shows Reidsville's water quality test results. The City of Greensboro also purchased minimal amounts of water from the cities of Winston-Salem and High Point. To obtain Water Quality Reports from these systems please contact the **City of Winston-Salem Utilities Division at (336) 727-8418** and the **City of High Point Water Filtration Plant at (336) 883-3410**.

#### CITY OF REIDSVILLE WATER QUALITY TESTING RESULTS

The City of Reidsville monitors over 100 different constituents in the water to ensure it is safe for you to use. We are pleased to report that our drinking water complies with all the state and federal regulations. Following is a summary of those regulated constituents that were detected in the water during 2002 and the last test results of contaminants that were not due to be tested in 2002. For more information contact the **Reidsville Public Works Department at (336) 349-1042**.

Compound & Unit	Highest Level Allowed By Regulation (MCL)	Maximum Contaminant Level Goal (MCLG)	Maximum Detected by City of Reidsville	Major Source of Compound
Gross Beta, pCi/liter	50.0	0	2.23	Naturally occurring
Gross Alpha, pCi/liter	15.0	0	0.17	Naturally occurring
Fluoride, mg/l	4.0	4.0	1.10	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Total Coliform, #positive Samples	5%	0	None	Human and animal fecal waste
Turbidity, NTU	TT	N/A	0.09 100%<0.5NTU	Soil runoff
Total Trihalomethane, mg/l	0.080	0	0.0660***	By-product of drinking water chlorination
Chloroform, mg/l	*	*	0.1600*	Component of Total Trihalomethane
Bromodichloromethane, mg/l	*	*	0.0200*	Component of Total Trihalomethane
Chlorodibromomethane, mg/l	*	*	0.0030*	Component of Total Trihalomethane
Haloacetic Acid, mg/l	0.060	0	0.0572***	By-product of drinking water chlorination
Dichloroacetic Acid, mg/l	**	**	0.0642**	Component of Haloacetic Acid
Trichloroacetic Acid, mg/l	**	**	0.0269**	Component of Haloacetic Acid
Monobromoacetic Acid, mg/l	**	**	0.0105*	Component of Haloacetic Acid
Copper, mg/l	AL = 1.3	0	0.274 90th percentile	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead, mg/l	AL = 0.015	0	0.007 90th percentile	Corrosion of household plumbing systems; erosion of natural deposits
Nickel, mg/l	None	None	0.014	Found in natural deposit as ores containing other elements
Nitrate, mg/l	10	10	2.46	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

\* These compounds are components of the Total Trihalomethanes. Therefore, no individual MCL has been established.

\*\* These compounds are components of the Haloacetic Acids. Therefore, no individual MCL has been established.

\*\*\* Running Annual Average

In 2002 Greensboro was also required to participate in the UCMR program (Unregulated Contaminant Monitoring Regulation), which required monitoring of 25 additional organic contaminants. Included were herbicides, pesticides, fuel additives, industrial wastes, etc. EPA uses the data generated by the UCMR to evaluate and prioritize contaminants on the Drinking Water Contaminant Candidate List, (CCL). These are the contaminants that EPA considers for possible new drinking water standards. After utilities have entered data, EPA will make reports available to the States and to the public at the website <http://www.epa.gov/safewater/data/ucmrgetdata.html>. **All the results were below instrument detection limits.**

#### DEFINITIONS

**T - Townsend Water Treatment Plant**  
**M - Mitchell Water Treatment Plant**

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

**Maximum Contaminant Level** - The "Maximum Allowed" (**MCL**) is the highest level of a contaminant that is allowed in drinking water.

**Maximum Contaminant Level Goal** - The "Goal" (**MCLG**) is the level of a contaminant in drinking water below which there is no known or expected risk to health.

**MRDL** - Maximum Residual Disinfectant Level

**MRDLG** - Maximum Residual Disinfectant Level Goal

**ND (Non-Detects)** - laboratory analysis indicates that the constituent is not present.

**NTU** - Nephelometric Turbidity Units; a measure for water clarity

**Parts per million (ppm) or Milligrams per liter (mg/l)** - one part per million

**Parts per billion (ppb) or Micrograms per liter** - one part per billion

**pCi/liter** - Picocuries per liter is a measure of the radioactivity in water

**TT** - Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water.