

ANNUAL WATER QUALITY REPORT

Reporting Year 2022



Presented By
City of Stuart





Meeting the Challenge

The City of Stuart is pleased to present this annual water quality report, which covers all water quality analysis from January 1 to December 31, 2022. Over the years, the city has consistently produced drinking water that meets all federal and state standards. The city continues to explore new methods for delivering the highest-quality drinking water to our consumers. As new challenges to drinking water safety arise, the city is committed to protecting source water, promoting water conservation, and providing community education while continuing to serve the needs of all our water users.

Our Source Water

The city's water is obtained from a surficial aquifer through 24 production wells. The city's water treatment facility has the capacity to treat six million gallons of water per day. Major components consist of four ion exchange vessels, four air-stripping towers, three solids contact units, three million-gallon storage tanks, and five high-service pumps for distribution to our customers. Treatment consists of per- and polyfluoroalkyl substances (PFAS) removal, hardness and color reduction, filtration, disinfection, and fluoridation. The Stuart water treatment facility provides an average of 2.99 million gallons of clean, safe drinking water every day to its consumers.

Think Before You Flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of our waterways by disposing responsibly. To find a convenient drop-off location near you, please visit <https://bit.ly/3IeRyXy>.

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 of infections. These people should seek advice from their healthcare providers about drinking water. The U.S. Environmental Protection Agency (U.S. EPA) and the Centers for Disease Control and Prevention (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 at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Lead in Home Plumbing

Homes built before 1986 are more likely to have lead pipes, fixtures, and solder. 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 we cannot control the variety of materials used in plumbing components. The City of Stuart's drinking water meets or exceeds all regulatory standards. As a rule, the city protects its customers from the exposure of lead through its regular treatment process. Because of our treatment methods, the city is required to perform lead sampling once every three years. The city uses a slightly positive Langelier Index (a method of determining the stability of the water), which is a means of protecting water mains and household plumbing fixtures from corrosion. This is done by depositing a thin layer of calcium carbonate on the walls of pipes to create a protective coating. In addition, we add sodium hexametaphosphate to protect the water from leaching lead and copper from pipes and fittings.

In 2022 the city conducted lead and copper sampling in accordance with U.S. EPA's Lead and Copper Rule tap water compliance and monitoring regulations. These sampling events required no further action. Information on lead in drinking water and the steps you can take to minimize exposure is available from the Safe Drinking Water hotline (800) (426)-4791 or at www.epa.gov/safewater/lead.

“Thousands have lived without love, not one without water.”

—W.H. Auden

QUESTIONS?

For questions about this report, or any questions about your water, please call Michael Woodside, Water Treatment Chief Operator, at (772) 288-5343.

Water's Worth It

Water should be clear - but not invisible. Indispensable to jobs, the economy, our health, and our communities, water runs through our lives in many ways. Everyone uses water, and everyone must be responsible for it. To do that, we each need to learn to value water and come together to share an important message about water's worth.

In 2007 the City of Stuart recognized that the average per-person water use was 32 percent higher than the state average. This included indoor and outdoor use. The average family turns on the tap between 70 and 100 times daily. It's estimated that up to half of that goes to outdoor irrigation. Over 50 percent of the water typically applied to lawns is lost to evaporation or run-off due to overwatering. Stuart's main objectives for water conservation are to provide a reliable, high-quality product at a reasonable cost; maximize the City's limited supply; keep a sustainable source of water for the City's future, and continue to educate citizens through outreach programs.

One such vital program is the Water's Worth It campaign provided by the Water Environmental Federation. Water's Worth It focuses on five essential components: Your Respect, Your Effort, Your Health, Your Future, and Our Passion. Everyone who uses water is encouraged to join the City of Stuart in this coordinated effort to raise awareness about the value and importance of water. By combining our voices behind this campaign, each of us can contribute to a positive change. Be as good to water as water's been to you. Water's worth it!

Over the past fifteen years, conservation efforts in the City of Stuart have effectively lowered the per capita use rate from 219 to 164 gallons per day. The City's source, a surficial aquifer, is the shallowest type of aquifer and has a limited supply. The City will continue to take proactive measures to ensure a healthy water supply for the future.



Understanding Water Quality

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, in some cases, 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, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, 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 the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Sampling Results

This annual report is designed to inform you about the quality of the city's drinking water. Last year, we took hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic contaminants. The table below shows only those contaminants that were detected in the water.

The State of Florida requires that the city monitor for certain substances less than once per year, as 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.

PRIMARY REGULATED CONTAMINANTS

Inorganic Contaminants

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	MCL VIOLATION (YES/NO)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Barium (ppm)	10/11/2022	No	0.0045	NA	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	10/11/2022	No	0.42	NA	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive which promotes strong teeth when at the optimum level of 0.7 ppm
Nitrate [as nitrogen] (ppm)	10/11/2022	No	0.20	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	10/11/2022	No	20.8	NA	NA	160	Saltwater intrusion; leaching from soil

STAGE 2 DISINFECTANTS AND DISINFECTION BY-PRODUCTS

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	MCL VIOLATION (YES/NO)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Chloramines (ppm)	1/2022-12/2022 monthly	No	2.9	1.6–3.6	4.0	4.0	Water additive used to control microbes
Haloacetic Acids (five) [HAA5]–Stage 2 (ppb)	11/08/2022	No	35.8	22.8–37.2	NA	60	By-product of drinking water disinfection
TTHM [total trihalomethanes]–Stage 2 (ppb)	11/08/2022	No	34.5	30.3–46.8	NA	80	By-product of drinking water disinfection

Lead and Copper (Tap water samples were collected from sites throughout the community)

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	AL EXCEEDANCE (YES/NO)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	MCLG	AL (ACTION LEVEL)	LIKELY SOURCE OF CONTAMINATION
Copper [tap water] (ppm)	09/20/2022	No	0.056	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead [tap water] (ppb)	09/20/2022	No	0.0017	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits

SECONDARY CONTAMINANTS

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	MCL VIOLATION (YES/NO)	HIGHEST RESULT	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Aluminum (ppb)	10/11/2022	No	42	NA	NA	200	Natural occurrence from soil leaching
Chloride (ppm)	10/11/2022	No	27.9	NA	NA	250	Natural occurrence from soil leaching
Sulfate (ppm)	10/11/2022	No	15.1	NA	NA	250	Natural occurrence from soil leaching
Total Dissolved Solids (ppm)	10/11/2022	No	159	NA	NA	500	Natural occurrence from soil leaching

UNREGULATED CONTAMINANTS

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	AVERAGE RESULT	RANGE OF RESULTS	LIKELY SOURCE OF CONTAMINATION
Perfluorooctanesulfonate Acid [PFOS] (ppt)	09/06/2022	4.5	ND–4.5	Surfactant or emulsifiers; used in firefighting foam, circuit board etching acids, alkaline cleaners, floor polish, and as a pesticide active ingredient for insect bait traps

Source Water Assessment

In 2022 the Florida Department of Environmental Protection (FDEP) performed a source water assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are 30 potential sources of contamination identified for this system, with low to moderate susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp.



BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water.

800
TRILLION

1 The average cost in cents for about 5 gallons of water supplied to a home in the U.S.

The percent of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers.

99

50 The average daily number of gallons of total home water use for each person in the U.S.

The percent of Earth's surface that is covered by water.

71

330
MILLION

The amount of water on Earth in cubic miles.

The percent of the human brain that contains water.

75

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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.

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).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria prior to filling up with the tap water the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.