Dear Valued Customer,

The City of West Palm Beach is again pleased to present the Annual Water Quality Report. The most current report for the year 2021 has important information about the quality of your drinking water.

The report, also known as the Consumer Confidence Report (CCR), includes information on source water, detected contaminants, treatment processes and what it means. Annual CCRs are required by the Environmental Protection Agency of every U.S. community water supplier. More CCR information for consumers can be obtained from the EPA at https://www.epa.gov/ccr, or by calling the Safe Drinking Water Hotline at (800) 426-4791 TTY: 202-272-0165

Last year was a challenging year with an "abnormally dry" and tardy wet season leading to a cyanotoxin event in May. I formed a world-renowned Expert Water Panel to help the city develop plans and programs to minimize the risk of a similar incident occurring in the future.

The City of West Palm Beach is committed to providing you with a clean, safe, and stable water supply. Our water treatment professionals continuously monitor and adjust the treatment systems to ensure high quality drinking water to our customers, and I invite you to carefully read the next few pages to Learn more about our source to tap water treatment process.

For public participation, bi-weekly City Commission meetings are held on Mondays beginning at 5:00 pm at 401 Clematis St. West Palm Beach.

If you have any questions or to contact City Hall, please dial (561) 822-2222 (TTY: 800-955-8771).

Yours in service,

Keith A. James

Mayor, City of West Palm Beach

WPB WEST PALM BEACH
Public Utilities

Our Beginning.....to where we are at now

The City of West Palm Beach's water system dates to over a century ago in 1894. The system was owned by Henry Flagler's East Coast Hotel Company. The City of West Palm Beach approved a thirty-year franchise for water service and the Florida East Coast Hotel Company built and operated a water plant at Clear Lake in 1901. In 1909 the water plant became part of Flagler's West Palm Beach Company. Gradually the citizenship of West Palm Beach grew in number and demanded not only more water, but water of a higher purity. In 1927 a new filtration plant was complete, expanding the capacity from 6 million gallons per day to 20 million gallons per day.

Later in 1955, the City of West Palm Beach purchased the Water Treatment Plant from Henry Flagler's family, and continued to invest in further development until 1988, when the Plant capacity topped off at 47 million gallons per day. In February of 2019, the Water Treatment Plant started up the new Ultra-Violet (UV) treatment system that established an additional barrier to ensure the production of safe drinking water. The UV System is designed to control bacteriological contaminants typically found in surface and ground water supplies. Designed to treat up to 50 million gallons of water every day, the UV System became a part of the overall water treatment process that includes conventional filtration and chemical disinfection. Housed within massive pipes inside the water treatment plant, the UV system--the largest in the State of Florida-- provides reliable and cost-effective 100% redundancy in the disinfection process. In 2021, the City completed the installation of a Powdered Activated Carbon (PAC) Treatment unit and began using it to further remove harmful contaminants, such as algal toxins.

Ultra-Violet (UV) Treatment System

Today the facility is located on a 55-acre site at its original location on Clear Lake.

Where does our water come from?

The City of West Palm Beach gets its water from rainfall captured and stored in a part of the Everglades Ecosystem known as the Grassy Waters Preserve. Henry Flagler's foresight in early 1890 led him to purchase the property from private landowners, the Florida East Coast Canal and Transportation Company, and the Boston and Florida Atlantic Coast Land Company. In exchange, Henry provided the means for the laying of many miles of railroad track. He was also now able to utilize water that flowed from Grassy Waters to supplement supply water for processing at his water plant.

The City also purchased the Grassy Waters property, along with the Water Treatment Plant in 1955, and in 1964 it was given special protection because of State legislation limiting its use to water consumption. This system feeds and sustains Lake Mangonia and Clear Lake via the M-Canal which was constructed in 1930 and runs through the heart of Grassy Waters. Lake Mangonia and Clear Lake cover an area of approximately 1000 acres and ensures adequate and bountiful supply to the Water Plant. On occasion, the City has been able to supplement its water supply from Lake Okeechobee via the L-8 canal located at the east end of the M-Canal. The City has also designed and implemented several innovative and cost-effective projects to increase the City's water conservation efforts and provide alternative sources of water in times of drought. These efforts include the Renaissance Storm Water Project, Aquifer Storage and Recovery, the C-17 canal pump station, and wellfield management.

The City also acquired approximately 35.15 million gallons of finished drinking water from the Palm Beach County Public Water System (#4504393) during 2021 through interconnections.

Grassy Waters Preserve

Clear Lake

Lake Mangonia

Protecting our most valuable resource

Watershed protection is vital to maintaining clean, safe and affordable water. If we all play an active role daily, we can ensure our source water will be the best raw material for producing our finished water product. The less chemicals the plant needs to treat the water to make it clean and safer, the more affordable the water becomes. If we are conservative with water usage during the dry season (December to May), we can ensure consistent water usage without water conservation orders or mandates.

Here are some simple things we can do to help.

Outdoors

- Do not over water your lawn or add excess fertilizer, especially if you live near Lake Mangonia or Clear Lake.
- Water lawns in the early morning when temperatures are cooler. Ensure sprinkler systems are in good working order. Replace washers and check that hoses don't leak
- Cut grass more often at a higher lawn mower blade setting to maintain moisture and provide shade to grass.
- Follow Xeriscape techniques by using mulch around garden areas and use soil amendments like compost. Select plants that require low water for maintenance and water efficiently.
- Swimming pool owners should consider using newer water-saving pool filters.
- Go to a commercial car wash that recycles water.
- Use a blower/broom to remove debris form sidewalks instead of water from a hose.

Indoors

- Take shorter showers. Shut off the water while lathering with soap or shampoo.
- Hand wash dishes by using two water basins, one to wash and one to rinse dishes. Only use automatic dishwashers when they are full of dishes.
- Do not thaw meat by running water, but instead thaw in the refrigerator or use the microwave defrost setting.
- Do not leave the water running while brushing your teeth, washing, or shaving.
- While waiting for water to become hot, capture the cooler water for plant watering or for microwave/stove heating.
- Check your home for water leaks. Areas to inspect are toilets, dripping faucets/aerators. Also, water meter readings from your utility bill can signal a leak.
- Select a water faucet or shower head with flow restrictors.

For questions or copies of previous year's reports, please contact the Laboratory Manager at (561) 822-2269.
To contact the Department of Public Utilities, please dial (561) 822-1060.
To contact the City of West Palm Beach, please dial (561) 822-1200 (TTY: 800-955-8771).

We welcome your feedback so we can continue to communicate what matters most to you.

WPB WEST PALM BEACH

2021

ANNUAL DRINKING WATER QUALITY REPORT

City of West Palm Beach

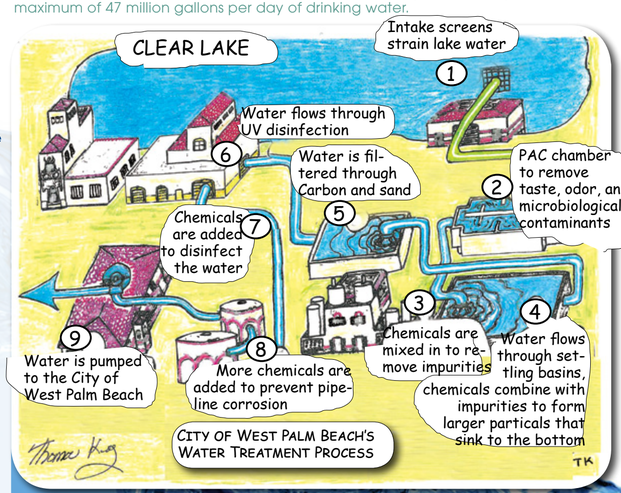
2021 Informe anual de calidad del agua potable
(561) 822-2222 (TTY: 800 955-8771)

Visite nuestro sitio web en:
wpb.org/government/public-utilities/water-quality-reports
Public Water System # 4501559
Published June 2022

WPB WEST PALM BEACH
Public Utilities

How we turn our Source Water into Potable Water

Water from Clear Lake is processed by the Water Treatment Plant through a PAC chamber, conventional filtration, lime softening, and then an ultraviolet (UV) and chlorination disinfection process that produces a maximum of 47 million gallons per day of drinking water.



Source Water Assessment

In 2021, the Florida Department of Environmental Protection (FDEP) performed a Source Water Assessment of our system. The purpose of the assessment was to provide information on any potential sources of contamination in the vicinity of our wells and source water intake. Source water investigation by the FDEP indicated no potential sources of contamination within the assessment area for our system. As a result, the water system intake is considered to have a concern level of "low". The assessment results are available on the FDEP Source Water Assessment and Program Protection Website at:

www.dep.state.fl.us/swapp.

Search by PWS # 4501559

Period covered by Report

The City of West Palm Beach 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, 2021. The EPA requires monitoring of over 80 contaminants. The contaminants listed in the tables below are the only contaminants detected in your drinking water. In May 2021, the City detected cyanotoxins in the drinking water and chlorine levels at the treatment plant were temporarily boosted to effectively remove the toxins. That change in water treatment resulted in levels of disinfection byproduct in the water distribution system in early June that were above the regulatory threshold.

Lead-specific Information

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 West Palm Beach 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 two 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.

In the Tables Contained in this Report, You May Find Unfamiliar Terms and Abbreviations. To help you better understand these terms, we have provided the following definitions:

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

I- Between laboratory detection limit and lab practical quantitation limit.

LRAA- Locational Running Annual Average: the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

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.

N/A- Not Applicable

ND- Not Detected: indicates that the substance was not found by laboratory analysis.

ppb- parts per billion or micrograms per liter (µg/L): One part by weight of analyte to 1 billion parts by weight of the water sample.

ppm- parts per million or milligrams per liter (mg/L): One part by weight of analyte to 1 million parts by weight of the water sample.

RDL- Regulatory Detection Limit: The lowest level of contaminant that is required to be reported.

TT- Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

City of West Palm Beach • CONSUMER CONFIDENCE REPORT 2021 DATA

	Units	Dates of Sampling (mo/yr)	MCL Violation	Level Detected	Reported Ranges	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants	**Units**	**Dates of Sampling (mo/yr)**	**MCL Violation**	**Level Detected**	**Reported Ranges**	**MCLG**	**MCL**	**Likely Source of Contamination**
Antimony	ppb	1/21	N	0.22	ND - 0.22 (I)	6 ppb	6 ppb	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Barium	ppm	1/21	N	0.0059	0.0058 - 0.0059	2 ppm	2 ppm	Discharge of drilling wastes; discharge from metal refinaries; erosion of natural deposits
Fluoride	ppm	1/21	N	0.59	0.59	4 ppm	4.0 ppm	Erosion of natural deposits; discharge from fertilizer and aluminium factories. Water additive which promotes strong teeth when at the optimum level of 0.7 ppm
Nitrate, as Nitrogen	ppm	1/21	N	0.11	0.11	10 ppm	10 ppm	Run-off from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium	ppm	1/21	N	26.8	26.8	NA	160 ppm	Salt water intrusion, leaching from soil.
Radioactive Contaminants	**Units**	**Dates of Sampling (mo/yr)**	**MCL Violation**	**Level Detected**	**Range of Results**	**MRDLG**	**MRDL**	**Likely Source of Contamination**
Radium 226	pCi/L	1/21	N	0.505 +/- 0.404	ND - 0.505 +/- 0.404	0 pCi/L	5 pCi/L	Erosion of natural deposits
Stage 1 Disinfectants and Disinfection By-Products	**Units**	**Dates of Sampling (mo/yr)**	**MCL Violation**	**Level Detected**	**Range of Results**	**MRDLG**	**MRDL**	**Likely Source of Contamination**
Total Chlorine Residual (chloramines)	ppm	1/21 to 12/21	N	3.2 *	0.5 - 4.2	4 ppm	4.0 ppm	Water additives used to control microbes
Chlorine (free)	ppm	7/21	N	1.8 *	0.4 - 3.4	4 ppm	4.0 ppm	Water additives used to control microbes
Contaminant and Unit of Measurement	**Units**	**Dates of sampling (mo/yr)**	**TT Violation Y/N**	**Lowest Running Annual Average, Computed Quarterly, of Monthly**	**Range of Monthly Removal Ratios**	**MCLG**	**MCL**	**Likely Source of Contamination**
Total Organic Carbon	ratio	1/21 to 12/21	N	1.1	1.1 - 1.3	NA	TT	Naturally present in the environment
Stage 2 Disinfectants and Disinfection By-Products	**Units**	**Dates of Sampling (mo/yr)**	**MCL Violation**	**Level Detected**	**Range of Results**	**MRDLG**	**MRDL**	**Likely Source of Contamination**
TTHM (Total Trihalomethanes) System !	ppb	3/21, 06/21, 08/21 and 11/21	Y	112 **	18.1 - 362 **	NA	80 ppb	By-Product of Drinking water disinfection
TTHM (Total Trihalomethanes) 101 East Inlet Dr., Palm Beach	ppb	3/21, 06/21, 08/21 and 11/21	Y	81.8	21.8 - 240	NA	80 ppb	By-Product of Drinking water disinfection
TTHM (Total Trihalomethanes) Baywinds Harbor Ct. West Palm Beach	ppb	3/21, 06/21, 08/21 and 11/21	Y	107	22.0 - 338	NA	80 ppb	By-Product of Drinking water disinfection
TTHM (Total Trihalomethanes) 3230 S. Ocean Blvd, Palm Beach	ppb	3/21, 06/21, 08/21 and 11/21	Y	89.2	21.4 - 271	NA	80 ppb	By-Product of Drinking water disinfection
TTHM (Total Trihalomethanes) Southern Blvd @ Dreher Park entrance, West Palm Beach	ppb	3/21, 06/21, 08/21 and 11/21	Y	112	23.1 - 362	NA	80 ppb	By-Product of Drinking water disinfection
TTHM (Total Trihalomethanes) 880 Valley Forge Rd, West Palm Beach	ppb	3/21, 06/21, 08/21 and 11/21	Y	89.1	22.7 - 320	NA	80 ppb	By-Product of Drinking water disinfection
TTHM (Total Trihalomethanes) Ibis Reserve back gate, West Palm Beach	ppb	3/21, 06/21, 08/21 and 11/21	Y	102	18.1 - 199	NA	80 ppb	By-Product of Drinking water disinfection
Haloacetic Acids (HAA5)	ppb	3/21, 06/21, 08/21 and 11/21	N	41.0 **	9.6 - 105 **	NA	60 ppb	By-Product of Drinking water disinfection
Lead & Copper (Tap Water)	**Units**	**Dates of Sampling (mo/yr)**	**AL Exceeded**	**90th Percentile Result**	**NUMBER OF SITES EXCEEDING AL**	**MCLG**	**ACTION LEVEL (AL)**	**Likely Source of Contamination**
COPPER at the Tap	ppm	10/21	N	0.14	0 out of 104	1.3 ppm	1.3 ppm	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
LEAD at the Tap	ppb	10/21	N	2.6	1 out of 104	0 ppb	15 ppb	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives

Notes:

N.B. Results are based on two POE sampling points

*The results in the column indicating "Highest Level Detected" for chloramines is " the highest running annual average (RAA), computed quarterly, of monthly averages of all samples collected". The range of results are the highest and lowest result from the individual sampling sites. Compliance with MCL standards are based on monthly averages.

**The results in the column indicating " Level Detected" for total trihalomethanes and HAA5 are the highest Locational Running Annual Average (LRAA) . The range of results are the highest and lowest result from the individual sampling sites. Compliance with MCL standards are based on quarterly averages.

! TTHM (Total Trihalomethanes) Six sample sites collected during June 2021 closed the year with a Locational Running Annual Average (LRAA) greater than 80 ppb which exceeded the MCL for the system. Elevated results were due to a treatment response to cyanotoxins levels, and public notices were issued to customers. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Lead and Copper results, though reported outside of the reporting period to the Department of Health, were sampled and analyzed within the compliance period. (ND) = Not Detected

Qualifier Code

(I) = Between laboratory detection limit and lab pratical quantitation limit.

How do contaminants get into 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:

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 number 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 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 Information Hotline at (800) 426-4791.**

Vulnerability to Contaminants

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people - such as someone with cancer undergoing chemotherapy, those who have undergone organ transplant, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA and Centers for Disease Control (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 (800-426-4791) or http://water.epa.gov/drink/hotline.

Important Information about Your Drinking Water Total Trihalomethane (TTHM) and Cylindrospermopsin Violation

TTHM

As part of an EPA requirement for the monitoring of disinfection byproducts (DBPR), the city collects samples of finished water quarterly and reports the result averages to the local office of the Florida Department of Health. As a result of samples collected in June 2021, (see high range TTHM result on table on page 6), the rolling annual average exceeded the maximum contaminant level (MCL) of 80 parts per billion (ppb) for six sample points in the City's distribution system. This exceedance resulted in a violation of the drinking water standard for the 2nd, 3rd, and 4th quarters of 2021. The violation was directly attributed to a treatment response of free chlorination for algal toxins present in the drinking water. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Algal Toxins

Samples collected on May 17, 24, 25, and 26, 2021 showed cylindrospermopsin in the drinking water at levels which exceeded the U.S. Environmental Protection Agency's cylindrospermopsin national drinking water Health Advisory for vulnerable populations of 0.70 micrograms per liter (µg/L). The Health Advisory level for the general adult population is 3.0 ug/L. The levels ranged from 0.965 to 1.543 µg/L) during the period. Cylindrospermopsin, is an algal toxin produced by cyanobacteria (formerly known as blue-green algae). Exposure to drinking water contaminated with elevated concentrations of cylindrospermopsin could cause liver and kidney damage. The city was noticed by the Department of Health of the need to inform the public and the Department of Health of the cylindrospermopsin Health Advisory Level exceedances.

The city took immediate actions to isolate and treat the harmful algal bloom in the source water and to remove and destroy cyanotoxins at the water treatment plant. We continue a robust water quality monitoring program and recently purchased a cyanotoxin screening tool that will help provide timely information on water treatment plant performance.

The presence of the algal toxin is the result of environmental conditions. Public Utilities could not have prevented its development. When the blue-green algae toxin was detected, the City of West Palm Beach Department of Public Utilities took steps to mitigate the impacts and began Powdered Activated Carbon Treatment and, later, temporary free chorine water disinfection. The City also introduced groundwater from the Eastern Wellfield and Western Wellfield to help reduce levels of algae in the system.

As of December 2021 testing indicated lowered TTHM levels, and the absence of cylindrospermopsin in our drinking water. Testing in May 2022 returned the LRAA for TTHM to levels below the MCL.