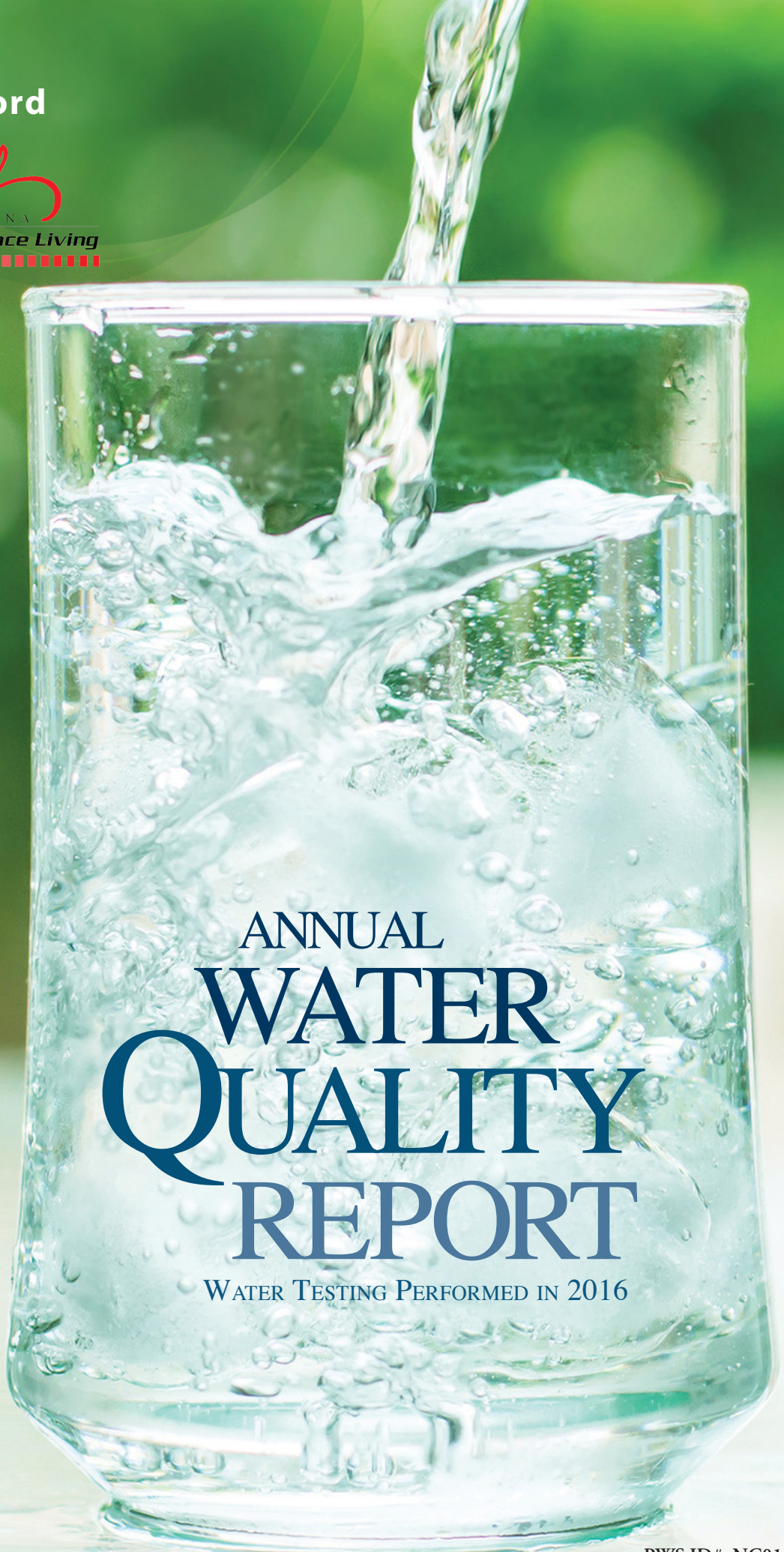


Presented By
City of Concord



ANNUAL
WATER
QUALITY
REPORT

WATER TESTING PERFORMED IN 2016

We've Come a Long Way

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

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 at <http://water.epa.gov/drink/hotline>.

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 Wilmer Melton, Director of Public Works, at (704) 920-4200. For information on the quality of Albemarle's water, contact Chris Maidene at (704) 984-9656. 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 p.m., in the Council Chambers located at 35 Cabarrus Avenue W., Concord, NC.

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 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 www.epa.gov/lead.

LT2 Rule

Long Term 2 Enhanced Surface Water Treatment Rule (LT2) data: To comply with the LT2 rule, the City of Concord began collecting samples for cryptosporidium and E. coli in October 2015. The City of Kannapolis began collecting these samples in October 2016. Samples were collected once a month from each raw water source. This sampling will continue for 24 months. Here are the results that were obtained in 2016:

Concord Cryptosporidium

The following averages and ranges were obtained from the following raw water sources (results shown are reported in oocysts/L):

RAW WATER SOURCE	AVERAGE RESULT	RANGE OF RESULTS
Lake Don T. Howell	ND	ND
Lake Fisher	0.007	ND–0.087
Lake Concord	0.09	ND–0.100

Kannapolis Cryptosporidium

Cryptosporidium was detected in only one raw water sample out of 9 raw water samples; the one detection was found at Second Creek, at a level of 0.190 oocysts/L.

E. coli

The following averages and ranges were obtained from analyses of the following Concord and Kannapolis raw water sources (results shown are reported as MPN, colonies/100 mL of sample):

RAW WATER SOURCE	AVERAGE RESULT	RANGE OF RESULTS
Lake Don T. Howell (Concord)	2.6	<1–13.2
Lake Fisher (Concord)	9.0	<1–33.1
Lake Concord (Concord)	40.1	2–304
Kannapolis Lake (Kannapolis)	2.67	0–4
Coddle Creek (Kannapolis)	526	140–1130
Second Creek (Kannapolis)	2788	261–7170

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 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 may also come from gas stations, urban storm-water 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.

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 Reports, which include maps, background information, and a relative susceptibility rating of higher, moderate, or lower.

The relative susceptibility rating of each source for the cities of Concord, Kannapolis, and Albemarle 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 PCSs		
SOURCE NAME	SUSCEPTIBILITY RATING	SWAP REPORT DATE
Lake Fisher/Coldwater Creek (Concord)	Moderate	July 3, 2015
Lake Concord/Coldwater Creek (Concord)	Moderate	July 3, 2015
Lake Don T. Howell (Concord and Kannapolis)	Moderate	July 3, 2015
Kannapolis Lake (Kannapolis)	Moderate	July 13, 2015
Second Creek/Back Creek (Kannapolis)	Moderate	July 13, 2015
Tuckertown Reservoir (Albemarle)	Higher	July 14, 2015
Narrows Reservoir/Badin Lake (Albemarle)	Moderate	July 14, 2015

The complete SWAP Report for the city of Concord may be viewed on the Internet at http://www.ncwater.org/files/swap/SWAP_Reports/0113010_7_3_2015_85_11.pdf.

The complete SWAP Report for the City of Kannapolis may be viewed at http://www.ncwater.org/files/swap/SWAP_Reports/0180065_7_13_2015_85_11.pdf.

The complete SWAP Report for the City of Albemarle may be viewed at http://www.ncwater.org/files/swap/SWAP_Reports/0184010_7_14_2015_17_22.pdf.

Please 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 consumer confidence report was prepared. If you have any questions about the SWAP Report, please contact the Source Water Assessment staff by phone at (919) 715-2633.

A susceptibility rating of higher does not imply poor water quality, but rather the system's potential to become contaminated by PCSs in the assessment area.

QUESTIONS?

For more information about this report, or for any questions related to your drinking water, please call Rusty Campbell, Water Treatment Superintendent, at (704) 920-5337.

Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; 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.

Our water system recently violated a drinking water standard that has now been corrected. Monitoring results for water samples collected during the time period ending March 31, 2016, show that the contaminant concentration from three sampling locations in our water system exceeded the MCL for total haloacetic acids (HAA). All other locations were in compliance. The exceedance location IDs and amounts detected were: BO2: 60.4 ppb; BO6: 64.2 ppb; and BO8: 63.0 ppb. We have taken additional samples at these locations and had them tested. These samples, along with all other samples, showed that we met the standard with a level of 57.5 ppb. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

REGULATED SUBSTANCES											
				City of Concord		Hillgrove WTP		Coddle Creek WTP			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2016	3	3	NA	NA	NA	NA	0.1	<0.1–0.1	No	Runoff from herbicide used on row crops
Chlorine (ppm)	2016	[4]	[4]	0.99	0.21–2.12	NA	NA	NA	NA	No	Water additive used to control microbes
Fluoride (ppm)	2016	4	4	NA	NA	0.50	NA	0.60	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2016	60	NA	64.2	26.1–79	NA	NA	NA	NA	Yes	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] ¹ (ppb)	2016	80	NA	69	28.1–107.3	NA	NA	NA	NA	No	By-product of drinking water disinfection
Total Coliform Bacteria [RTCR–after April 2016] (positive samples)	2016	TT	NA	4	NA	NA	NA	NA	NA	No	Naturally present in the environment
Total Coliform Bacteria [before April 2016] (# positive samples)	2016	1 positive monthly sample	0	0	NA	NA	NA	NA	NA	No	Naturally present in the environment
Total Organic Carbon [TOC] ² (removal ratio)	2016	TT	NA	NA	NA	1.30 ³	0.95–1.57	1.34 ³	1.17–1.65	No	Naturally present in the environment
Turbidity ⁴ (NTU)	2016	TT = 1 NTU	NA	NA	NA	0.44	0.03–0.44	0.14	0.04–0.14	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	NA	NA	99	NA	100	NA	No	Soil runoff

REGULATED SUBSTANCES											
				City of Albemarle		City of Kannapolis					
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE		
Atrazine (ppb)	2016	3	3	0.33	ND–0.877	0.130	ND–0.130	No	Runoff from herbicide used on row crops		
Chlorine (ppm)	2016	[4]	[4]	2.12	0.28–2.12	0.92	0.20–2.26	No	Water additive used to control microbes		
Fluoride (ppm)	2016	4	4	0.55	ND–0.55	0.44	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories		
Haloacetic Acids [HAA] (ppb)	2016	60	NA	49	24.4–70.5	44	29–56	Yes	By-product of drinking water disinfection		
TTHMs [Total Trihalomethanes] ¹ (ppb)	2016	80	NA	58	22–118.4	50	16–83	No	By-product of drinking water disinfection		
Total Coliform Bacteria [RTCR–after April 2016] (positive samples)	2016	TT	NA	0	NA	0	NA	No	Naturally present in the environment		

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	City of Albemarle		City of Kannapolis		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Total Coliform Bacteria [before April 2016] (# positive samples)	2016	1 positive monthly sample	0	0	NA	0	NA	No	Naturally present in the environment
Total Organic Carbon [TOC]² (removal ratio)	2016	TT	NA	1.94	1.31–2.12	1.43 ³	1.14–1.76	No	Naturally present in the environment
Turbidity⁴ (NTU)	2016	TT = 1 NTU	NA	0.96	0.04–0.96	0.159	0.027–0.159	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	99	NA	100	NA	No	Soil runoff

Tap Water Samples 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%TILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES			AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES
Copper (ppm)	2016	1.3	1.3	0.306	0/60	0.06 ⁵	0/36 ⁵	0.22 ⁶	0/31 ⁶	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	0	1/60	NA	NA	NA	NA	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES ⁷

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
Sodium (ppm)	2016	16	NA	13	NA	19.6	18.53–20.7	16.68	NA
Sulfate (ppm)	2016	23	NA	27	NA	23.6	21.1–26.1	30.1	NA

¹ 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.

² Depending on the TOC in our source water, the system MUST have a certain % removal of TOC or must achieve alternative compliance criteria. If we do not achieve that % removal, there is an alternative % removal. If we fail to meet the alternative % removal, we are in violation of a Treatment Technique.

³ TOC compliance method: Step 1.

⁴ 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% or more of the monthly samples must be less than or equal to 0.3 NTU.

⁵ Sampled in 2014.

⁶ Sampled in 2015.

⁷ 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.

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3) ⁷

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	City of Concord		Hillgrove WTP		Coddle Creek WTP		City of Kannapolis	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
1,4-Dioxane (ppb)	2014	NA	NA	NA	NA	NA	NA	3.1	NA
Chlorate (ppb)	2015	113	NA	185	NA	68.2	NA	NA	NA
Chromium (Total) (ppb)	2015	0.42	NA	0.24	NA	0.69	NA	NA	NA
Chromium-6 (ppb)	2015	0.40	NA	0.21	NA	0.41	NA	NA	NA
Strontium (ppb)	2015	129	NA	133	NA	128	NA	NA	NA
Vanadium (ppb)	2015	0.28	NA	0.44	NA	0.21	NA	NA	NA

Definitions

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 Byproducts 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.