

2013

Water Quality Report



Public Works Department
Water and Wastewater Services

Dear Customers,



Broward County Water and Wastewater Services (WWS) is pleased to provide you, our customers, with its 2013 Water Quality Report. In 2013, WWS continued its 52-year tradition of providing high quality water to our customers at a reasonable price. Once again, our water met or exceeded all standards of the federal Safe Drinking Water Act.

In addition to providing high-quality drinking water, WWS continues to look to our long-term future by preserving and responsibly utilizing our community's resources.

In an effort to conserve our most valuable resource, our water supply, WWS has partnered with Palm Beach County Utilities to develop a Regional Reclaimed Water System to serve southern Palm Beach County and portions of extreme northern Broward County with water reclaimed from the North Regional Wastewater Treatment Plant owned and operated by WWS. This project is expected to recover up to 21 million gallons per day of water which can be used for irrigation. This regional approach will benefit reclaimed water customers, the environment and satisfy the requirements of the Ocean Outfall Rule and will save Broward County up to \$385 million in future capital costs. Presently, both counties have expressed support and various financial scenarios to implement this regional reclaimed water strategy are being evaluated.

Our commitment to energy conservation is another component of WWS's pledge to responsibly manage our community's resources. Energy Conservation Measures

for Water and Wastewater Services developed by Chevron Energy Solutions Company has developed a strategy for reducing our wastewater treatment plant's energy consumption and carbon emissions through the re-use of grease. Expected to be operational in 2016, this initiative will save Broward County \$1.5 million per year in energy costs and represents a milestone partnership between Chevron's Energy Solutions team and Broward County.

Additionally, WWS will begin delivering its Water Quality Reports, also known as Consumer Confidence Reports (CCRs), electronically in 2015. Customers will be notified by mail of the availability of the 2014 CCR, with a direct website link to the CCR. Those who prefer to receive a hard copy will be able to request one in advance or contact Customer Service. This new delivery option, accepted by the Environmental Protection Agency (EPA) in 2013, introduces new ways to reach customers and will result in a reduced environmental impact (lessens paper use) and a cost savings for utilities. For more information on EPA's CCR Rule Retrospective Review visit: Water.epa.gov/lawsregs/rulesregs/sdwa/ccr/regulations.cfm

Water and Wastewater Services continues to be an active and energetic member of this community, as we have been for over 50 years. Thank you again for allowing us to be of service to you.

Sincerely,

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

Our Water Quality Meets or Exceeds EPA Regulations

A review of the following 2013 water quality data shows that your drinking water quality meets all primary standards set by the EPA. The following tables list the parameters set by the Safe Drinking Water Act and the levels detected in potable water for Districts 1A, 2A, 3A and 3B/C. This report includes the results of our monitoring for the period of January 1 to December 31, 2013. Data obtained before January 1, 2013, and presented in this report are from the most recent testing done in accordance with drinking water laws, rules and regulations.



Water Quality

Source of Water

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

Source Water Assessment

The State of Florida Department of Environmental Protection (FDEP) performed a Source Water Assessment on our systems in 2013. The report(s) indicated no unique potential contaminant sources in District 1A and one unique potential contaminant sources in District 2A. Potential contaminant sources include gas stations, dry cleaners, injection wells and other businesses that operate in the service area. All potential sources are considered to be of low concern based on FDEP scoring results. In 2013, FDEP performed a Source Water Assessment for the City of Hollywood which provides water for our 3A and 3BC systems. The assessment results are available on the FDEP Source Water Assessment Protection Program website at dep.state.fl.us/swap.

Softening

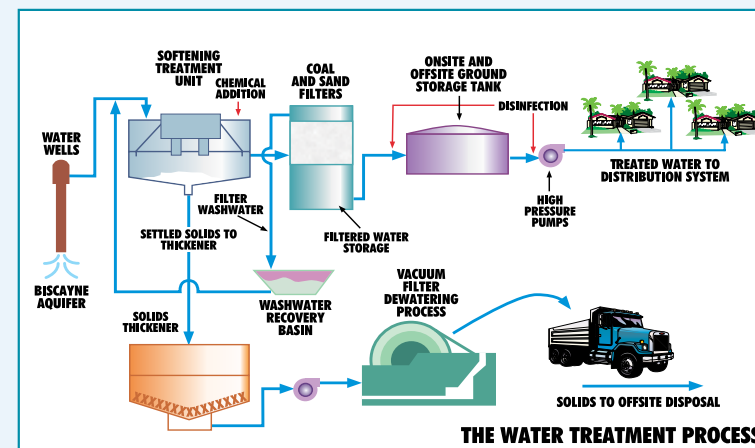
At the water treatment plant, the ground water is initially treated with lime and ferric chloride to reduce hardness and color. During this step of the treatment process, chemicals are added so that most of the hardness and particles in the water can be easily removed.

Fluoridation

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

Filtration

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



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



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

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

More than 23,000 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.

2013 TEST RESULTS (3A and 3BC water supplied by the City of Hollywood)

MICROBIOLOGICAL CONTAMINANTS									
Contaminant	Date of Sampling (mo/yr)	MCL Violation Y/N	1A Highest Monthly % Positive	2A Highest Monthly % Positive	3A Highest Monthly # Positive	3BC Highest Monthly % Positive	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (treated water in the distribution system)	01/13 - 12/13	N	4.88%	2.99%	NA	4.36%	0.0%	> 5%	Naturally present in the environment
		N	NA	NA	1	NA	0	> 1	
Contaminant	Date of Sampling (mo/yr)	MCL Violation Y/N	# Positive Samples for the Year	# Positive Samples for the Year	# Positive Samples for the Year	# Positive Samples for the Year	MCLG	MCL	Likely Source of Contamination
<i>E. coli</i> (untreated water at the groundwater source)*	01/13 - 12/13	N	0	1	1	1	0	0	Human and animal fecal waste
*On June 10, 2013, we sampled the 3A-SRWF source well PW24 for the fecal-indicator, <i>E. coli</i> . We were notified on June 11 that well PW24 tested positive for <i>E. coli</i> . On June 12, we took five additional samples, subsequently disconnected a section of pipe to create an air gap, took the well PW24 off-line and the contamination has been addressed. The well has been rehabilitated, the air gap still exists and we have not had to utilize the well PW24 since the rehabilitation was completed.									
*On December 18, 2013, we sampled the 2A-NRWF source well PW27 for the fecal-indicator, <i>E. coli</i> . We were notified on December 19 that well PW27 tested positive for <i>E. coli</i> . We immediately disconnected a section of pipe to create an air gap, took the well PW27 off-line and the contamination has been addressed. The well is scheduled for rehabilitation to be completed in 2014, the air gap still exists and the well PW27 will not be utilized until rehabilitation is complete.									
Health Effects: Fecal coliforms and <i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.									
INORGANIC CONTAMINANTS									
Contaminant	Date of Sampling (mo/yr)	MCL Violation Y/N	1A	2A	3A	3BC	MCLG	MCL	Likely Source of Contamination
Arsenic (ppb)	01/11 - 12/13	N	ND	ND	0.6	0.6	0	10	Erosion of natural deposits
Barium (ppm)	01/11 - 12/13	N	0.004	0.006	0.0041	0.0041	2	2	Erosion of natural deposits
Fluoride (ppm)	01/11 - 12/13	N	0.939	0.904	0.12	0.12	4	4	Additive to promote strong teeth when 0.7-1.3 ppm.
Nickel (ppb)	01/11 - 12/13	N	ND	ND	1.3	1.3	NA	100	Mining and refining operations; natural occurrence in soil
Nitrate (ppm)	01/13 - 12/13	N	0.3942	0.0399	0.092	0.092	10	10	Runoff from fertilizer use; erosion of natural deposits
Nitrite (ppm)	01/13 - 12/13	N	ND	ND	0.034	0.034	1	1	Runoff from fertilizer use; erosion of natural deposits
Sodium (ppm)	01/11 - 12/13	N	40.4	19.4	28.8	28.8	NA	160	Leaching from soil
STAGE 2 DISINFECTANTS and DISINFECTION BY-PRODUCTS									
Contaminant	Date 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)	01/13 - 12/13	N	3.5 (0.6-4.3)	3.9 (1.4-4.7)	3.4 (1.2-4.0)	3.0 (0.8-4.2)	4.0	4.0	Water additive used to control microbes
HAA5-haloacetic acids (ppb)		N	37.00 (15.0-54.3)	39.00 (35.0-39.0)	18.00 (17.0-18.0)	21.00 (15.0-21.0)	NA	60	By-product of drinking water disinfection
TTHM-total trihalomethanes(ppb)		N	57.00 (30.5-70.3)	52.00 (35.0-52.0)	17.00 (15.0-17.0)	24.00 (11.0-24.0)	NA	80	By-product of drinking water disinfection
LEAD and COPPER (Tap Water)									
Contaminant (90th Percentile Value)	Date of Sampling (mo/yr)	AL Violation Y/N	1A	2A	3A	3BC	MCLG	Action Level (AL)	Likely Source of Contamination
Copper (Tap Water) (ppm)	8/13	N	0.06800	0.04500	0.09900	0.03700	1.3	1.3	Corrosion of household plumbing systems, erosion of natural deposits
# of Sites exceeding the AL			0	0	0	0			
Lead (Tap Water) (ppb)		N	8.48	1.89	1.79	2.45	0	15	
# of Sites exceeding the AL			0	0	0	0			
UNREGULATED CONTAMINANTS									
Contaminant	Sample Year	MCL Violation Y/N	1A (range)	2A (range)	3A (range)	3BC (range)	Draft Reference Concentration (RC)	Likely Source of Contamination	
Chlorate (ppb)	2013	NA	940 (580-1300)	NA	NA	267.5 (160-380)	210	Agricultural defoliant; disinfection byproduct	
Chlorodifluoromethane (ppt)	2013	NA	ND	NA	NA	165.0 (150-180)	Not Available	Refrigerant; solvent; fluorocarbon resins	
Chromium (ppb)	2013	NA	0.36 (0.36-0.36)	NA	NA	0.28 (0.26-0.30)	100	Naturally occurring element	
Hexavalent Chromium (ppb)	2013	NA	0.20 (0.19-0.21)	NA	NA	0.052 (0.034-0.066)	Not Available	Release of industrial chemicals	
Molybdenum (ppb)	2013	NA	1.15 (1.1-1.2)	NA	NA	ND	40	Naturally occurring element	
Strontium (ppb)	2013	NA	200 (190-210)	NA	NA	220 (220-220)	4000	Naturally occurring element	
Vanadium (ppb)	2013	NA	2.2 (2.1-2.3)	NA	NA	0.555 (0.44-0.63)	21	Naturally occurring element	

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.

D/DBP: Disinfectant/Disinfection By-product.

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.

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 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.

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

NA: Not applicable.

ppb: Parts per billion, or micrograms per liter ($\mu\text{g}/\text{l}$).

ppm: Parts per million, or milligrams per liter (mg/l).

TTHM: Total Tri-halomethanes.

Possible Contaminants

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:

- (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 activities.
- (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 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 EPA's Safe Drinking Water Hotline at **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.



WATER AND WASTEWATER SERVICES

2555 West Copans Road
Pompano Beach, FL 33069

**Coming Soon...Electronic Delivery
of Water Quality Reports in 2015!**

Our Best In Every Drop

Mission Statement

Water and Wastewater Services is committed to being a benchmark comprehensive utility providing exceptional retail and regional water and wastewater management services and programs to its customers; supporting continuous improvement while maintaining the quality of life in Broward County through sound environmental practices.



WATER AND WASTEWATER SERVICES

2555 West Copans Road,
Pompano Beach, FL 33069
Broward.org/Waterservices

GENERAL INFORMATION:

Customer Service
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



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FOR ADDITIONAL COPIES OF THIS REPORT, CONTACT:

**Water and Wastewater Operations
Division**

Phone: **954-831-0810**
Fax: **954-831-0842**

TO VIEW THE 2013 WATER QUALITY REPORT ONLINE, GO TO:

[Broward.org/WaterServices/
Documents/2013WaterQualityReport.PDF](http://Broward.org/WaterServices/Documents/2013WaterQualityReport.PDF)

49,000 copies of this public document were promulgated at a gross cost \$16,957.00 and \$0.346 per copy including postage to provide public information about Broward County's drinking water quality during 2013.

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.