Careful Planning and Strategy Protect Our Most Precious Natural Resource.

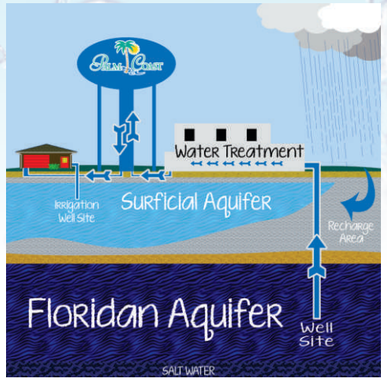
Have you ever wondered where our water comes from? And how rainfall affects our water supply in Palm Coast?

The City of Palm Coast has more than 60 raw water production wells that extract fresh groundwater from two sources—the Confined Surficial Aquifer (northern Palm Coast) and the deeper Upper Floridan Aquifer (southern Palm Coast). The Palm Coast Utility Department works closely with State agencies, including the St. Johns River Water Management District, to determine the amount of water available for current use while also ensuring our water supply is protected for the future.

Because we don't have large rivers of water flowing underground, Palm Coast's water supply is locally recharged. That means we need to retain as much of our rainwater as possible so it can soak into the ground to resupply our aquifers. Our drainage system of swales, ditches and canals is designed to capture rainwater and allow it to seep back into the ground. Wetlands also play an important role in recharging aquifers.

Spraying highly treated effluent—called reclaimed water—on our grass also helps with aquifer recharge. The City recently completed a major reclaimed water project along U.S. 1 south of Matanzas Woods Parkway. We have eight water wells in that area, and reclaimed water from our wastewater treatment plants is being used there to recharge the aquifer.

Even with Palm Coast's 60+ wells and strategy to recharge the aquifer, water supply in Florida is greatly affected by the weather. In 2017 we saw the extremes: severe drought in the spring, lots of rain in the summer, then Hurricane Irma and several Nor'easters with excessive rain in the fall. Then back to the dry season this spring.



Our normal rainfall amount is about 55 inches per year. In 2017 we had 84.37 inches of rain with only 12.32 of those inches coming in the first five months. The aquifer was becoming dangerously low during the drought, but then was replenished with the heavy rains in the summer and fall. Flooded yards were an inconvenience, but brought welcome recharging to the state's aquifers.

The bottom line for us is supplying high-quality drinking water! The Palm Coast Utility Department has three water treatment plants and carefully manages this precious natural resource to make sure there will be enough for future generations and projected growth. Last year, five new wells were added to Palm Coast's southern wellfield. An Aquifer Performance Test and the first round of modeling were completed for long-range water supply planning that could include treating brackish water to make it usable for drinking water. The City is now finalizing a Water Supply Facilities Work Plan for planning through 2035. The City is also investigating whether surface water in the freshwater canals could be used as a source for drinking water. See our tips below to learn how you can help protect our water supply.

Water supplied to Palm Coast customers in 2017 = 2,835,754,000 gallons
Annual average day = 7.769 million gallons
Average water use per minute = 5,395 gallons (91 gallons per day per person)

Make Every Drop Count!

Water is a precious resource, and we all need to conserve where we can. As a bonus, using less water means you save on your Utility bill! Here are some valuable tips:

- Check for leaks. A running toilet can waste up to 200 gallons of water per day. At 1 drip per second, a faucet can leak 3,000 gallons per year. To check for leaks, read your meter before and after a 1-hour period when no water is being used. (Remember to wait for the ice maker to refill and for regeneration of water softeners, if used.) If readings are different after the hour, you have a leak. Also monitor your bill for unusually high use.
- Turn off the water while you brush your teeth, wash your face, shave, wash dishes or clean the house. The average faucet flows at a rate of 2 gallons per minute.

- Take a shower instead of a bath—baths use up to 70 gallons of water, whereas a 5-minute shower uses only 10-25 gallons.
- For washing machines with variable settings, select the minimum amount required per load. Otherwise, wash only full loads.
- Select native-Florida trees and shrubs that need less watering when landscaping.
- Install low-flow toilets and showerheads to dramatically reduce your indoor water consumption without reduced performance.
- Run the dishwasher instead of washing by hand. It uses less hot water and could save you $40 a year.

Online Utility Billing—Let's keep Palm Coast green with online paperless billing! Save paper, stamps, envelopes and time by managing your Utility bill online. You can view present and past bills, make payments each month or pay monthly via automatic deduction from a credit card, checking or savings account. Go to palmcoastgov.com for details.

Straight from the (Water) Source

2017 City of Palm Coast Water Quality Report

What Can We Expect to Find in Our Drinking Water?

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:

A. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

B. 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.

C. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.

D. 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.

E. 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 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, 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 1-800-426-4791.**

How This Report Shows Our Water Quality Results and What They Mean

This report shows our water quality results and what they mean to you. It also provides important information about your water and how it relates to your health. The information in this report is based primarily on 2017 facts and figures. However, the U.S. Environmental Protection Agency (EPA) does not require us to perform all tests every year. When necessary, some data was obtained from prior years. As directed by the agencies that regulate our industry, only values from these tests that exceeded specified criteria are included. We will notify you immediately if there is any reason for concern.

The City of Palm Coast Utility Department operates the water treatment and distribution system serving Palm Coast. Our water source is groundwater drawn through sixty-four wells from the Confined Surficial and the Floridan Aquifers and is treated through a complex multi-step water treatment process that includes lime softening, filtration, membrane softening, forced draft aeration, corrosion control and chloramination for disinfection purposes at three different facilities. The Florida Department of Environmental Protection (DEP) has completed a Source Water Assessment for the Palm Coast watershed. The State has determined that sixteen of our sixty-four wells have a low to moderate susceptibility to contamination based on their proximity to the fourteen potential sources of contamination that were last evaluated in 2017. For additional information, please visit the DEP website at **www.DEP.state.fl.us/swapp**. **(The DEP considered one of the Palm Coast active wells as inactive and the number of possible contamination sites is fourteen, not thirteen as indicated during the 2017 evaluation.)**

The following information will assist you in making adjustments to your water softener, washer or dishwasher. The average hardness in the Palm Coast water is:

Total Hardness: 100 parts per million = 5.8 grains/gal.
Calcium Hardness: 80 parts per million = 4.7 grains/gal.

If you have any questions about this report or concerns about your water utility, please contact your **City of Palm Coast Utility Representative at 386-986-2360**. You may also visit the **City of Palm Coast website at www.palmcoastgov.com** or call the **EPA Safe Drinking Water Hotline at 1-800-426-4791**. We want our valued customers to be informed about their water utility. If you would like to learn more, please call us for information about the next opportunity for public participation in decisions about your drinking water.

How Do I Read This?

It's easy. The table shows the results of our water quality analyses. The column marked "Level Detected" shows the highest results from the last time tests were performed. "Likely Sources" shows where this substance usually originates. Descriptions below explain other important details. In this table you may find unfamiliar terms and abbreviations. To help you better understand these terms, we've provided the following definitions:

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.*

ND: *Means not detected and indicates that the substance was not found by laboratory analysis.*

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.*

Parts per billion (ppb) or Micrograms per liter (ug/l): *One part by weight of analyte to 1 billion parts by weight of the water sample.*

Picocurie per liter (pCi/L): *Measure of the radioactivity in water.*

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

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: *Means not applicable.*

2017 Annual Drinking Water Quality Test Results

The City of Palm Coast Utility Department 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 of January 1 to December 31, 2017 for the **City of Palm Coast – PWS ID # 2180863**. The Environmental Protection Agency (EPA) requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table below are the only contaminants detected in your drinking water.

Inorganic Contaminants

Results in the Level Detected column for inorganic contaminants are the highest detected level at any sampling point. Range of Results is the range of results (lowest to highest) at the individual sampling sites.

Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Arsenic (ppb)	05/17	N	0.15	ND – 0.15	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	05/17	N	0.0071	0.0029 – 0.0071	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (ppb)	05/17	N	0.44	ND – 0.44	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Sodium (ppm)	05/17	N	82	18 – 82	N/A	160	Salt water intrusion, leaching from soil

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 your drinking water meets health standards. During the 2017 monitoring period, we were required to monitor or test for synthetic organic contaminants including pesticides and herbicides in two separate quarters separated by 60 days. While the first set of results showed no detection, we failed to monitor and test for a second set and therefore cannot be sure of the quality of your drinking water for these contaminants during the period of July 2017 to December 2017. Quarterly sampling resumed in January and will continue through 2018.

Stage 1 Disinfectant and Disinfection By-Product

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.

Disinfectant or Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL or MRDL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Chloramines (ppm)	01/17 – 12/17	N	3.6	0.5 – 5.1	MRDLG = 4.0	MRDL = 4.0	Water additive used to control microbes
Chlorine (ppm)	02/17-03/17, 06/17-07/17, 09/17-10/17	N	2.8	0.6 – 5.0	MRDLG = 4.0	MRDL = 4.0	Water additive used to control microbes

Periodically throughout the year the distribution system is maintained by conversion of Chloramine to Free Chlorine disinfection for additional microbiological control

Stage 2 Disinfectant and Disinfection By-Product

If during 2017, the system had only annual or triennial results and these results were at or below the MCL, report the highest result as the level detected and the range of individual sample results as the range of results.

Disinfectant or Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL or MRDL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Haloacetic Acids (five) (HAA5) (ppb)	02/17, 5/17	N	18.16	11.10 – 18.16	N/A	MCL = 60	By-product of drinking water disinfection
TTHM [Total trihalomethanes] (ppb)	02/17, 5/17	N	18.50	17.22 – 18.50	N/A	MCL = 80	By-product of drinking water disinfection

Lead and Copper (Tap Water)

Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	AL Exceeded Y/N	90th Percentile Result	No. of Sampling Sites Exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	06/16	N	0.08	0 of 31	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	06/16	N	1.6	0 of 31	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Copper (tap water) (ppm)	06/17	N	0.285	0 of 12	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	06/17	N	12.8	1 of 12	0	15	Corrosion of household plumbing systems; erosion of natural deposits

Following the addition of a new treatment chemical at Water Treatment Plant #2 in 2017, 12 representative lead and copper samples were collected in the area supplied by this facility. The one sample that exceeded the Action Level for lead was resampled and resulted in a 0.45 ppb which is well below the Action Level of 15.0 ppb.

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 City of Palm Coast 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 or at **http://www.epa.gov/safewater/lead.**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer under-going 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 and other microbiological contaminants are available from the SAFE DRINKING WATER HOTLINE (1-800-426-4791).