

## Dear Valued Customers,



In 2017, Broward County Water and Wastewater Services (WWS) celebrated its 55th year of service to our customers. Since 1962, WWS has been responsible for the planning, construction, operations, maintenance, customer service, water management, and financial management of the County's water and sewer utility. The utility now supplies potable water to over 50,000 retail customers, including a population of approximately 180,000. Once again, we are pleased to report that the drinking water provided to our customers in 2017 met or exceeded all standards of the federal Safe Drinking Water Act.

Last year, WWS made significant strides in its ongoing efforts to provide the best quality service to its customers.

**Construction has continued for WWS' Local Utility Program.** The Local Utility Program began in 2009 with the Utility Analysis Zone (UAZ) projects. UAZ projects focus on water and sanitary sewer improvements which are currently estimated at \$275 million over the next 20 years.

WWS received the following prestigious professional awards:

"2017 Earle B. Phelps Award," awarded by Florida Water Environment Association for Outstanding Wastewater Treatment Plant Performance. This is the second year in a row that WWS has won the prestigious award.

"2017 Outstanding Water Distribution System (Division 6)," awarded by Florida Section/American Water Works Association. WWS also won the Outstanding Distribution System award in 2014 and 2016.

"Resilient Utility of the Year (Tier 4)," named at the Resilient Utility Coalition Summit. Notable WWS achievements include the integration of resilience elements across a \$125 million capital improvement program for the North Regional Wastewater Treatment Facility and a comprehensive vulnerability/asset risk assessment.

On behalf of Water and Wastewater Services' 400+ employees, we thank you for being our customer and an important partner in our continuing effort to remain one of the best utilities in the nation.

Alan W. Garcia, P.E., Director  
Broward County Water and Wastewater Services

## WATER AND WASTEWATER SERVICES:

2555 West Copans Road,  
Pompano Beach, FL 33069  
Broward.org/Waterservices  
Phone: 954-831-3250

## EMPLOYMENT INFORMATION:

Phone: 954-357-JOBS  
Broward.org/Careers

## ADDITIONAL INFORMATION:

Environmental Protection Agency  
Safe Drinking Water Hotline  
Phone: 800-426-4791  
epa.gov/safewater

National Centers for Disease Control  
Phone: 800-232-4636  
cdc.gov

American Water Works Association  
Phone: 800-926-7337  
awwa.org

South Florida Water Management District  
Phone: 800-662-8876  
sfwmd.gov

## FOR ADDITIONAL COPIES OF THIS REPORT, CONTACT:

Water and Wastewater Operations Division  
Phone: 954-831-0810  
Fax: 954-831-0842

## TO VIEW THE 2017 WATER QUALITY REPORT ONLINE, GO TO:

[Broward.org/WaterServices/WaterQualityReport](http://Broward.org/WaterServices/WaterQualityReport)



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Public Hearings: 2nd and 4th Tuesdays at 2PM  
Broward County Governmental Center  
115 S. Andrews Avenue, Room 422  
Fort Lauderdale, FL 33301

500 copies of this public document were promulgated at a gross cost of \$275.00 and \$0.550 per copy to provide public information about Broward County's drinking water quality during 2017.

If you pay the water bill for a condominium or rental property (residential or commercial), please advise your residents/tenants that this report is available.

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Water and Wastewater Services

# 2017 Water Quality Report

Este reporte se publica anualmente para brindar información a nuestra clientela sobre la calidad del agua potable. Si desea atención en español, puede comunicarse con el departamento de Servicio al Cliente al 954-831-3250.

## What does the utility do to assure my drinking water complies with federal and state standards?

Before water ever reaches your tap, it goes through a multi-step treatment process.

### Where does my water come from?

Your tap water originates from the Biscayne Aquifer, which lies 50-200 feet underground. The Aquifer is comprised primarily of limestone and sand.

### Biscayne Aquifer

As a groundwater source, the Aquifer is naturally protected from undesirable microbial pathogens that are common in surface water supplies. This is due to the natural filtration that occurs in the Aquifer and the amount of time the water resides in the ground prior to being withdrawn. Water provided by Water and Wastewater Services (WWS) districts 1A and 2A comes from wells, while water provided by

WWS districts 3A and 3BC is supplied by the City of Hollywood.

### Source Water Assessment

In 2017 the Florida Department of Environmental Protection performed a Source Water Assessment on our systems. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are three (3) potential sources of contamination identified for the 1A system with a low susceptibility level, and nine (9) sources of contamination identified for the 2A system with a low susceptibility level. In 2017, FDEP performed a Source Water Assessment for the City of Hollywood which provides water for our 3A and 3B/C systems; there are thirteen (13) potential sources of contamination identified

for the 3A/3BC systems with a low to moderate susceptibility level. The assessment results are available on the FDEP Source Water Assessment Protection Program website at [dep.state.fl.us/swapp](http://dep.state.fl.us/swapp) or they can be obtained from the City of Hollywood Water Quality Division by calling (954) 921-3414.

### Softening

At the water treatment plant, the ground water is initially treated with lime and ferric chloride to reduce hardness and color. During this step of the treatment process, chemicals are added so that most of the hardness and particles in the water can be easily removed.

### Fluoridation

Following softening, fluoride is added for enhanced protection against tooth decay.

### Filtration

Filtration is used following softening to further treat the softened water by removing the remaining particulate matter from the treated water.

### Disinfection

Disinfection, which is the final treatment step, is accomplished by the addition of chlorine and ammonia, otherwise known as chloramines. A small amount (residual levels) of chloramines disinfectant is maintained throughout the distribution system in order to control microbial regrowth.

### Dewatering

Solids that settle out during the treatment process

are collected and pumped to a settling basin, where they are thickened.

The thickened solids are pumped to a vacuum filter, which removes excess water.

### Monitoring

Broward County Water and Wastewater (WWS) Services 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. Data obtained before January 1, 2017, and presented in this report are from the most recent testing done in accordance with the laws, rules, and regulations.

More than 15,000 tests are performed each year to comply with national standards in WWS' NELAP\* certified drinking water laboratory.

WWS also employs certified water treatment operators who conduct more than 317,000 process control tests annually. These tests ensure that the water treated and delivered to Broward County customers meets or exceeds all federal requirements for safe drinking water under the Safe Drinking Water Act.

The following provided table lists the parameters set by the Safe Drinking Water Act and the levels detected in potable water for Districts 1A, 2A, 3A and 3B/C.

\* National Environmental Laboratory Accreditation Program (NELAP Institute/TNI)

# WHAT IS IN MY WATER? - 2017 TEST RESULTS (3A and 3BC water supplied by the City of Hollywood)

MICROBIOLOGICAL CONTAMINANTS									
Contaminant	Dates of Sampling (mo/yr)	TT Violation Y/N	1A Result	2A Result	3A Result	3BC Result	MCLG	MCL	Likely Source of Contamination
Total Coliform Analytical Results	01/17 - 12/17	N	NA	NA	NA	NA	NA	TT	Naturally present in the environment
Contaminant	Dates of Sampling (mo/yr)	MCL Violation Y/N	Total # of Positive samples for the year	Total # of Positive samples for the year	Total # of Positive samples for the year	Total # of Positive samples for the year	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.									
INORGANIC CONTAMINANTS									
Contaminant	Dates of Sampling (mo/yr)	MCL Violation Y/N	1A	2A	3A	3BC	MCLG	MCL	Likely Source of Contamination
Antimony (ppb)	5/17-8/17	N	0.0265	0.0209	ND	ND	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	5/17-8/17	N	0.506	0.305	ND	ND	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	5/17-8/17	N	0.006	0.006	0.036	0.036	2	2	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Chromium (ppb)	5/17-8/17	N	3	ND	ND	ND	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	5/17-8/17	N	0.64	0.623	0.57	0.57	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
Lead (Point of Entry) (ppb)	5/17-8/17	N	ND	ND	0.83	0.83	0	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Nitrate (ppm)	5/17-8/17	N	0.284	0.108	0.046	0.046	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	5/17-8/17	N	41.5	29.1	30.8	30.8	NA	160	Salt water intrusion, leaching from soil
DISINFECTANTS and DISINFECTION BY-PRODUCTS									
Contaminant	Dates of Sampling (mo/yr)	MCL Violation Y/N	1A (range)	2A (range)	3A (range)	3BC (range)	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Chlorine (ppm)	01/17 - 12/17	N	3.4 (0.1-6.6)	4.0 (0.8-5.1)	3.4 (0.6-4.7)	3.4 (0.4-5.4)	4.0	4.0	Water additive used to control microbes
HAA5-haloacetic acids (ppb)		N	44 (11.9-50)	14.8 (12.6-14.8)	5.86 (4.22-5.86)	7.27 (2.81-7.27)	NA	60	By-product of drinking water disinfection
TTHM-total trihalomethanes(ppb)		N	48 (34.4-54.7)	16.8 (15.1-16.8)	3.06 (2.71-3.06)	3.64 (2.04-3.64)	NA	80	By-product of drinking water disinfection
LEAD and COPPER (Tap Water)									
Contaminant (90th Percentile Value)	Dates of Sampling (mo/yr)	AL Violation Y/N	1A	2A	3A	3BC	MCLG	Action Level (AL)	Likely Source of Contamination
Copper (Tap Water) (ppm)	7/16	N	0.1300	0.0480	0.0780	0.0360	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
# of Sites exceeding the AL			0	0	0	0			
Lead (Tap Water) (ppb)		N	5.11	5.24	2.44	1.61	0	15	Corrosion of household plumbing systems
# of Sites exceeding the AL			0	0	0	0			

## Definitions for the Tables

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

**Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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

**Maximum Contaminant Level or MCL:** This is the highest level of contaminant that is allowed in water. MCLs are

set as close to the MCLGs as feasible using the best available treatment technology.

**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 the 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.

**Parts per billion (ppb) or Micrograms per liter (µg/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.

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

**NA:** Not applicable.

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

## 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, aquifers 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 activities.
- 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 Food and Drug Administration 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.

### Immuno-Compromised Persons

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 health care providers. EPA/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection from Cryptosporidium and other microbiological contaminants are available from

EPA's Safe Drinking Water Hotline at 800-426-4791.

### Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. WWS 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 at 800-426-4791 or at [epa.gov/safewater/lead](http://epa.gov/safewater/lead).