

2002

*annual drinking
water quality
report*

**Annual Public Meeting
6 p.m., Thursday, June 26, 2003**

2726 Holly Road * Corpus Christi, TX

Este reporte contiene informacion sobre su agua potable. Para obtener una copia de este reporte en Español, por favor llame al (361) 857-1881.

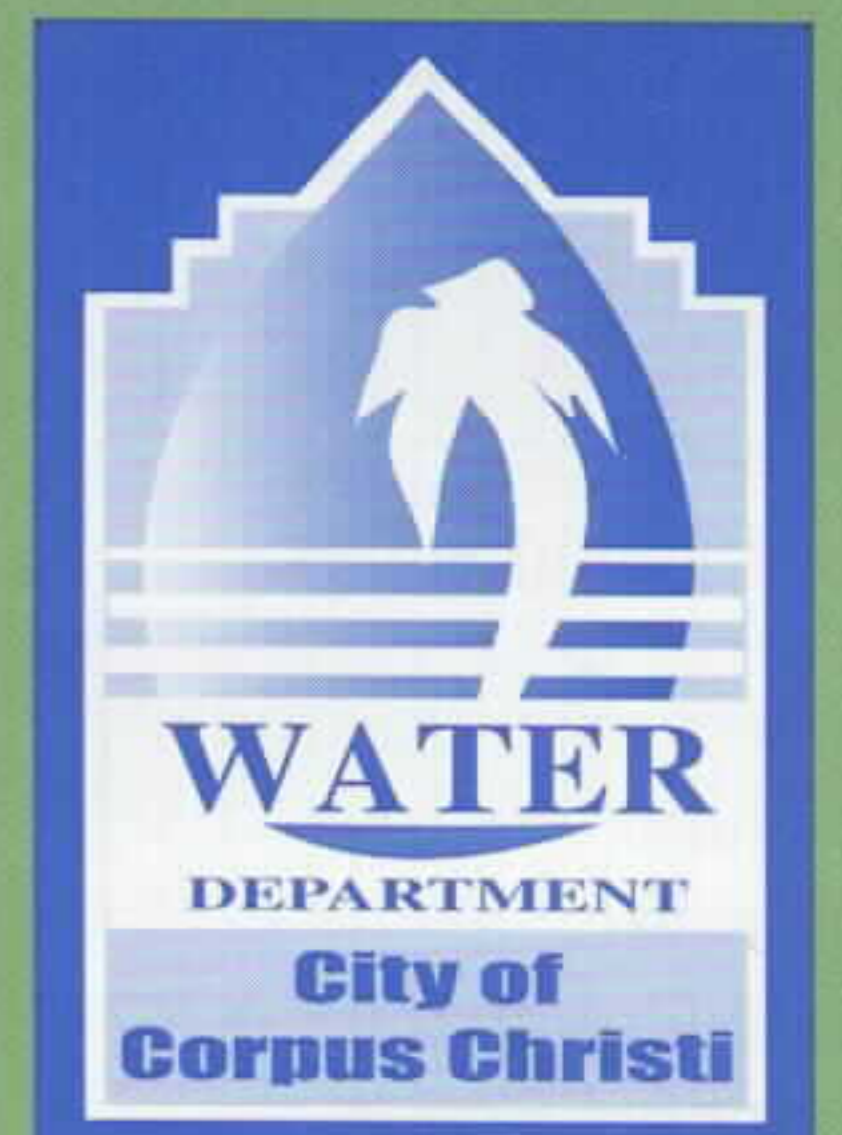
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Corpus Christi, Texas



Water Emergency
(361) 857-1888 - 24 hours

Water Administration Office
(361) 857-1881

USEPA Safe Drinking
Water Hotline
1-800-426-4791

Published June 2003





Dear Water Customer,

Published June 2003

We are pleased to send you the City of Corpus Christi Water Department's annual drinking water quality report. The City takes many steps to provide you with high quality drinking water that includes extensive water quality monitoring and testing. This report includes the test results for water samples collected during 2002 along with other important information.

We want to assure you that we have taken extensive security measures to maintain the reliability of our water supply system.

We also want to update you on capital improvement projects currently taking place such as the construction of a new Navigation Pump Station, installation of Southside transmission line, and improvements to the O. N. Stevens Water Treatment Plant. These investments will serve future generations and leave them with an even better water system to last well into this century.

We hope that you take a few minutes to read this important report. Please contact us if you have any comments or questions.

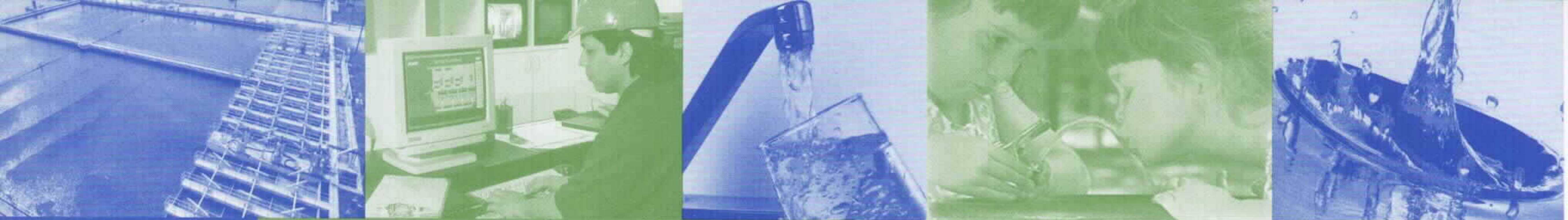


2002

annual drinking water quality report

This annual report is mailed to all Corpus Christi water customers as required by USEPA Safe Drinking Water Act of 1996. Additional copies are available at the City's Central Library and can also be found on our web site at www.cctexas.com.

Your local water department is part of the City of Corpus Christi. As a municipal governmental agency, we are committed to excellence in the delivery of a vital natural resource. As a resident of the city, we encourage you to become involved and to learn more about our water system and the quality of water. City Council meetings are held most Tuesdays at City Hall, located at 1201 Leopard Street. For meeting dates and times, please call the City Secretary's office at (361) 880-3105.



2002

annual drinking water quality report

Across the United States, water utilities are delivering their annual drinking water quality report to their customers. The report complies with the regulations set forth by the U. S. Environmental Protection Agency Safe Drinking Water Act of 1996. The City of Corpus Christi Water Department holds that same commitment by keeping our customers informed. We are pleased to report that during 2002 our water met and even exceeded the requirements set by USEPA. We routinely collect and test water samples every step of the way, from the water source right up to your faucet. We maintain a state-certified laboratory to perform bacteriological analysis on

drinking water. To ensure that tap water is safe to drink, the USEPA adopted regulations to set water quality standards for public water systems. The standards are based on maximum contaminant level (MCL) and maximum contaminant level goal (MCLG). The table entitled "Water Quality Monitoring Results" identifies the average and range (as shown in the blue column) for the constituents found in the City's drinking water. The green column identifies the USEPA's parameters for MCL and MCLG. These parameters are set as safe drinking water standards for all United States water systems. To learn more, please attend our annual meeting on Thursday, June 26, 2003 at 6 p.m., Water Utilities Conference Room, 2726 Holly Road, Corpus Christi, Texas.

Q & A How would I know if there was a problem with my drinking water?

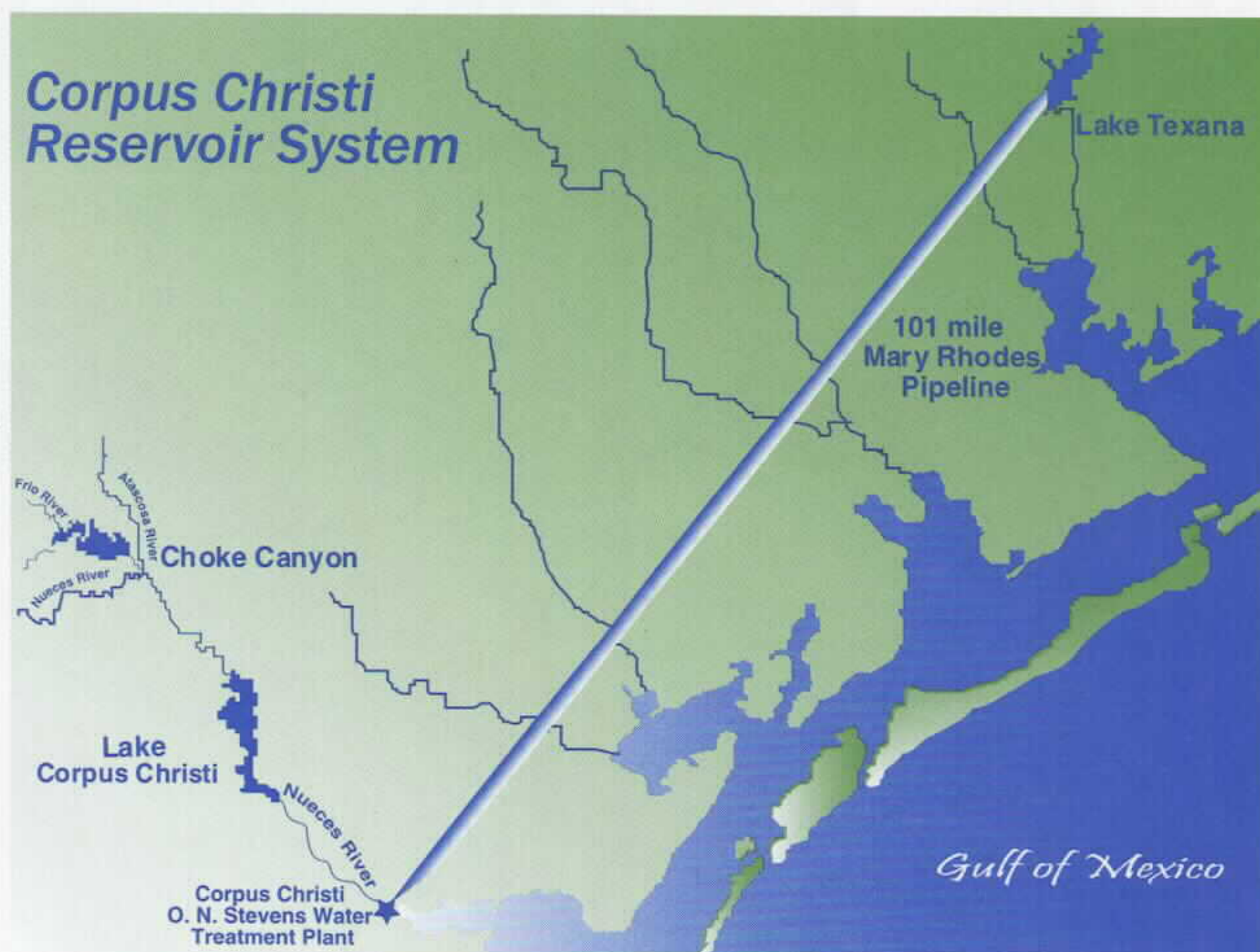
The City Water Department keeps a close watch on your water supply from the river to the tap. The State and Federal law requires that you be told if there is a problem with your drinking water. You can be assured that our dedicated staff will inform the community if the need should ever arise.

Get to Know the Source of Your Drinking Water

Our primary drinking water supply is from surface water. Corpus Christi and surrounding communities get their drinking water from Choke Canyon Reservoir, Lake Corpus Christi and Lake Texana. The Nueces River serves to transport water that flows from Choke Canyon and Lake Corpus Christi. Water from Lake Texana is transported through the Mary Rhodes Pipeline directly to the O. N. Stevens Water Treatment Plant where the process of making safe drinking water begins and the treated water is distributed through underground pipelines to our community. The TCEQ has completed source water assessment and the report will be available later this year. It allows us to focus on our source water protection activities.

What USEPA Has to Say About Drinking Water?

When drinking water meets federal standards, there may not be any health based benefits to purchasing bottled water or point of use devices. 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).



FAQ

Frequently Asked Questions on Water Quality



Public Meeting

A public meeting will be held on Thursday, June 26, 2003 at 6:00 p.m. to review the contents of this drinking water quality report.

City of Corpus Christi Water Department
Water Utilities Conference Room
2726 Holly Road * Corpus Christi, Texas

How does Corpus Christi's water system rate?

Corpus Christi continues to meet all federal, state and local standards. The Corpus Christi water system is recognized as a "Superior Public Water System" by the Texas Commission on Environmental Quality.

Do we have hard water?

Yes. Our water is considered moderately hard based on the amount of calcium and magnesium present in the water. Water samples taken during 2002 showed a total hardness of 154 milligrams per liter or about 9.02 grains per gallon.

Do purification devices make drinking water safer?

Tap water supplied by the City of Corpus Christi is safe to drink. You have a personal choice to purchase water purification devices. At the same time, purification devices have been known to cause problems in the quality of drinking water due to the lack of proper filter replacement.

What are secondary constituents?

Drinking water has constituents that come from minerals and metal, which remain in the water even after treatment. During 2002, TCEQ tested a sample of our drinking water for the constituents listed below. These constituents do not relate to public health, but are important to the aesthetic quality of our drinking water.

Secondary Constituents	Value
Calcium	48 ppm
Chloride	134 ppm
Dilute Conductance	815 umhos/cm
Dissolved Solids	467 ppm
pH	8.2 (1)
Sodium	93.4 ppm
Sulfate	75.2 ppm
Total Alkalinity	106 ppm
Total Hardness	154 ppm or 9.02 grains p/gallon

Why does our drinking water have a different taste and odor?

During hot South Texas summer weather, our surface water reservoirs faces a rapid, but natural growth of algae. The problem is controlled at the water treatment plant through the use of potassium permanganate. Even though the taste and odor may be apparent, the water is safe to drink.

(1) The City's average pH value is 7.8.

Water, which so many townspeople never think about, having an obedient spring in the kitchen, is really among the most fragile of life's necessities.

- H. V. Morton, the Water of Rome

What are Cryptosporidium and Giardia?

Cryptosporidium and Giardia are microscopic parasites that affect the digestive tracts of humans and animals. Corpus Christi has tested for Cryptosporidium and Giardia in both untreated river water and in treated water. The parasites were never detected.

What are coliforms?

In the water industry, coliform bacteria are used as an indicator of microbial contamination of drinking water because they are easily detected and are found in the digestive tract of warm-blooded animals. While not themselves disease producers, they are often found in association with other microbes that are capable of causing disease. Coliform bacteria are more hardy than many disease-causing organisms; therefore, their absence from water is a good indication that the water is bacteriologically safe for human consumption. Fecal coliform (mostly E-coli), is a portion of the coliform bacteria group originating in the intestinal tract of warm-blooded animals that passes into the environment as feces. Fecal coliform is often used as an indicator of the fecal contamination of a domestic water supply.

Is chlorine a safe disinfectant for drinking water?

Corpus Christi uses chlorine and ammonia to disinfect our drinking water. Chlorine has been used in municipal water treatment since 1908 and is the most effective way to ensure that water stays disinfected as it travels through our distribution system. Chlorine prevents water-borne epidemics such as cholera, typhoid and hepatitis.

Can I test my water at home?

Not in a meaningful way. Simple kits are available to test for some chemicals like chlorine, calcium and lead, but a thorough analysis is not possible with these kits. You can call the USEPA to obtain a list of State Certified Officers for Drinking Water Laboratories.

Does turbidity have any health effects?

Turbidity has no health effects. It is a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (e.i., whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites and some bacteria. These organisms can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Turbidity must be less than 0.5 in 95 percent of the monthly water samples.

Is fluoride added to Corpus Christi's drinking water?

Fluoride, which is a substance added to reduce cavities, is added to our water. The American Dental Association recommends a concentration of 1 part per million. Bottled water may or may not contain fluoride. Corpus Christi's drinking water has an average fluoride value of 0.5 parts per million (ppm).

Is it safe to drink water from a garden hose?

No. A standard vinyl garden hose has chemical substances in it to keep the hose flexible. These chemicals, which get into the water as it goes through the hose, are not good for humans or pets. In addition, the outside threads could be covered with germs.

Why does my water seem cloudy?

Water that is cloudy is often the result of air which is trapped in the water. Once the water is drawn from the faucet and allowed to settle, the water will appear clear. Air bubbles do not affect the quality of water; however, you can report this problem to the Water Department dispatcher at 857-1888.

From the river, through the pipe to your water tap, we deliver safe drinking water.



The information below lists the federally regulated or monitored constituents, which have been found in your drinking water. The U.S. Environmental Protection Agency requires water systems to test for up to 97 constituents. We are pleased to report that during 2002 the water delivered throughout the community **met and even exceeded all state and federal drinking water requirements**. The City of Corpus Christi Water Department routinely monitors its water supply by collecting samples from our reservoir system and from various customer connections within our distribution system.

Regulated Constituents		Corpus Christi's Water Results		USEPA Regulations		Source of Constituent
Year	Constituent	Average	Range ⁽¹⁾	Maximum Contaminant Level	Maximum Contaminant Level Goal	
Inorganics						
2002	Barium (ppm)	0.082	0.082 - 0.082	2	2	- Discharge of drilling waste or from metal refineries; erosion of natural deposits. - Discharge from steel and pulp mills; erosion of natural deposits. - Water additives which promotes strong teeth; erosion of natural deposits. - Runoff from fertilizer use; erosion of natural deposits. - Discharge of drilling waste or from metal refineries; erosion of natural deposits. - Decay of natural and man-made deposits.
2002	Chromium (ppb)	1.67	1.67 - 1.67	100	100	
2002	Fluoride (ppm)	0.53	0.53 - 0.53	4	4	
2002	Nitrate (ppm)	0.5	0.5 - 0.5	10	10	
2002	Selenium (ppb)	4.1	4.1 - 4.1	50	50	
2002	Gross Beta Emitters (pCi/L) (2)	5.5	5.5 - 5.5	50	0	
Unregulated Constituents (524.2)						
2002	Bromoform (ppb)	5.83	0.0 - 17.5	N/A	N/A	- Unregulated contaminant monitoring helps USEPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.
2002	Bromodichloromethane (ppb)	15.77	4.6 - 34.6	N/A	N/A	
2002	Chloroform (ppb)	11.93	5.1 - 16.4	N/A	N/A	
2002	Chlorodibromomethane (ppb)	12.13	1.8 - 32.6	N/A	N/A	
Synthetic Organic Compounds						
2002	Atrazine (ppb)	0.28	0.00 - 0.28	3	3	- Runoff from herbicide used on row crops. - Discharge from pharmaceutical and chemical factories.
2002	Dichloromethane (ppb)	0.45	0.45 - 1.8	5	0	
Turbidity		Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	Turbidity Levels		(As of January 1, 2002, turbidity may not exceed 1 NTU, and must not exceed 0.3 NTU in 95% of daily samples in any month.)
2002	Turbidity (NTU) Plant I (3)	.25	99.30	TT/AL = 0.3		
2002	Turbidity (NTU) Plant II (3)	.34	99.30	TT/AL = 0.3		
Lead and Copper		The 90th Percentile	Number of Sites Exceeding Action	Action Level		- Corrosion of household plumbing system. - Corrosion of household plumbing system.
2002	Lead (ppb)	4.7	0	15		
2002	Copper (ppm)	.127	0	1.3		
Coliforms		Highest Monthly Percentage of Positive Samples	Total Number of Positive Samples	MCL		- Naturally present in the environment. - Naturally present in the environment.
2002	Total Coliform Bacteria	1.2	1	Presence of coliform bacteria in >5% of monthly samples.		
2002	Fecal Coliform and E-coli			A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E.coli positive.		
<small>All coliform positive samples are subject to automatic resampling. In the year 2002, all repeat samples were found to be negative for total fecal coliform contamination.</small>						
Disinfection By-Products				MCL	MCLG	- By-product of drinking water disinfection. - By-product of drinking water disinfection.
2002	Total Trihalomethanes (ppb)	67.1	40.9 - 115.0	80	0	
2002	Total Haloacetic Acids (ppb)	55.0	29.4 - 101.0	60	0	

Terms Used

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

Maximum Contaminant Level (MCL) - The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (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.

mrem/year - Millirem per year (measurement of radiation absorbed by the body).

Footnotes:

- (1) Range of detected levels, indicated for one or more samples collected in 2002.
- (2) 50 pCi/L = 4 mrems/year
- (3) During the period of December 13 through December 26, 2002, individual filter data was monitored and evaluated; however, it was not archived to the system record.

ppm - parts per million. One part per million is equal to one packet of artificial sweetener sprinkled into 250 gallons of iced tea.

pCi/L - Pico-curies per liter (a measure of radioactivity).

ppb - parts per billion. One part per billion is equal to one packet of artificial sweetener sprinkled into 250,000 gallons of iced tea.

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

Turbidity - A measure of the clarity of drinking water. The lower the turbidity, the better the taste of water.

Take a Closer Look Inside a Water Treatment Plant

A water treatment plant is very much like a refinery. We take a raw product - water, put it through a chemical treatment process that includes disinfection, settling and filtration to make it safe to drink. Finally, we deliver it to our customers continuously around the clock for 365 days of the year.

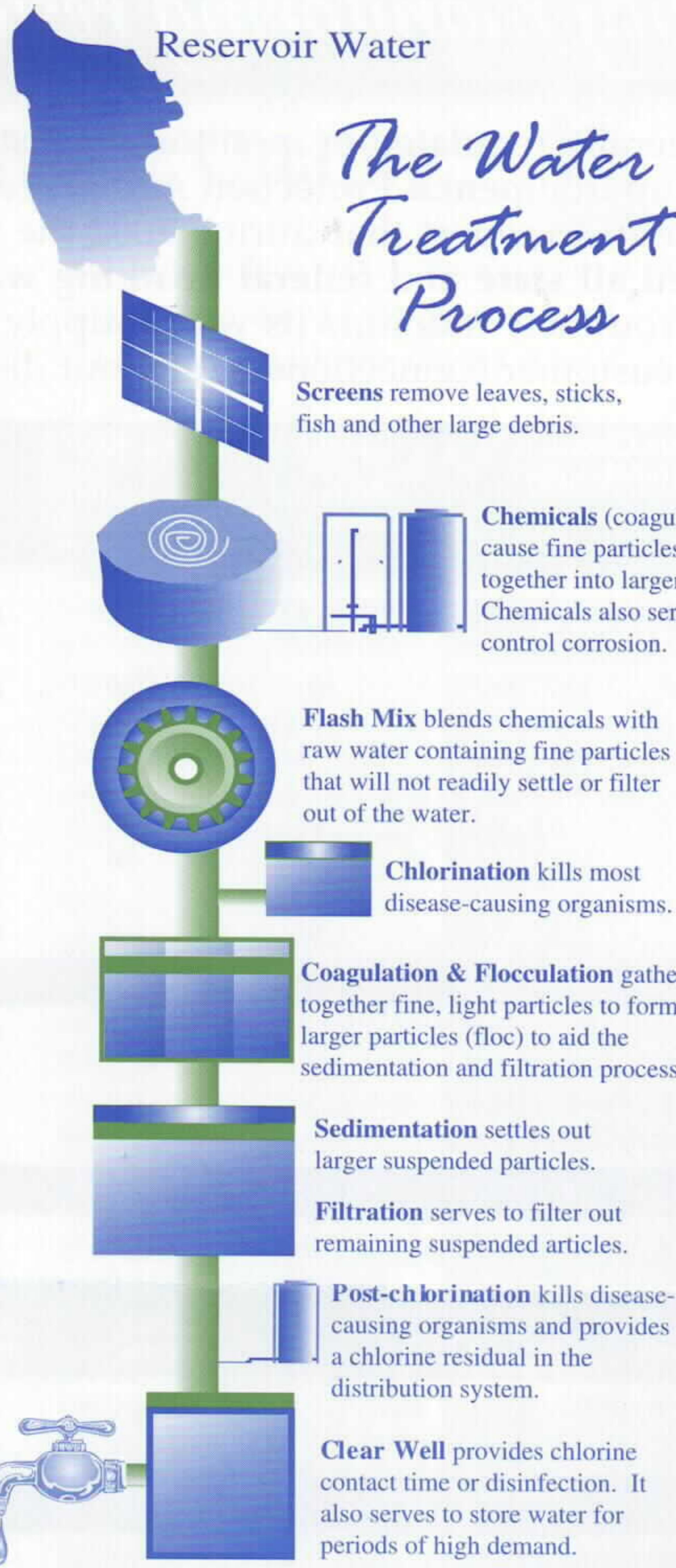
A bucket of water drawn from the river reveals the murky water that we have to work with. The water treatment process removes impurities, kills harmful bacteria, eliminates taste and odors and helps prevent tooth decay. The treatment process takes about 18 hours. During that time, more than 200 tests are conducted on the water.

On occasion, our water may have an unpleasant taste and odor; however, the water is very safe to drink. Taste and odor are aesthetic qualities in our water and do not affect our health. The problem in taste and odor is often caused by such things as algae growth, a change of temperature or high rainfall.

WATER-WISE Ideas

Water conservation can be a hard sell when reservoirs are full. It is important not to forget that the combined reservoir system capacity had dropped below 35% less than one year ago. Our community will always be plagued with recurring drought conditions as part of nature's weather cycle. Water conservation is a habit that we should embrace for a life-time. For a free water saving kit, call the Water Hotline at (361) 857-1600.

1. **Quick Showers.** Keep showers under 5 minutes.
2. **Sweep it Away.** Use a broom, not the hose to clean driveways.
3. **Chill Out.** Cool drinking water in the fridge; don't run the tap.
4. **Slow the Flow.** Install a water-saving showerhead.
5. **Load it Up.** Wash only full loads of dishes and clothes.
6. **Go Xeriscape!** Select water-wise plants featured at local participating nurseries.
7. **Keep Off the Sidewalk.** Water your lawn, not the pavement!
8. **Mulch & Save.** Minimize evaporation with the use of mulch.
9. **Shower Power.** A bucket in the shower can save water for cleanups.
10. **Fix Your Leaks.** A pinhole leak wastes up to 170 gallons a day.
11. **Save the Rain.** Store it for garden watering.
12. **Hot Stuff.** Insulate hot water heaters and pipes to save water & energy.



Special Notice for the Elderly, Infants, Cancer Patients, People with HIV/AIDS or Other Immune Problems

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/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 at 1-800-426-4791.

Total Organic Carbon	
	Range
Raw Water Alkalinity	66 - 119
Raw Water TOC	4.2 - 8.1
Average Percent of TOC Removal from Raw Water	
Plant I	39%
Plant II	40%
TOC Removal Ratio - Plant I	1.00 or better
TOC Removal Ratio - Plant II	1.00 or better
Total organic carbon is naturally occurring in raw and treated water.	

