Charleston Water System

What's in Your Water?

Important information about your tap water

2007 Water Quality Report

CHANCES ARE, YOU'VE PROBABLY WONDERED WHERE YOUR TAP WATER COMES FROM, how it's treated, and what testing is done to ensure it is safe to drink. The purpose of this report is to provide answers to these questions and give you the information you need to make informed decisions about your drinking water.

Where Your Water Comes From

Your water is treated at the Hanahan Water Treatment Plant, which uses surface water from the Bushy Park Reservoir and the Edisto River. We disinfect the treated water with chloramines and chlorine dioxide to keep it clean as it travels through pipes to homes and businesses. We also add fluoride at levels recommended by the American Dental Association to help prevent tooth decay.

Tap Water Regulations

All water utilities must adhere to state and federal regulations, which protect public health by setting limits on the levels of contaminants in drinking water. Charleston Water System meets or exceeds all drinking water standards and regulations established by the US Environmental Protection Agency (US EPA) and the SC Department of Health and Environmental Control (DHEC). In 2007, we conducted more than 56,000 tests on our drinking water to ensure it is safe to drink.

About Charleston Water System

Charleston Water System is a publicly owned water and wastewater utility. We provide safe, clean drinking water to more than 400,000 people in the City of Charleston, James Island, North Charleston, Hanahan, Hollywood, Ravenel and West Ashley. In addition to our 105,000 water accounts, we provide water to other utilities in the area, including Mt. Pleasant Waterworks, the Town of Sullivan's Island, Isle of Palms Water and Sewer Commission, Town of Folly Beach, City of Lincolnville, St. John's Water Company (serving Kiawah and Seabrook Islands), and Dorchester County Public Works.

PARTNERSHIP FOR SAFE WATER

Charleston Water System is a member of the Partnership for Safe Water, a voluntary program for utilities that are committed to treating drinking water beyond what's required by law.

OUR MISSION is to protect public health and the environment of our service community by providing clean water services of exceptional quality and value.

This report is produced annually by Charleston Water System and is distributed to all customers during the month of May. It is also posted on our web site, www.charlestonwater.com. If you have questions or comments, please contact us at info@charlestoncpw.com or call (843) 727–6800.

www.charlestonwater.com

Charleston Water System, (Commissioners of Public Works of the City of Charleston, SC) public water system ID 1010001.

Definitions for Water Quality Table

(on the next page)

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.

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.

Action Level (AL)

The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

Maximum Residual Disinfectant Level (MRDL)

The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant 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 contamination.

What's In Your Tap Water?

There is no such thing as "pure" water. As it moves through the water cycle, water picks up minerals, plant matter, and man-made contaminants that eventually end up in lakes and streams, where many cities get their drinking water. The compounds that may be present in lakes and streams include:

Biological Compounds, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife.

Inorganic compounds, such as salts and metals, which can be naturally occurring or the result of 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, runoff, and residential uses.

Organic compounds, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, can also come from gas stations, runoff, and septic systems.

Radioactive materials, which can be naturally occurring or be the result of oil and gas production and mining activities.

While the water treatment process removes many of these compounds, it's impossible to remove them all. The compounds found in our water were all at safe levels, meaning they were below the limits set by the US EPA, which regulates public water systems. The US Food and Drug Administration (FDA) establishes limits for compounds in bottled water.

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 EPA's **Safe Drinking Water Hotline** at **1–800–426–4791**.

Descriptions of the compounds detected in Charleston's water and the EPA limits for each compound are listed in the table on the next page.

Lead and Drinking Water

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.

Charleston Water System 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 two 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. You can pick up a testing kit at our office locations: 103 St. Philip Street, Downtown, and 6296 Rivers Avenue, North Area.

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/safewater/lead.

Pharmaceuticals in Drinking Water

A recent national study found that trace levels of pharmaceuticals and personal care products (PPCPs) are present in our nation's waterways, and potentially, in drinking water.

Advances in technology have enabled laboratories to detect these compounds at incredibly small levels (parts per trillion)—levels that were previously undetectable. There is no evidence that exposure at these levels causes any impact on human health, and federal and state regulations do not establish limits for these compounds in drinking water or require utilities to test for them.

Recognizing the importance of this issue, Charleston Water System elected to test our source water and treated drinking water for a variety of these compounds. Of the 36 compounds tested for, only three were shown to be present in Charleston's treated drinking water at the parts-per-trillion level: caffeine, phenol (a compound in wood and cleaning products), and TDCPP (a flame retardant compound).

Charleston Water System will continue to test for these compounds and follow the research being conducted on this issue. For more information on this topic, visit the US EPA's web site at www.epa.gov/ppcp/.

How You Can Help

Don't flush prescription medications! Instead, remove medications from their original packaging and mix with coffee grounds or kitty litter in an empty can or plastic bag, then throw in the trash.

Water Quality Lab Results for 2007

Constituent	Maximum Contaminant Level (MCL) set by EPA	Maximum Contaminant Level Goal (MCLG)	Actual Level in Charleston's Water for 2007	Possible Sources in Water
Biological Constituents and Physical Characteristics				
Total Coliform Bacteria A group of bacteria whose presence in water indicates possible contamination with soil or waste from warm blooded animals.	Number of positive samples must not exceed 5% of monthly samples taken	Zero positive samples	1.1 % highest percentage of positive monthly samples (all repeat samples were satisfactory)	Naturally present in the environment
Turbidity A measure of the amount of suspended particles in the water (cloudiness); an indicator of overall water quality and filtration effectiveness.	Requires a specific treatment technique (TT); 95% of monthly samples must be less than 0.3 NTU	None	0.14 NTU highest level detected; the lowest % of samples meeting the limit was 100%	Soil runoff
Cryptosporidium A parasite spread through human and animal waste that causes gastrointestinal illness. People with weakened immune systems are more likely to suffer severe symptoms than healthy individuals.	No MCL; EPA requires specific treatment techniques (TT)	None	Zero *Cryptosporidium* oocysts per 1 liter of water	Naturally present in the environment from human and animal sources
Giardia A parasite spread through human and animal waste that causes gastrointestinal illness. People with weakened immune systems are more likely to suffer severe symptoms than healthy individuals.	No MCL; EPA requires specific treatment techniques (TT)	None	Zero *Giardia* cysts per 1 liter of water	Naturally present in the environment from human and animal sources
Inorganic Compounds				
Copper A metal widely used in household plumbing that may corrode into water (2006 results*).	90% of samples must be less than the 1.3 ppm action level (AL)	1.3 ppm	0.051 ppm (no samples exceeded the action level)	Corrosion of household plumbing materials
Lead A metal no longer used in water pipes, but may be present in plumbing fixtures or old pipes; may corrode into water (2006 results*).	90% of samples must be less than the 15 ppb action level (AL)	0 ppb	90th percentile = 3 ppb (one sample exceeded the action level)	Corrosion of household plumbing materials
Cadmium A metal that may corrode into water from galvanized pipes (2006 results*).	5 ppb	5 ppb	0.27 ppb	Corrosion of galvanized pipes, erosion of natural deposits, discharge from metal refineries, runoff from waste batteries and paints
Nitrate/Nitrogen Nitrates and nitrites are nitrogen-oxygen compounds that can become a source of pollution in the form of unwanted nutrients.	10 ppm	10 ppm	0.094 ppm	Runoff from fertilizers
Fluoride A chemical that is naturally occurring in some water sources, particularly groundwater. It is also added to drinking water to help prevent tooth decay.	4 ppm	4 ppm	0.12 ppm in source water 1.2 ppm in finished water	Added to prevent tooth decay
Disinfectants				
Chlorine Dioxide A disinfection agent added in small amounts to disinfect against bacteria.	800 ppb MRDL	800 ppb MRDLG	<100 ppb (range 0 to <100 ppb)	Added to protect against bacteria
Chloramine Residual A compound of chlorine and ammonia that is added in small amounts to treated water to disinfect against bacteria.	4 ppm MRDL	4 ppm MRDLG	RAA = 2.3 ppm (range: 2.0 - 2.5 ppm)	Added to protect against bacteria
Disinfection Byproducts				
Total Trihalomethanes (THMs) A group of chemicals formed when chlorine used to disinfect drinking water reacts with naturally occurring organic and inorganic matter in the water.	Running Annual Average (RAA) must be less than 80 ppb	None	RAA = 8.4 ppb (range: 4.8 - 14 ppb)	Byproduct of disinfection
Total Haloacetic acids (HAAs) A group of chemicals formed when chlorine used to disinfect drinking water reacts with naturally occurring organic and inorganic matter in the water.	Running Annual Average (RAA) must be less than 60 ppb	None	RAA = 13 ppb (range: 3.7 - 24 ppb)	Byproduct of disinfection
Chlorite A byproduct formed when chlorine dioxide is used to disinfect water.	1 ppm	0.80 ppm	0.78 ppm (range: 0.56 to 0.78 ppm)	Byproduct of disinfection
Organic Compounds				
Total Organic Carbon (TOC) The measure of organic substances in a body of water, mostly from naturally occurring sources such as plant material. TOC has no health effects, but it provides a measurement for the potential formation of disinfection byproducts.	No MCL; EPA requires a specific treatment technique (TT). 45% TOC removal required	None	61% TOC removal (range: 53% to 64%) removal ratio (RAA) = 1.29 TOC values (2.1-2.7 ppm) TOC sampled daily	Naturally present in the environment

Abbreviations: **ppm** : Parts per million (mg/l)
ppb : Parts per billion (ug/l)
RAA : Running Annual Average
NTU : Nephelometric Turbidity Units

* EPA requires testing once every 3 years

Get Involved

Charleston Water System is governed by a board of elected Commissioners, which meets monthly. These meetings are open to the public, and citizen participation is welcomed. Meetings are typically held the fourth Tuesday of every month at 9 a.m. at 103 St. Philip Street.

Contact Us

For more information about this report, contact our Customer Service Department at 843–727–6800. We also have information available on our web site at www.charlestonwater.com or you may e-mail us at info@charlestoncpw.com.

Office Locations

Downtown
103 St. Philip Street

North Charleston
6296 Rivers Avenue

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

Abbreviations:

PCU : Platinum Cobalt Units
umhos/cm : Micromohs /centimeter

A Message from the US Environmental Protection Agency

The US EPA has implemented regulations to ensure that water sold by public water systems contains no harmful contaminants. Charleston Water System meets or exceeds the water quality standards set forth by these regulatory bodies, but the EPA requires utilities to include the following advisory statement:

"Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with HIV/AIDS or other immune system disorders, persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, some elderly and some infants can be particularly at risk from infections. These people should seek advice 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 (1-800-426-4791)."

Protecting Our Sources of Drinking Water

An important part of the treatment process is identifying the contaminants that may be present in our source water. To that end, the SC Department of Health and Environmental Control has implemented a Source Water Assessment and Protection Plan (SWAP), which lists all the *potential* sources of contamination for each watershed in the state. For the Saluda-Edisto and Catawba River basins, where Charleston Water draws water for treatment, DHEC's report identifies those entities, including gas stations, industries, farms, etc., that *could* affect our source water quality. DHEC, as well as other regulatory agencies, routinely monitor the watershed, and our laboratory continuously monitors the water in the Edisto River and Bushy Park Reservoir prior to treatment. You can download the complete Source Water Assessment for Charleston Water System by visiting DHEC's website at www.scdhec.net/water/html/srcewtr.html.

Protecting Our Environment

Charleston Water System is committed to preventing pollution and improving our environment. We are a member of the SC Environmental Excellence Program (SCEEP) and certified under ISO 14001, the international standard for excellence in environmental management.

Additional Water Quality Information

These water quality results are not health related, but can affect the aesthetics of drinking water, such as taste, odor, hardness, etc. The EPA has established secondary standards for some of these parameters, which are non-enforceable, recommended guidelines.

Compounds/Water Measurement	Charleston's Water (average for 2007)	Highest level recommended by EPA
Secondary Standards		
Chloride	19 ppm	250 ppm
Color	3 PCU	15 PCU
Iron	0.10 ppm	1.3 ppm
Manganese	<0.05 ppm	0.05 ppm
Total Dissolved Solids (TDS)	120 ppm	500 ppm
Sodium	12 ppm	No EPA standard
General Water Information		
Alkalinity	27 ppm	No EPA standards for these measurements
Conductivity	198 umhos/cm	
Hardness	58 ppm	
Ortho-phosphate	1.3 ppm	
Silica	7.6 ppm	
Temperature	22°C	