

**CITY OF GREENSBORO 2012 WATER QUALITY RESULTS
MONITORED LEAVING THE TREATMENT PLANT**

SUBSTANCE	UNIT	HIGHEST ALLOWED by EPA MCL ³	PUBLIC HEALTH GOAL MCLG ⁴	ANNUAL COMPLIANCE TESTING	RESULTS		RANGE	Violation	COMMENT	POTENTIAL SOURCE OF SUBSTANCES
					AVERAGE					
Aluminum	mg/L ²	REGULATED ⁵	0.20		T ¹ 0.01 M ¹ 0.05		T <0.01 -0.06 M <0.01 -0.15	NO	Secondary Standard	Residual from the Treatment Process Solder, electronics, fire retardants Erosion of natural deposits Erosion of natural deposits Erosion of natural deposits; metal refinery Metal refinery; coal burning factory Corrosion of galvanized pipes; natural erosion
Chloride	mg/L	REGULATED ⁵	250		T ¹ 13.7 M ¹ 13.0		T 6.24-18.3 M 5.79-20.9	NO	Secondary standard	
Chlorine, Total	mg/L	4.0 MRDL ¹¹	4.0 MRDLG		T ¹ 3.04 M ¹ 3.06		T 1.8-3.9 M 1.8-3.9	NO	Chlorine residual tested every 2 hours, monitored continuously on-line	Water additive used to control microbes
Chloramines	mg/L	4.0 MRDL	4.0 MRDLG		T ¹ 2.54 M ¹ 2.61		T 1.1-3.4 M 1-3.7			Erosion of natural deposits; steel mills
Color	CU	REGULATED ⁵	15		T ¹ 1.8 M ¹ 2.2		T <1-9 M <1-10	NO	Secondary Standard	
Free Ammonia	mg/L	NOT REGULATED ⁶			T ¹ <0.05 M ¹ <0.05		T 0-0.2 M 0-0.54			
Fluoride	mg/L	4.000	2.00	T ¹ 0.54 M ¹ 0.13	T ¹ 0.49 M ¹ 0.32		T 0.09-0.89 M 0.06-0.72	NO		Water additive which promotes strong teeth
Hardness, Total	mg/L	NOT REGULATED			T ¹ 44 M ¹ 43		T 23 - 67 M 20 - 65	NO	Considered to be moderately soft (USGS standards established in 1962)	Natural deposits and the treatment process
Iron	mg/L	REGULATED ⁵	0.300	T ¹ <0.060 ND M ¹ <0.060 ND	T ¹ .02 M ¹ .02		T <0.01-0.17 M <0.01-0.18	NO	Secondary Standard	Plumbing corrosion and natural deposits
Manganese	mg/L	REGULATED ⁵	0.050	T ¹ <0.010 ND M ¹ <0.010 ND	T ¹ <0.01 ND M ¹ .01		T <0.01-0.06 M <0.01-0.12	NO	Secondary Standard	Plumbing corrosion and natural deposits Landfill and cropland runoff; natural deposits Erosion of natural deposits
Nitrate as Nitrogen	mg/L	10.0	10.0	T ¹ <1.00 ND M ¹ <1.00 ND	T ¹ .32 M ¹ .43		T .10 - 0.92 M .10 - 0.79	NO		Fertilizer runoff; sewage; natural deposits
pH	SU	REGULATED ⁵	6.5-8.5	T ¹ M ¹			T 7-9.1 M 7-8.9	NO	Secondary Standard	
Phosphate, total	mg/L	NOT REGULATED			T ¹ 2.33 M ¹ 2.17		T 1.38-5.48 M 0.73-3.44	NO		Fertilizer runoff; Corrosion control treatment Mine waste; natural deposits
Sodium	mg/L	NOT REGULATED		T ¹ 17.40 M ¹ 19.86	T ¹ 15.0 M ¹ 17.3		T 6.6-24 M 11.2-25	NO		Naturally occurring minerals in the soil
Sulfate	mg/L	REGULATED ⁵	250	T ¹ 28 M ¹ 33	T ¹ 35.5 M ¹ 42.7		T .1 - 121 M 7.6 - 77.6	NO	Secondary Standard	Naturally occurring minerals in the soil
Total Dissolved Solids (TDS)	mg/L	REGULATED ⁵	500		T ¹ 108 M ¹ 116		T 70 - 159 M 80 - 157	NO	Secondary Standard	Erosion of natural deposits; treatment process Leaching from ore processing
Turbidity ¹³	NTU ¹⁰	TT ⁹	N/A ¹⁴		T ¹ 0.05 M ¹ 0.11		T 0.02-0.17 M 0.06-0.36	NO	99.99% of all samples were <0.30. The EPA requirement is 95%.	Soil runoff
Zinc	mg/L	REGULATED ⁵	5.0		T ¹ <0.01 M ¹ <0.01		T <0.01-0.03 M <0.01-0.01	NO	Secondary Standard	Corrosion of plumbing fixtures; industrial waste By-product of drinking water disinfection By-product of drinking water disinfection
DISINFECTION BY-PRODUCT PRECURSORS									Secondary Standard	
Total Organic Carbon	mg/L	TT ⁹	N/A		T ¹ 2.15 M ¹ 1.90		T 1.68-2.71 M 1.34-2.18	NO	Compliance based on 45%; Compliance method Step 1 and Acc4	Naturally present in the environment
SYNTHETIC ORGANIC CHEMICALS				1					Includes pesticides and herbicides.	Pesticide/herbicide runoff Discharge from rubber & chemical factories

MONITORED IN THE DISTRIBUTION SYSTEM

DISINFECTION BY-PRODUCTS	UNIT	HIGHEST ALLOWED	PUBLIC HEALTH GOAL	ANNUAL COMPLIANCE TESTING	AVERAGE	RANGE	Violation	COMMENT	POTENTIAL SOURCE OF SUBSTANCES
Total Trihalomethanes TTHM	µg/L ¹⁶	80.0	N/A		RAA 51.8	24.9 - 88.4	NO		By-product of drinking water disinfection
Total Haloacetic Acids HAA5	µg/L	60.0	N/A		RAA 37.5	25.5 - 57.2	NO		By-product of drinking water disinfection
Chlorine, Total residual	mg/L	4.0 MRDL ¹¹	4.0 MRDLG		2.18	<0.01 - 3.70	NO	Analyzed as each biological sample is collected (2169 in 2012)	Disinfection additive used to control microbes
Total Coliform		5.0% of monthly samples positive	zero		1.23%		NO	2 positives of 162 monthly distribution samples in October 2012	Naturally present in the environment
E. Coli		zero	zero		0.00%		NO	0 positives of 2169 distribution samples collected in 2012	Human and animal fecal waste

MONITORED AT THE CUSTOMERS TAP

Lead Jan-Jun. 2012	µg/L	15.0 AL ¹⁵	zero	100.00% of homes were below A.L.* 90th percentile=3	<3 - 9	NO	A minimum of 100 at-risk homes tested by a State certified lab for copper & lead	Corrosion of household plumbing
Copper Jan-Jun. 2012	mg/L	1.30 AL	1.30	100.00% of homes were below A.L. 90th percentile= 0.07	<0.05 - .28	NO	All consumer complaints tested for Copper & Lead by the Water Resources Lab	Corrosion of household plumbing

DEFINITIONS AND KEY TO ABBREVIATIONS USED IN A TABLE

1	T	Townsend Water Plant, located northeast of Greensboro, with source water supplied by Lake Townsend
	M	Mitchell Water Plant, located in central Greensboro, with source water supplied by Lake Brandt
2	mg/L	Milligrams per Liter equivalent to Parts per Million (ppm). (Corresponds to one penny in \$10,000, or one minute in two years.)
3	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.
4	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.
5	Secondary Standards	Non-enforceable guidelines for drinking water due to aesthetic considerations such as taste, color and odor. These substances are not considered a risk to human health at the established levels.
6	<	Less than symbol, which means below the detection limit of the instrument
7	ND	Non-Detects, laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used
8	MFL	Million Fibers per Liter, count of asbestos fibers that are longer than 10 micrometers
9	TT	Treatment Technique, a required process intended to reduce the level of a contaminant in drinking water
10	NTU	Nephelometric Turbidity Unit, measures the cloudiness of the water; at no time can the turbidity go above 1.0 NTU, and must not exceed 0.30 in 95% of daily samples in any month
11	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.
12	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.
13	CF	Combined filtered effluent used for compliance
14	N/A	Not-Applicable, information not applicable/not required for the water system or for that particular regulation
15	AL	Action Level, the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. If more than 10% of tap samples exceed the AL for Copper and Lead, water systems must take additional steps.
16	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.
17	RAA	Running Annual Average.
18	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.
	**MCL note	MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, 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 having the described health effect.