

# ANNUAL WATER QUALITY REPORT

Reporting Year 2021

A photograph of the City of Stuart Water Treatment Facility building. The building is white with blue trim along the roofline and eaves. A large sign is mounted on the wall above the entrance, which features a glass door and is flanked by two palm trees. To the left of the building, an American flag flies on a tall pole. The foreground shows a concrete walkway and some landscaping with blue flowers and green grass.

CITY OF STUART  
WATER TREATMENT FACILITY  
1002 SE PALM BEACH ROAD

Presented By  
City of Stuart



## Meeting the Challenge

Once again, the City of Stuart is pleased to present the annual water quality report which covers all water quality analysis from January 1 to December 31, 2021. 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 of our water users.

### Source Water Assessment

In 2021 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 35 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 [dep.state.fl.us/swapp](http://dep.state.fl.us/swapp).

### Water Treatment Process

The city's water treatment facility has the capacity to treat six million gallons of water per day. Major treatment components consist of four ion exchange vessels, four air-stripping towers, three solids contact units, three one-million-gallon storage tanks, and five high-service pumps for distribution to our customers. Treatment consists of hardness and color reduction, filtration, disinfection, and fluoridation. The Stuart Water Treatment Facility provides an average of 2.8 million gallons of clean, safe drinking water every day to its consumers.

“  
When the well is dry, we  
know the worth of water.

—Benjamin Franklin  
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### Public Meetings

For additional information about the City of Stuart, please visit [cityofstuart.us](http://cityofstuart.us).

### Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those 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 <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 process deposits a thin layer of calcium carbonate on the walls of pipes to create a protective coating. In addition, we add sodium hexametaphosphate as a method of protecting the water from leaching lead and copper from pipes and fittings.

In 2019 the City conducted lead and copper sampling in accordance with U.S. EPA's Lead and Copper 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 at (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

### 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.

**QUESTIONS?** For questions about this report, or any questions about your water, please call Michael Woodside, Water Treatment Team Leader, at (772) 288-5343.

## Our Source Water

The city's water is obtained from a surficial aquifer through 24 production wells.

## Water Conservation Tips

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

## 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>.

## 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 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 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 U.S. EPA prescribes regulations that 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 that 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. During the past year, we have taken 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 often 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
<b>Barium</b> (ppm)	11/19/2021	No	0.0043	0.0042–0.0043	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
<b>Fluoride</b> (ppm)	11/19/2021	No	0.55	0.42–0.55	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at the optimum level of 0.7 ppm
<b>Nitrate [as nitrogen]</b> (ppm)	11/19/2021	No	0.18	0.13–0.18	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Nitrite [as nitrogen]</b> (ppm)	11/19/2021	No	0.025	0.025–0.029	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Sodium</b> (ppm)	11/19/2021	No	21.5	18.9–21.5	NA	160	Saltwater intrusion; leaching from soil

#### Volatile Organic Contaminants

<b>cis-1,2-Dichloroethylene</b> (ppb)	11/19/2021	No	0.52	ND–0.52	70	70	Discharge from industrial chemicals
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### 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
<b>Haloacetic Acids (five) [HAA5]–Stage 2</b> (ppb)	11/19/2021	No	31.1	18.6–37.7	NA	60	By-product of drinking water disinfection
<b>TTHM [total trihalomethanes]–Stage 2</b> (ppb)	11/19/2021	No	38.2	31.1–54.9	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
<b>Copper [tap water]</b> (ppm)	07/2019	No	0.045	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
<b>Lead [tap water]</b> (ppb)	07/2019	No	0.8	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits

## 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 that, if exceeded, triggers treatment or other requirements that 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).

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

## 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)	11/19/2021	No	45	45–45	NA	200	Natural occurrence from soil leaching
Chloride (ppm)	11/19/2021	No	30.7	26.1–30.7	NA	250	Natural occurrence from soil leaching
Iron (ppb)	11/19/2021	No	19	19–19	NA	300	Natural occurrence from soil leaching
Sulfate (ppm)	11/19/2021	No	16.9	16.8–16.9	NA	250	Natural occurrence from soil leaching
Total Dissolved Solids (ppm)	11/19/2021	No	178	176–178	NA	500	Natural occurrence from soil leaching

## 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 includes indoor and outdoor use. In addition, the city gets its water from a surficial aquifer, the shallowest type of aquifer and a source of limited supply.

Stuart adopted a Water Conservation Initiative Plan to reduce the overall per capita usage from 219 to 191 gallons per day by 2028, as required in a Consumptive Use Permit issued by the South Florida Water Management District. The city set an even more aggressive goal to reach 163 gallons per capita per day by 2028 in order to postpone the need for costly alternative water supplies. The city is proud to report that our efforts have paid off even sooner than expected. To date, the city's per capita usage is 161 gallons per day. The city will continue to take proactive measures to ensure a healthy water supply for the future.

Stuart has adopted the "Water's Worth It" campaign provided by the Water Environment Federation. Water's Worth It focuses on five essential components: Your Respect, Your Effort, Your Health, Your Future, and Our Passion. The city celebrates Water's Worth It with downtown pole banners, utility vehicle front license plates, uniform T-shirts for utility employees, and information in the monthly utility bill newsletter.

Water's Worth It, along with other water conservation public outreach programs, has resulted in a 24-percent reduction in overall local water use.

To help city residents learn more about water issues and how they can help, there are various water conservation programs within your community. 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!

To learn more, visit [cityofstuart.us](http://cityofstuart.us) or [WatersWorthIt.org](http://WatersWorthIt.org).

