CITY OF DELRAY BEACH
ENVIRONMENTAL SERVICES DEPARTMENT

All-America City
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DRINKING WATER QUALITY REPORT FOR 2016

(This report is mandated by the Florida Department of Environmental Protection and has been produced and distributed at our customers' expense)

The report is for Water Quality supplied to our customers from January 1, 2016 to December 31, 2016. This report is intended to provide our customers with information relating to the quality of water produced by the City of Delray Beach Water Treatment Plant. Our Drinking Water is produced within the stringent governmental guidelines for treatment and testing of drinking water in the United States. (ESPAÑOL)Este es un documento muy importante con respecto a su agua potable. Este reporte está disponible en Español en La Casa Municipal cuando llame a (561) 243-7000 o visitenos en la Internet a www.mydelraybeach.com. (KREYOL) Ti Liv sa, se yon Dokiman trè enpotan Konsènan Kalite Dlo Ke ou bwe. Si ou ta vle, ou Kapab jwen'n li an Kreyol nan Komi'n Delray Beach la.

Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 to 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 microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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 Delray 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 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.

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. During the past year we were required to conduct and complete a level 1 assessment. No corrective actions were required. In addition, we had some sites in the distribution system extremities and end points that violated the minimum total chlorine residual level of 0.6 mg/L. When this occurred, actions were taken to raise levels above the minimum standard.

Why are Contaminants present in 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 storm water 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 storm water 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 storm water 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 insure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. 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 Hotline (1-800-426-4791).

Where Does Our Water Come From?

The City of Delray Beach withdraws water from a shallow under-ground aquifer known as the "Anastasia Formation". There are 30 raw water wells located throughout the City from which water is drawn and piped to the water treatment plant. We are currently operating under a water use permit issued by the South Florida Water Management District. Our water use permit allows for the withdrawal of up to 19.1 million gallons per day.
In 2016, the Florida Department of Environmental Protection (FDEP) performed a Source Water Assessment of our system. The assessment was conducted to provide information about potential sources of contamination near City's wells. There were seventeen potential sources of contamination identified for the City's system with low to moderate susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program web site at www.dep.state.fl.us/swapp or they can be obtained by contacting the city at (561) 243-7318. The city monitors for source water contaminants on a semiannual basis to ensure its safety.

How is Our Water Treated?

The City of Delray Beach Water Treatment Plant utilizes what is known as "Lime Softening Process" to treat raw water prior to distribution to our customers. Upon arrival at the Water Treatment Plant, the raw water is first aerated to remove natural gasses. The water is then blended with lime in a clarifier for softening, color removal and iron removal. After the blending process the water is then filtered and disinfected per the Health Department. Prior to distribution, Fluoride is injected to prevent tooth decay.

How we Ensure the Highest Water Quality?

During the treatment process as well as after the water is released into the distribution system, it undergoes a series of intense testing. Thousands of samples are analyzed each year for chemical, physical and microbiological parameters. The results of this test are compared with standards set by the U.S. Environmental Protection Agency. These results are indicated on the tables included below in this pamphlet. When reading these tables, the lower the test results, the higher the water quality. This ongoing testing and research is your assurance that water produced by the City of Delray Beach will be of the highest quality for consumption each time you turn on your faucet.

Additional Testing

We also conduct tests for the presence of 85 additional contaminants, such as Volatile Organic Compounds (VOC), Polychlorinated Biphenyl (PCB) & Pesticides, Unregulated Contaminants, Arsenic, Asbestos, Mercury and many others. We are pleased to report that all of these additional contaminants were below the detection limits of our sampling instruments. Compliance monitoring requirements for certain contaminants are less frequent than once per year since concentrations are not expected to vary significantly from year to year. Some results are from previous years monitoring.

Additional Information

The Environmental Services Department of the City is open Monday through Friday from 7:30am to 4:30pm and can be contacted directly for questions and concerns relating to water quality. The City of Delray Beach conducts regular City Commission meetings on the first and third Tuesday of every month in the Commission Chambers at City Hall. These meetings are open to the public and are an excellent forum for citizens to voice their questions and concerns. We have worked very hard to maintain a first rate facility and we welcome the public to tour our Water Treatment Plant. Tours can be scheduled by contacting the Water Treatment Plant directly. Further details of our water treatment process are also available at our web site www.mydelraybeach.com.

Important Telephone Numbers

City of Delray Beach Environmental Services Dept.	(561) 243-7000. ext. 4000		
City of Delray Water Treatment Plant	(561) 243-7318	Florida Department of Health	(904) 791-1599
Palm Beach County Public Health Unit	(561) 837-5900	Environmental Protection Agency	(800) 426-4791

Interesting Comparisons

1 part per million is equal to 1 cent in $10,000; 1 inch in 16 miles; 1 second in 12 days; 1 pound in 500 tons; 1 par in 55,500 rounds of golf

Definitions

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (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.

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

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Abbreviations

Parts per Million (ppm); Parts per Billion (ppb); Not Detected (ND); Picocurie per Liter (pCi/L); Not Applicable (N/A)

TEST RESULTS
2016 CCR - CITY OF DELRAY BEACH

Primary Inorganic Contaminants

Contaminant and Unit of Measurement	*Dates of sampling (mo./yr.)*	*MCL or MRDL Violation Y/N*	*Level Detected*	*Range of Results*	*MCLG*	*MCL*	*Likely Source of Contamination*
Barium (ppm)	10/14	N	0.00439 ppm	0.00439	2 ppm	2 ppm	(a)
Chromium (ppb)	10/14	N	1.84 ppb	1.84	100 ppb	100 ppb	(b)
Fluoride (ppm)	05/16	N	0.83 ppm	0.11 – 0.83	4 ppm	4 ppm	(c)
Nitrate as Nitrogen (ppm)	11/16	N	0.11 ppm	0.11	10 ppm	10 ppm	(d)
Nitrite as Nitrogen (ppm)	11/16	N	0.12 ppm	0.12	1 ppm	1 ppm	(e)
Sodium (ppm)	10/14	N	30.4 ppm	30.4	160 ppm	160 ppm	(f)

Microbiological Contaminants

Contaminant	*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*
Total Coliform Bacteria	01/16-03/16	N	3%	0 - 3	0	5%	(g)

Stage 2 Disinfectant/Disinfection By-Product (D/DBP) Parameters / Stage 1 Chloramines

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*
Total Trihalomethanes (ppb)	01/16 -12/16	N	26.9 ppb	17.4 – 37.2	0 ppb	80 ppb	(h)
Total Halo Acetic Acid (ppb)	01/16 -12/16	N	32.9 ppb	14.1 – 40.6	0 ppb	60 ppb	(h)
Chloramines (ppm)	01/16 -12/16	N	3.2 ppm	0.09 – 5.9	4 ppm	4 ppm	(i)

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*
Lead (tap water) ppb	07/16 -12/16	N	4 ppb	1	0 ppb	15 ppb	(j)
Copper (tap water) ppm	07/16 -12/16	N	0.22 ppm	0	1.3 ppm	1.3 ppm	(k)

The following is a list of the definition and likely source of contamination for each detected contaminant.

(a) Barium	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
(b) Chromium	Discharge from steel and pulp mills; erosion of natural deposits
(c) Fluoride	Erosion of natural deposits; water additive which promotes strong teeth at optimum levels between 0.7 and 1.2 ppm; discharges from fertilizer and aluminum factories.
(d) Nitrate as Nitrogen	Formed when nitrogen is exposed to oxygen; both are elements occurring in nature. A likely source is erosion of natural deposits.
(e) Nitrite as Nitrogen	Formed when nitrogen is exposed to oxygen; both are elements occurring in nature. A likely source is erosion of natural deposits.
(f) Sodium	Salt water intrusion; leaching from soil
(g) Total Coliform Bacteria	Naturally present in the environment
(h) TTHM's & HAA's	TTHM's & HAA's are contaminants formed when chlorine reacts with carbon compounds naturally occurring in ground water, such as chloroform. These items are a by-product of drinking water Chlorinating.
(i) Chloramines	Water additive used to control microbes
(j) Lead	Lead is an element occurring in nature and often occurs in water as the result of corrosion of household plumbing systems.
(k) Copper	Copper is an element occurring in nature and often occurs in water as the result of corrosion of household plumbing systems.