

# Annual Consumer Report on the Quality of Tap Water for 2008

## Introduction

The City of Cape Coral is committed to providing residents with a safe and reliable supply of high-quality drinking water. We process and test our water using sophisticated equipment and advanced procedures. The City of Cape Coral tap water meets state and federal standards for both appearance and safety. This annual "Consumer Confidence Report," required by the Safe Drinking Water Act (SDWA), tells you where your water comes from, how it is processed, what our tests show about it, and other things you should know about drinking water.

This report contains information on the treatment process and results of testing for potentially harmful contaminants in your tap water. The information in this report can be summarized as follows:

The City of Cape Coral's drinking water meets or surpasses  
all federal and state drinking water standards.

We encourage public interest and participation in our community's decisions affecting drinking water. Regular City Council meetings are held every Monday at 4:30 P.M. at City Hall Council Chambers. The public is welcome. The upcoming agenda is posted on the bulletin board at City Hall or available on-line at [capecoral.net](http://capecoral.net). If you have any questions about this report or concerning your water utility please contact Shawn Kopko, Water Production Superintendent, or Andrew Fenske, Chief Operator, at 574-0877. Water Quality Data for community water systems throughout the United States is available on the internet at [waterdata.com](http://waterdata.com).

## Treatment Plant History

The City of Cape Coral Reverse Osmosis (RO) Plant is the oldest and one of the largest municipal RO treatment facilities in the United States. The original plant was built in 1977 with a 3 million gallon per day (MGD) production capability to supplement the city's existing Lime Softening Treatment Plant (2 MGD). In 1980, the city expanded the facility to 5 MGD. At that time, the City was experiencing problems with its Lime Softening Plant due to salt water intrusion into the wellfield (Upper Hawthorn Aquifer). The city also was experiencing a rapid growth in population. Faced with these two issues, the city decided to abandon the Lime Softening Plant and initiate a major expansion of the RO Plant. Cape Coral would be the first city of significant size in the United States to make the decision to rely completely on reverse osmosis treatment as its only means of producing potable water.

The decision paid off. By 1985, the city had the largest low pressure reverse osmosis plant in the world, capable of producing 15 MGD. The plant was producing water at a cost that was cheaper than the Lime Softening Plant and it had tapped into a source water supply (Lower Hawthorn Aquifer) that would provide enough water for many years to come. Although production capability remained the same for more than 20 years, many changes took place at the plant during that time. The city kept pace with changing technologies and completed many upgrades and retrofits. These technology improvements included: more efficient low pressure membranes, variable frequency drives, computer automation, etc. Despite being the oldest plant of its kind, these changes allowed the plant to continue to be a "state of the art" facility producing high quality potable water at a reasonable cost.

Due to a rapid increase in population and a planned major expansion of the utilities service area, the city began design work in 2005 to expand the production capacity of the plant from 15 MGD to 18 MGD. This increased capacity would ensure that the city had a sufficient supply of potable water until an additional RO Plant could be designed and built in the northern part of the city. The expansion at the existing plant was completed in 2008. The new North Plant is scheduled to be completed and on-line by Fall of 2009.

## Water Source

The source of the City of Cape Coral's municipal potable water supply is groundwater from the Lower Hawthorn Aquifer. Local geologists have estimated that this aquifer has a sufficient supply of water to support the future growth of Cape Coral. The recharge areas for the Lower Hawthorn Aquifer have been determined to be an area encompassing the north-central part of Florida. Source water currently being used by the RO Plant has been estimated to be more than 10,000 years old, based on underground flow rates of inches per year.

Because of its mineral content, brackish water is the term used to describe the quality of the source water. Minerals are compounds commonly found in nature, like salts. The amount of minerals found in water are expressed as dissolved solids. The city's source water has a total dissolved solids (TDS) content of approximately 2,000 parts per million (ppm), as opposed to the TDS of seawater, which is approximately 35,000 ppm.

There are 33 wells at a depth of approximately 700 to 800 feet that tap this water supply. The wellfield is located in the southwestern part of the city. Wells are located around the plant grounds and in or near the medians of Agualinda Boulevard, Chiquita Boulevard, Gleason Parkway, and Trafalgar Parkway.

In 2004 the Department of Environmental Protection performed a Source Water Assessment on our system. The

assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are 4 potential sources of contamination identified for our system with low to high susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at [dep.state.fl.us/swapp](http://dep.state.fl.us/swapp).

The depth of the Lower Hawthorn Aquifer, the significant confining layers of earth above it, our stringent well construction methods, and our wellhead protection program, help to protect our source water from man-made contaminants. The major treatment requirement for our source water is reduction of the naturally occurring total dissolved solids. The reverse osmosis treatment process does this very effectively.

### Water Quality Data Table

The City of Cape Coral routinely monitors for contaminants in your drinking water according to federal and state laws. This table is based upon tests conducted in the year 2008. Because of our consistent compliance with testing requirements and results that regularly exceed federal and state drinking-water standards, we have been granted reduced testing frequencies for many contaminants listed in the table. Therefore, some tests are conducted less frequently than once a year. If the test was not performed in 2008, then the most recent analysis is listed.

As water travels over the land or underground it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk.

The Water Quality Data Table lists only the contaminants that were detected. In addition to these, we also tested for many other contaminants that were not detected. Results from the most recent testing required by EPA, show that **the following contaminants were not detected:**

Fecal Coliform/E. Coli, Antimony, Arsenic, Asbestos, Barium, Beryllium, Cadmium, Chromium, Color, Cyanide, Foaming Agents, Lead (point of entry), Mercury, Nickel, Selenium, Thallium, 2,4,5-TP (Silvex), 2,4-D, Alachlor, Atrazine, Benzo(a)pyrene [PAH], Carbofuran, Chlordane, Dalapon, Di (2-ethylhexyl) adipate, Di(2-ethylhexyl)phthalate, Dibromochloropropane (DBCP), Dinoseb, Dioxin (2,3,7,8-TCDD), Diquat, Endothall, Endrin, Ethylene dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobezene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxamyl [Vydate], PCB's [Polychlorinated biphenyls], Pentachlorophenol, Picloram, Simazine, Toxaphene, Benzene, Carbon Tetrachloride, Chlorobenzene, o-Dichlorobenzene, p-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Styrene, Tetrachloroethylene, 1,2,4-Trichlorobenzene, 1,1,1,-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Toluene, Vinyl Chloride, Xylenes, Aluminum, Copper (point of entry), Copper (tap water 90th Percentile), Iron, Manganese, Silver, Zinc, Carbaryl, Methomyl, Aldicarb Sulfoxide, Aldicarb Sulfone, Metolachlor, Aldicarb, 3-Hydroxycarbofuran, Propachlor, Aldrin, Dieldrin, Dicamba, Metribuzin, Isophorone, 2,4-Dinitrotoluene, Dimethylphthalate, Diethylphthalate, Di-n-butylphthalate, Butyl benzylphthalate, Dioctylphthalate, 2-Chlorophenol, 2-Methyl-4,6-dinitrophenol, Phenol, 2,4,6-Trichlorophenol, 2,4-Dinitrotoluene, 2,6-dinitrotoluene, Acetochlor, DCPA mono-acid, Degradate, Di-acid degradate (DCPA), 4,4'-DDE, EPTC, Molinate, Methyl tert-butyl-ether (MTBE), Nitrobenzene, Perchlorate, Terbacil

### Water Quality Data Table Terms and Abbreviations

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms, we've provided the following definitions:

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

**pCi/L: picocuries per liter** - a measure of the radioactivity in water.

**ppm: parts per million** - one part by weight of analyte to 1 million parts by weight of the water sample.

**ppb: parts per billion** - one part by weight of analyte to 1 billion parts by weight of the water sample.

**MCL: Maximum Contaminant Level** - 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.

**MCLG: Maximum Contaminant Level Goal** - 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.

**MRDL: Maximum Residual Disinfectant Level** - the 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.

**MRDLG: Maximum Residual Disinfectant Level Goal** - the level of a 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.

**TON: Threshold Odor Number** - a measure of the odor in water.

**Note:** MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

### City of Cape Coral Water Quality Data Table for Non-Secondary Contaminants

Contaminant	Date Sampled	Unit	MCL	MCLG	Detected Level	Range	Major Sources	Violation Yes/No
<b>Microbiological Contaminants</b>								
Total Coliform	2008	samples	<b>5.0%</b>	0	<b>2.75%</b>	0-2.75%	Naturally present in the environment	<b>No</b>
<b>Radiological Contaminants</b>								
Alpha Emitters	2008	pCi/L	<b>15</b>	0	<b>4.9</b>	2.9-6.8	Erosion of natural deposits	<b>No</b>
Combined Radium	2008	pCi/L	<b>5</b>	0	<b>1.6</b>	1.4-1.8	Erosion of natural deposits	<b>No</b>
<b>Inorganic Contaminants</b>								
Fluoride	01/31/08	ppm	<b>4</b>	4	<b>0.78</b>	n/a	Erosion of natural deposits; Discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm	<b>No</b>
Nitrate	01/31/08	ppm	<b>10</b>	10	<b>0.05</b>	n/a	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	<b>No</b>
Nitrite	01/31/08	ppm	<b>1</b>	1	<b>0.002</b>	n/a	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	<b>No</b>
Sodium	01/31/08	ppm	<b>160</b>	n/a	<b>99.4</b>	n/a	Salt water intrusion, leaching from soil	<b>No</b>
<b>TTHM's and Stage 1 Disinfectant/Disinfection By-Product (D/DBP) Parameters</b>								
TTHMs [Total trihalomethanes]	07/28/08	ppb	<b>80</b>	n/a	<b>48</b>	n/a	By-product of drinking water chlorination	<b>No</b>
HAA5 [Haloacetic Acids five]	07/28/08	ppb	<b>60</b>	n/a	<b>7.11</b>	n/a	By-product of drinking water chlorination	<b>No</b>
Chlorine	2008	ppm	<b>MRDL = 4</b>	<b>MRDLG = 4</b>	<b>1.3</b>	0.1-4.8	Water additive used to control microbes	<b>No</b>

Contaminant	Date Sampled	Unit	AL (Action Level)	MCLG	90th Percentile Result	No. of sites exceeding the AL	Major Sources	Violation Yes/No
<b>Lead and Copper (Tap Water)</b>								
Lead (tap water)	08/13/08	ppb	<b>AL=15</b>	0	<b>1</b>	0	Corrosion of household plumbing systems; Erosion of natural deposits	<b>No</b>

### City of Cape Coral Water Quality Data Table for Secondary Contaminants

Contaminant	Date Sampled	Unit	MCL	MCLG	Detected Level	Range	Major Sources	Violation Yes/No
<b>Secondary Contaminants</b>								
Chloride	01/31/08	ppm	<b>250</b>	n/a	<b>175</b>	n/a	Natural occurrence from soil leaching	<b>No</b>
Odor	01/31/08	TON	<b>3</b>	n/a	<b>1</b>	n/a	Natural occurrence from soil leaching, naturally occurring organics	<b>No</b>
Sulfate	01/31/08	ppm	<b>250</b>	n/a	<b>33.6</b>	n/a	Natural occurrence from soil leaching	<b>No</b>
Total Dissolved Solids	01/31/08	ppm	<b>500</b>	n/a	<b>353</b>	n/a	Natural occurrence from soil leaching	<b>No</b>

### Additional Health Information

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 storm 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, stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organics, 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.

In order to ensure 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.

All 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 (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than is 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/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

### Conclusion

Your city drinking water meets or surpasses all federal and state drinking-water standards. We at the City of Cape Coral Reverse Osmosis Plant work around the clock to provide high quality water to every tap. We ask that all our customers help us protect and conserve our water sources, which are the heart of our community, our way of life and our children's future. Thank you for allowing us to continue providing your family with clean, quality water this year.

