



Este informe contiene información muy importante sobre el agua que usted toma. Para obtener una versión de este documento en español, visite www.colaccr-esp.com.

City of Columbia 2017 Water Quality Report

Public Water System 401001 ♦ Columbia, SC ♦ City of Columbia Water Works

A publication of the City of Columbia's Department of Utilities Operations



Automated System Tracks Use for High Service Pumps at Lake Murray Water Treatment Plant

The Lake Murray Water Treatment Plant (WTP) has implemented a new “smart technology” that regulates the pumps pushing water into the distribution system. The new *Specific Energy* software provides recommendations to the operators on which pump(s) to run to meet water demands in the system while maximizing energy efficiency. The program selects the most efficient combination of pumps and speeds that also operates each pump within its preferred operating range. By allowing the system to regulate the pumps and pump speeds, we can reduce maintenance cost and extend the life cycle of the equipment.

The new system is being tested at the Lake Murray WTP and, if successful, will be implemented at the Canal WTP once current water storage upgrades are completed. These projects are connected to the larger effort to make Columbia Water “Best in Class” at treating and distributing water in South Carolina.

Columbia Water Capital Improvements Include Smart Technology

In an ongoing effort to better serve our customers, Columbia Water is turning to “smart technology” to improve our treatment and distribution operations as well as the customer experience. In 2017, City of Columbia City Council approved a rate increase that will help fund upgrades to the water infrastructure that we cannot see, but that makes a difference in how we operate.

Beginning in the fall of 2018, Columbia Water will begin the roll-out of our new Automated Metering Infrastructure, also known as AMI. This updated technology will allow Columbia Water to monitor and collect water use data from our customers in real-time through a digital network system. That means that not only will all of our water customers will receive a new water meter, but they will receive more accurate water bills and eventually have access to usage alerts and real-time monitoring. The project is expected to take two-years to fully implement, so be on the lookout for new meters in your area!



For additional information:

City of Columbia Water Quality Complaints,
Billing, & Customer Care Center
803-545-3300
columbiasc.net/customer-care
SC DHEC - Bureau of Water
803-898-4300

US EPA Drinking Water Hotline
800-426-4791

National Lead Information Clearinghouse
800-424-LEAD

Consumer Product
Safety Commission
800-638-2772



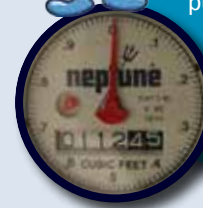
**KNOWLEDGE
ON TAP**

Keeping Our Customers Informed!

The City of Columbia has an ongoing educational effort to help City water customers save money by conserving water, looking for leaks around the house, and understanding the water billing process. Knowledge on Tap has helpful information for every customer and is available to you 24-7 either online or through our Customer Care Representatives!

Thirsty for more?

Check out our helpful videos that walk you through checking for leaks at the meter and inside the home, the real cost of water use habits, what to do if you have water that has an odor or is discolored, and how the City measures water usage. You can find more Knowledge on Tap online at www.ColumbiaSC.Net/Drinking-Water.



Your water meter should be located in your front or side yard along the public right-of-way. It can be used to help you find leaks! Have you located yours?

What is in Columbia's Drinking Water?

The City of Columbia's drinking water met all state and federal requirements during 2017 and is considered safe to drink. The City's SC DHEC-certified laboratory performs more than 200,000 analyses each year to ensure that the water the City supplies to its customers meets all US EPA and SC DHEC standards. Additional analyses are performed by SC DHEC, the state agency that regulates and oversees public water systems. Samples are tested at every stage of the treatment process and at hundreds of points throughout more than 2,400 miles of pipeline that make up the City's distribution system. The City also conducts voluntary testing for microbial contaminants. Since 2004, the City has been participating in the Partnership for Safe Water. The Partnership's mission is to improve the quality of water delivered to customers by improving water system operations. The substances listed below were detected in the City's water supply during 2017.

Substance	Highest Level Allowed (MCL)	Detected Level	Range of Detection	Goal (MCLG)	Violated	Year Sampled	Source of Contaminant
INORGANIC COMPOUNDS							
Lead	15 ppb (Action Level)	3.8 ppb (90th%) 0-13 ppb (range)	None of the 50 sites sampled exceeded the action level	0	None	2017	Corrosion of household plumbing systems & naturally occurring in the environment (1)
Copper	1.3 ppm (Action Level)	0.096 ppm (90th%) 0-0.45 ppb (range)	No sites exceeded the action level	0	None	2017	Corrosion of household plumbing systems & naturally occurring in the environment
Fluoride	4 ppm	0.61 ppm	0.58-0.63 ppm	4 ppm	None	2017	Naturally occurring in the environment by erosion of natural deposits and added at the treatment plants as an aid in preventing tooth decay
Nitrate/Nitrite (as Nitrogen)	10 ppm	0.2 ppm	0.077-0.32 ppm	10 ppm	None	2017	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
Chlorite (Lake Plant)	1 ppm	0.476 ppm	0.270-0.476 ppm	0.8 ppm	None	2017	By-product of drinking water disinfection
Chlorite (Canal Plant)	1 ppm	0.862 ppm	0.454-0.862 ppm	0.8 ppm	None	2017	By-product of drinking water disinfection
ORGANIC COMPOUNDS							
Total Trihalomethanes (THMs) (Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform)	80 ppb (LRAA - Locational Running Annual Average)	25 ppb (LRAA)	21-30 ppb	0	None	2017	By-product of drinking water chlorination; formed when chlorine reacts with organic matter
Haloacetic Acids (HAAs) (Monochloroacetic Acid, Monobromoacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Dibromoacetic Acid)	60 ppb (LRAA)	36 ppb (LRAA)	31-45 ppb	0	None	2017	By-product of drinking water chlorination; formed when chlorine reacts with organic matter
Total Organic Carbon (Lake Plant)	TT	45.57% removal (35% removal required)	41.0-50.3% removal	None	None	2017	Naturally occurring in the environment
Total Organic Carbon (Canal Plant)	TT	43.91% removal (35% removal required)	34.7-60.7%* *Ratio met through alternate criteria	None	None	2017	Naturally occurring in the environment
MICROORGANISMS							
Turbidity (Lake Plant)	<0.3 NTU TT	0.09 NTU-Highest single measurement 100%-Lowest monthly percentage meeting standard		N/A	None	2017	Naturally occurring in the environment
Turbidity (Canal Plant)	<0.3 NTU TT	0.15 NTU-Highest single measurement 100%-Lowest monthly percentage meeting standard		N/A	None	2017	Naturally occurring in the environment
Total Coliform Bacteria	Presence of coliform bacteria in <5% of monthly samples	2.67% (Highest monthly percentage positive)	N/A	0	None	2017	Naturally occurring in the environment
DISINFECTANTS							
Chloramine	4 ppm	2.7 ppm (Highest quarterly average)	1.8-2.8 ppm	4 ppm	None	2017	Water additive to control microbial growth
Chlorine Dioxide (Lake Plant)	800 ppb	143 ppb	0-143 ppb	800 ppb	None	2017	Water additive to control microbial growth
Chlorine Dioxide (Canal Plant)	800 ppb	203 ppb	0-203 ppb	800 ppb	None	2017	Water additive to control microbial growth

NOTIFICATIONS

(1) We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 2017, we did not complete all monitoring or testing for Chlorite, and therefore cannot be sure of the quality of your drinking water during that time. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

City of Columbia water customers can call (803) 545-3300 for more information about water testing or to have your home water tested by our laboratory staff.



Columbia Water regularly flushes fire hydrants to keep water moving through the system and to improve water quality.



Action Level — A limit, that is not a MCL, that applies to contaminants such as lead and copper that enter the water after treatment. Action levels may trigger special monitoring, public education or treatment techniques.

Detected Level — The concentration of a substance detected in a water sample. The detected levels specified in the table to the left are the highest levels detected if multiple samples were collected, except for Total Organic Carbon (TOC) or unless specified otherwise. For TOC, the specified removal rate is the rate required by SC DHEC based on data reported by the City.

HRL (Health Reference Level) — A US EPA-defined benchmark for evaluating contaminant occurrence based on health

effects information.

LRAA (Locational Running Annual Average) — An average at each sample point for four quarters in the calendar year.

MCL (Maximum Contaminant Level) — US EPA's regulation limit for the highest allowable amount of a substance in drinking water.

MCLG (Maximum Contaminant Level Goal) — The US EPA's target level for a contaminant below which there are no known or suspected health effects. The MCLG is not necessarily a level achievable with currently available treatment techniques.

N/A (Not Applicable) — Does not apply.

NTU (Nephelometric Turbidity Unit) — Units of measure to indicate water clarity.

ppb (parts per billion) — One part in a billion parts (equivalent to one penny in \$10,000,000).

ppm (parts per million) — One part in a million parts (equivalent to one penny in \$10,000).

TT (Treatment Technique) — A required process intended to reduce the level of a contaminant in drinking water.

90th% (90th Percentile) — The Action Level for lead and copper for a water system that serves more than 100,000 people.

< Less than

> Greater than

SC DHEC has completed a comprehensive water assessment report on the Broad River Diversion Canal (also referred to as the Columbia Canal) and Lake Murray. These Source Water Assessment reports are available and can be reviewed at 1136 Washington Street or by contacting 803-545-3300.

What Do These Terms and Symbols Mean?

US EPA requires that all annual water quality reports contain the following:

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 US EPA's Safe Drinking Water Hotline (800-426-4791).

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 and radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants 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, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater 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, stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production

and can also come from gas stations, urban stormwater runoff, and septic systems.

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

In order to ensure that tap water is safe to drink, the US EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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 are available from the Safe Drinking Water Hotline (800-426-4791). Testing since 1994 has revealed no signs of Cryptosporidium in Columbia's treated water.

Additional Finished Water Parameters

Secondary Drinking Water Standards

Some attributes of water, listed in the table to the right, affect the taste, odor, and hardness of our drinking water. Because these attributes of water do not impact a person's health, the US EPA has established secondary standards that are non-enforceable, recommended guidelines. The City meets these guidelines in addition to the regulations set forth by the US EPA. See [US EPA Regulated Secondary Drinking Water Standards](#) for details.

US EPA REGULATED SECONDARY DRINKING WATER STANDARDS					
Parameter	Units	MCL	Range	Average	Noticeable effects above the MCL
Chloride	ppm	250	8.76-15.45	10.18	salty taste
Color	Color units*	15	0.00-0.00	0.00	visible tint
Iron (Total)	ppm	0.3	0.01-0.05	<0.05	rusty color; sediment; metallic taste; reddish or orange staining
Manganese	ppm	0.05	0.005-0.007	0.006	black to brown color; black staining; bitter metallic taste
pH	s.u.**	TT	7.35-8.65	7.87	low pH: bitter metallic taste; corrosion high pH: slippery feel; soda taste; deposits
Sulfate	ppm	250	16.19-27.7	20.71	salty taste

* A standard scale that was developed for measuring color intensity in water samples.
** Standard unit (s.u.); pH is measured on a logarithmic scale, ranging from 0 to 14 s.u., with 7 s.u. being neutral pH.

Non-Regulated Parameters

The City also collects information about additional parameters that are not regulated by the US EPA. While these parameters do not impact a person's health, they may be useful for those using water for specialized purposes like brewing, or maintaining equipment like chillers and boilers. See [Additional Non-Regulated Parameters](#) for details.

ADDITIONAL NON-REGULATED PARAMETERS			
Parameter	Units	Range	Average
Sodium	ppm	7.20-13.00	9.46
Calcium	ppm	11.00-14.00	11.86
Magnesium	ppm	1.70-2.10	1.89
Total Hardness (CaCO ₃)	ppm	29-39	35.08
Nitrate	ppm	0.02-1.42	0.22
Total Alkalinity	ppm	20.00-30.00	24.52
Total Phosphate	ppm	0.75-1.11	0.93

For More Information

Customers who need additional water quality information can contact [Ketki Sheth, Water Works Laboratory Manager, at kssheth@columbiasc.net or \(803\) 733-8211.](#)

Water & Sewer Line Responsibility

The image below shows which portions of a customers' water and sewer service are the responsibility of Columbia Water and which are the responsibility of the property owner.

Columbia Water cannot repair private lines.



The property owner owns and is responsible for maintaining:

- ◆ The water service line running between the meter and the building
- ◆ All plumbing attached to the water service line
- ◆ And the sewer service line up to the property line

Columbia Water owns and maintains:

- ◆ The water main
- ◆ The water service line running to the meter
- ◆ The meter box
- ◆ The meter
- ◆ The sewer service line from the property line to the sewer main
- ◆ And the sewer main

If there is a problem with any of these, contact the City at 803.545.3300, and we will address it.