

Waterline

Annual Water Quality Report for Central Water System

Yes! Your water is safe to drink! The James City Service Authority (JCSA) provides safe water to enhance and sustain the County residential and business community. The JCSA manages the County's central water system as well as seven independent community water systems. Our goal is to furnish you with the best possible water at the lowest possible cost. We continually surpass all State and Federal health and safety standards. As our customers, we are pleased to provide you with this annual water quality report for calendar year 2005.

All drinking water, including bottled drinking water, may contain small or trace amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's *Safe Drinking Water Hotline (800-426-4791)*.

As part of the James City County government, the JCSA was created to acquire, construct, operate, and maintain an integrated water system in designated areas of the County. The JCSA is governed by a Board of Directors which holds hearings on budget and other financial matters, approves contracts, and approves changes to Regulations Governing Utility Service. The Board of Directors' meets on the fourth Tuesday of each month at 7 p.m. in the Building F Board Room, James City County Government Center, 101 Mounts Bay Road. These meetings are televised live on Channel 48, the local government access channel. Upcoming meeting agendas may be requested from the General Manager's office, *253-6806*.

Water system improvements...

JCSA has completed construction of several water lines, water storage and water production improvement projects that will result in additional water distribution capacity as well as water production capacities for our water system. Construction on a 5 million gallon per day groundwater treatment facility was completed early 2005 in the Five Forks area of the County. Water line improvements for the First Colony area was completed in late 2005. Two 1.25 million gallon elevated storage tanks are currently under design and are scheduled to be in service in late 2007.

Where it comes from...

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

The Central Water System consists of 16 well facilities and the Groundwater Treatment Facility (GTF) located throughout the County. Each facility has storage tanks, booster pumps, distribution system and appurtenances. The majority of the system wells pump water from the Chickahominy-Piney Point Aquifer at a depth of 250-300 feet. Five wells that take water from the Potomac Aquifer are at a depth of 300-836 feet. The GTF takes water from the Middle and Lower Potomac Aquifers that range in depth from 800-1200 feet. During 2005 the well system produced an average of 4.5 million gallons per day (*mgd*) for 16,531 residential and business connections. Current Central System design capacity is 4.43 mgd.

The Virginia Department of Health conducted a Source Water Assessment of the Central System in 2001. Some wells were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consists of maps showing the source Water Assessment area, an inventory of known Land Use Activities and Potential Sources of contamination, susceptibility Explanation Chart, and Definitions of Key Terms.

How it is treated...

The JCSA is fortunate to already have high quality water coming from all aquifers. While the water is safe, we provide a disinfectant in accordance with Federal regulations before the water enters the distribution system for consumption. At the GTF, a different treatment process known as reverse osmosis (R.O.) is utilized. This process removes salts from the water before additional finished water chemical adjustments are made for pH, corrosion and hardness. Once the chemistry of the water has been adjusted and tested, the finished water is distributed to the system. The Central Water System disinfection process includes the injection of a liquid hypochlorite solution at eight well facilities and the GTF. These nine injection sites chlorinate 21 wells and provide sufficient disinfection for the entire system. Chlorine residual tests are routinely taken to ensure the water system is thoroughly disinfected.

The JCSA tests for more than 100 contaminants to make sure the water you drink is safe. We are pleased to report that for calendar year 2005, the water delivered to your homes and businesses complied with all State and Federal requirements. The following regulated contaminants test results indicate samples with low level concentrations of fluoride, total trihalomethane, total Haloacetic Acid, gross alpha, and gross beta that are below allowed levels which means our drinking water is safe to drink and poses no health risk. Also listed are bromodichloromethane, bromoform, chloroform, and dibromochloromethane which are unregulated contaminants (required to monitor) which were detected in our drinking water and are also below allowed levels. Not listed are many of the other contaminants for which we tested that were not detected.

"Our goal is to furnish you with the best possible water at the lowest possible cost."

"The JCSA was created to acquire, construct, operate, and maintain an integrated water system in James City County."

"...a detailed source water assessment will be conducted within the next few years to find ways to better protect our water resources."

"...the water delivered to your homes and businesses complied with all State and Federal requirements."

2005 Water Quality Report

Contaminant (units)	Violation	Range	Level Detected	MCL	MCLG	Date of Sample	Potential Source of Contaminant
Regulated Contaminants							
Total Trihalo-methane (ppb)	No	0.5-54	16	80	0	2005 quarterly	by-product of drinking water chlorination
Combined Radium (pCi/l)	No	0.3 - 0.8	0.8	5	0	7/19/05	erosion of natural deposits
Gross Alpha (pCi/l)	No	0.0 - 0.1	0.1	15	0	4/13/05	erosion of natural deposits
Gross Beta (pCi/l)	No	0.0 - 7.9	7.9	50**	0	4/13/05	decay of natural and man-made deposits
Lead (ppd)	No	ND - 9	4	AL = 15	0	7/23/04	Corrosion of household plumbing systems, erosion of natural deposits
Copper (ppm)	No	ND - 0.29	0.24	AL = 1.3	1.3	7/28/04	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives.
Total Haloacetic Acid (5) (ppb)	No	ND - 4	1*	60	0	2005 quarterly	by-product of drinking water chlorination
Free Chlorine (ppm)	No	0.87 - 2.20	2.20	MRDL 1.49	MRDLG 4	2005 monthly	water chlorination
Unregulated Contaminants							
Bromodichloro-methane (ppb)	No	ND - 1.7	1.7	NR	NR	9/26/05	by-product of drinking water chlorination
Bromoform (ppb)	No	ND - 3.6	3.6	NR	NR	4/13/05	by-product of drinking water chlorination
Chloroform (ppb)	No	ND - 2.2	2.2	NR	NR	9/26/05	by-product of drinking water chlorination
Dibromochloro-methane (ppb)	No	ND - 3.2	3.2	NR	NR	4/13/05	by-product of drinking water chlorination

*Highest annual average of any sampling point/Annual average of all samples. **The MCL for Beta particles is 4 mrem/year, but EPA considers 50 pCi/l to be the level of concern.

Definitions

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water.
Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health.
Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed in drinking water.
Maximum Residual Disinfectant Level Goal (MRDLG) - The highest level of a disinfectant added to which no anticipated adverse effects would occur.
ppm - One part per million; the equivalent of a single penny in \$10,000. **NR** - Not regulated but monitoring required.
ppb - One part per billion; the equivalent of a single penny in \$10,000,000. **ND** - No Detects. Lab analysis indicates that the contaminant is not present.
pCi/l - Picocuries per liter (a measure of radioactivity). **AL** - Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
NA - Not applicable.

Additional health information...

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, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts 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, EPA prescribes regulations which limit the amount a 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.

In 2005, 600 routine bacteriological and chlorine residual samples were taken from the distribution system. 597 samples were negative (absent) for both total and fecal Coliform. Three samples (2%) were Coliform positive (1/1/05, 2/1/05, 8/1/05), but all repeat check samples were negative.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as people with cancer undergoing chemotherapy, people 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. Call the *Safe Drinking Water Hotline (800-426-4791)* for guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other micro-biological contaminants.

Unregulated Contaminants...

In 2002 the JCSA participated in an EPA required monitoring program to test for 11 unregulated contaminants at all water entry points. The purpose of the program was to provide data to support the EPA's Administrator's decision concerning whether or not to regulate these contaminants in the future for the protection of public health. The JCSA is happy to report that all results were below the detection limit. Additional information about the results are available to the public by calling the JCSA Utility Operations Division at (757) 229-7421.

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General Manager..... 253-6805
 Customer Services..... 253-6800
 Emergency, normal hours 7:00 a.m. - 3:30 p.m..... 229-7421
 Emergency, after hours..... 566-0112

