

Town of Jupiter 2020 Water Quality Report

Managing Growth While Ensuring Reliability

In 1978, the Town of Jupiter purchased its water system from Tri-Southern Utilities. At the time, the system's average daily flow was only 2.5 million gallons per day and served a population of approximately 15,000 people.

Today, the utility is capable of producing 30 million gallons a day of drinking water, which is enough to accommodate more than 120,000 people. Wells that access two sources provide water that is treated and combined to deliver Jupiter's drinking water: water from the deep, Floridian aquifer and water from the surficial aquifer. The utility's service areas encompass over 45 square miles including Jupiter, Juno Beach and many unincorporated areas of Palm Beach and Martin Counties.

To ensure reliability of service, 29.5 million gallons of treated water storage is available and most of the Town's facilities have back up emergency power generation to help weather emergencies, including hurricanes.

Award Winning Service

Did you know that Jupiter residents have the best drinking water in the Southeast United States? Jupiter Utilities was awarded the Safe Drinking Water Act Excellence Award by the United States Environmental Protection Agency (EPA) in 1999, 2001, 2008 and 2010. This award proclaimed Jupiter as the top drinking water plant in the entire southeast portion of the United States.

The Florida Department of Environmental Protection awarded Jupiter Utilities the Plant Operations Excellence Award for 2008, 2009, 2010, 2013, 2016, and 2019. From 2008 through 2010, as well as in 2014, the Florida Section of the American Water Works Association named Jupiter's Facility the Best Class A Water Treatment Plant relative to Excellence in Operation and Maintenance. Most recently, Jupiter's Water Utility won the American Membrane Technology Association's 2019 and 2020 Membrane Facility of the Year Award and the Southeast Desalting Association's 2019 Outstanding Membrane Plant Award.

In fact, over the past four decades, Jupiter's Water Utility has been honored with more than 50 awards for excellence by industry associations and the agencies that regulate its operation.

To view a full list of awards, visit www.jupiter.fl.us/Water .

Jupiter's Treated Water Quality Results

The following tables list substances that may be found in your tap water, as well as the EPA's established acceptable levels of these contaminants. We are pleased to report that our drinking water meets all

federal and state requirements. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline, 800-426-4791.

The Town of Jupiter Utilities routinely monitors for contaminants in your drinking water according to federal and state laws, rules and regulations. Except where indicated otherwise, this report is based on the results of our monitoring for the period January 1 to December 31, 2020. The state allows some contaminants to be monitored less than once per year because the concentration of these elements do not change frequently. Some of our data, though representative, are more than one year old. Therefore, data obtained before January 1, 2020 presented in this report is from the most recent testing done in accordance with current laws, rules and regulations.

The Town of Jupiter Utilities has also been monitoring for unregulated contaminants (UCs) as part of a study to help the EPA determine the occurrence of UCs in drinking water and whether or not these contaminants need to be regulated. At present, no health standards (for example, maximum contaminant level) have been established for UCs. However, we are required to publish the analytical results for our UC monitoring in our annual water quality report. If you would like more information, please call the Safe Drinking Water Hotline at 800-426-4791.

In addition to the items listed in the charts below, we test for the presence of more than 100 other contaminants that do not appear in any detectable amounts. These contaminants include 14 inorganic compounds such as arsenic and mercury; 21 volatile organic compounds such as trichloroethylene; 30 pesticides and polychlorinated biphenyls (PCBs) such as chlordane; unregulated contaminants, including 47 unregulated organic contaminants; two metals; eight pesticides and one pesticide manufacturing by-product; three alcohols; and three semi-volatile organic chemicals. We also perform 128 microbiological analyses on a monthly basis for total coliform in the distribution system.

We constantly monitor the water supply for various contaminants. From January 1 to December 31, 2020, radon was detected in the finished water supply three out of four times. The maximum result was 12.1 pCi/L. There is no federal regulation for radon levels in drinking water. Radon is a radioactive gas that you can't see, taste or smell, and is a known human carcinogen. It can move up through the ground and into a home through cracks and holes in the foundation, and to a lesser extent, it can permeate indoor air when released from tap water during household activities such as showering and washing dishes. Exposure to air-transmitted radon over a long period may cause adverse health effects. If you are concerned about radon in your home, contact the EPA's Radon Hotline, 800-SOS-RADON, for more information.

Lead and Copper (Tap Water)

Contaminant and unit of measurement	Date of sampling (MO/YR)	AL exceeded Y/N	90 th percentile results	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (Tap water) (PPM)	5/18	N	0.265	0	1.3	1.3	Corrosion of household plumbing system; erosion of natural deposits; leaching from wood preservatives
Lead (Tap Water) (PPB)	5/18	N	3.6	0	0	15	Corrosion of household plumbing system; erosion of natural deposits

Stage 1 Disinfectants and Disinfection By-Products

Disinfectant or contaminant and unit of measurement	Date of sampling (MO/YR)	MCL or MRDL violation Y/N	Level Detected	Range of Results	MCLG or MRDL	MCL or MRDL	Likely Source of Contamination
Chloramines (PPM)	1/20-12/20	N	3.3 PPM	0.45 -4.7	MRDLG=4	MRDL=4.0	Water additive used to control microbes

For bromate, chloramines or chlorine, the level detected is the highest running annual average (RAA), computed quarterly, of monthly averages of all samples collected. The range of results is the range of results of all the individual samples collected during the past year.

Stage 2 Disinfectants and Disinfection By-Products

Contaminant and unit of measurement	Date of sampling (MO/YR)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Haloacetic Acids (HAAS) (PPB)	1/20-12/20	N	1.3 PPB	0-2.4	N/A	60	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) (PPB)	1/20-12/20	N	2.5 PPB	1.2-4.6	N/A	80	By-product of drinking water disinfection

Inorganic Contaminants

Contaminant and unit of measurement	Date of sampling (MO/YR)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (PPM)	2/20	N	0.00177 PPM	N/A	2	2	Discharge of drilling wastes; discharge of metal refineries; erosion of natural deposits
Fluoride (PPM)	2/20	N	0.0440 PPM	N/A	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels of 0.7
Nitrate (as Nitrogen) (PPM)	4/20	N	0.0900 PPM	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (PPM)	2/20	N	51.0 PPM	N/A	N/A	160	Salt water intrusion, leaching from soil

Results in the Level Detected column for inorganic contaminants are the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency.

Radioactive Contaminants

Contaminant and unit of measurement	Date of sampling (MO/YR)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Radium 226+228 or Combined Radium (pCi/L)	2/20	N	2.5	N/A	0	5	Erosion of natural deposits

Results in the Level Detected column for radioactive contaminants are the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency.

Unregulated Contaminants

Contaminant and unit of measurement	Date of sampling (MO/YR)	Level Detected	Range of Results	Likely Source of Contamination
Manganese (PPB)	5/19	3.0	3.0	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Haloacetic Acid (HAAS) (PPB)	5/19	1.06	0.26-2.2	By-product of drinking water disinfection
Haloacetic Acid (HAA6) (PPB)	5/19	7.07	0.92-20.1	By-product of drinking water disinfection
Haloacetic Acid (HAA9) (PPB)	5/19	7.61	1.18-20.6	By-product of drinking water disinfection

Drinking 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 be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The U.S. 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 Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

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 healthcare providers. EPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Definitions

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

- Contaminant: Any unwanted physical, chemical, biological or radiological substance or matter in water.
- Maximum Contaminant Level or 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.
- Maximum Contaminant Level Goal or 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 Residual Disinfectant Level or MRDL: 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.
- Maximum Residual Disinfectant Level Goal or 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 contaminants.
- N/A: Not applicable
- ND: Not detected and indicates that the substance was not found by laboratory analysis.
- Parts Per Billion (PPB) or Micrograms Per Liter ($\mu\text{g/l}$): One part by weight of analyte to 1 billion parts by weight of the water sample.
- Parts Per Million (PPM) or Milligrams Per Liter (mg/l): One part by weight of analyte to 1 million parts by weight of the water sample.
- Picocurie Per Liter (pCi/L): Measure of the radioactivity in water.

Lead

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. The Town of Jupiter Utilities 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 2 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.

Information on lead in drinking water, testing methods and 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.

Source Water Assessment & Protection Program (SWAPP)

In 2020, 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 nine potential sources of contamination identified for this system with low susceptibility levels.

The assessment results are available on the FDEP Source Water Assessment and Protection Program website at fldep.dep.state.fl.us/SWAPP

2020 Drop Savers Winner

1st Place - Maria Domingo - Division 5 (11th Grade)

Every year, Jupiter Utilities administers the Drop Savers Program in conjunction with National Drinking Water Week and in partnership with the Florida Section of the American Water Works Association. The program encourages school children to be more aware of water conservation. Learn more about the Drop Savers Program at www.jupiter.fl.us/Dropsavers.

Achieving Sustainability Through Innovation

Jupiter's customers expect high water quality and responsible treatment of the environment. Achieving both of these things can sometimes be a challenge. As a coastal, south Florida community, Jupiter is in a region with limited fresh water supplies, and often experiences drought conditions during the dry season. Jupiter's nationally-designated "wild and scenic" Loxahatchee River, which runs through the middle of the community, is subject to environmental harm if local freshwater supplies are depleted or damaged. If use of the shallow, fresh water aquifer in the Jupiter area is excessive, it can experience salt water intrusion from the nearby Atlantic Ocean.

To ensure a stable supply of drinking water for the area, Jupiter became one of the first large communities in the United States to employ state of the art membrane water treatment technologies. Using innovative new processes, Jupiter is able to supply the highest quality drinking water while achieving environmental sustainability of its local water resources.

Jupiter uses two membrane treatment processes to treat its water: brackish water desalination through reverse osmosis (RO) and nanofiltration (NF) treatment of the fresh water supply. The product of these two treatment processes is combined to create high-quality finished water that is distributed to the Jupiter region. These water treatment processes produce drinking water that surpasses all existing and many future quality standards. They also provide a way for Jupiter to use drought-resistant, alternative water supplies to create ultra-pure water in a way that is not harmful to the environment.

The NF process treats fresh groundwater from the shallow, surficial aquifer, which rests about 150 feet below the ground's surface. Withdrawal from the surficial aquifer is balanced through treatment of brackish groundwater from the Floridan aquifer using the RO process. The Floridan aquifer is located deep underground at 1,500 feet. The depth of this aquifer makes it an ideal, alternative water supply that is drought-resistant and not at risk of being contaminated by salt water intrusion.

Both the RO and NF processes operate by forcing pressurized, raw water through a semi-permeable membrane that separates contaminants from the water. The chemical and physical properties of the membrane, combined with the pressure, remove unwanted substances from the groundwater. Membrane treatment also provides a barrier against viruses, bacteria and many other harmful contaminants found in raw water.

Jupiter's RO facility was originally commissioned in 1990, and has been expanded three times since then. The RO plant removes salt from the Floridian Aquifer's brackish groundwater producing an ultra-pure water

that is then coupled with an ion exchange treatment unit to stabilize the final product. The RO facility can produce 13.7 million gallons per day of supply, or 75 percent of the community's total water demand in times of drought. The desalination facility ensures that the region's drinking water demands are met while preserving limited fresh water resources, and promoting long-term environmental protection.

The NF facility treats the surficial aquifer's fresh groundwater, and is similar to the RO process. The NF membrane process rejects unwanted contaminants from the raw water, producing high-quality water that meets current and future drinking water standards. Jupiter's NF process is also the first of its kind in the world, using an innovative "split-feed" design that reduces energy requirements by 30 percent compared to conventional designs. Commissioned in 2010, the NF plant is a perfect example of Jupiter's commitment to preservation of the environment.

Jupiter's commitment to the environment also extends to responsible management of the by-products generated from its membrane treatment processes. Common practice in the industry is to treat these substances as waste; however, Jupiter has found innovative solutions for beneficial recycling and re-use of its by-products. The brackish water by-product from the RO process is treated and discharged into a mixing zone in a canal before it is guided into the Loxahatchee River. The Florida Department of Environmental Protection and the United States Environmental Protection Agency both approved this approach to recycle the by-product by returning the water to the ecosystem. The by-product from the NF facility is also recycled back to the community as a source of irrigation-quality water. This has resulted in a reusable water supply of over 3 million gallons per day.

With careful planning and a watchful eye on anticipated growth, Jupiter has developed one of the most advanced water systems in the country. Jupiter's water system is a workable combination of sustainability and conservation-oriented use of water resources. The Town is committed to the continued pursuit of innovative approaches to the treatment and supply of high-quality drinking water.

Our Vision

The Town of Jupiter's Water Utility is an established industry leader committed to maintaining standards of excellence while preserving the environment.

The water system strives to provide a cost-effective, reliable potable water supply to customers, and has been recognized time and again by the industry and regulatory community for excellence in operations. The water system employs advanced drinking water treatment technologies to produce a product exceeding regulatory standards. The system has been developed to be dependable and worthy of our customers' confidence in the service provided. The Stormwater Utility strives to minimize the risk of flooding while working to enhance runoff water quality to restore, protect and enhance local water resources. Both utilities carry out their mission with the long-term goal of sustainability of our community.

Stay Informed

Jupiter is proud of its water utility and wants customers to be informed. For additional information, visit www.jupiter.fl.us/Water . You can also attend Jupiter Town Council meetings when Utilities business is on the agenda. Meetings are held on the first and third Tuesday of each month at 7 p.m. at Town Hall, 210 Military Trail. For agenda information, visit www.jupiter.fl.us/Agendas or call Town Hall at 561-746-5134.

If you have any concerns relative to our water quality, our professional lab staff would be pleased to respond at no cost to you. Contact Rebecca Wilder or Gary Schulze at 561-741-2601.

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Let us Know

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