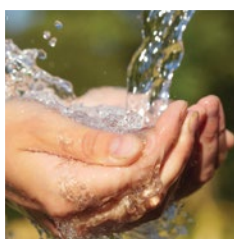
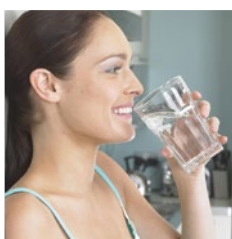
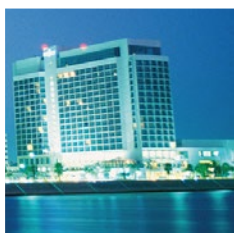
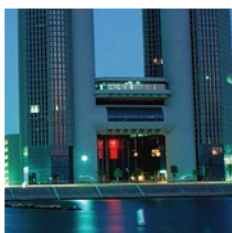
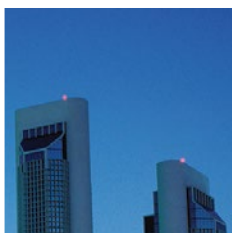
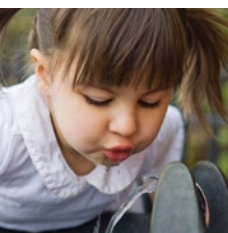




Corpus Christi
Water Department

2012 Annual Water Quality Report

A SUPERIOR RATED WATER SYSTEM





Dear Water Customers,

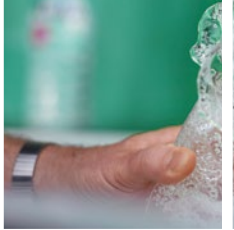
The Corpus Christi Water Department is pleased to present its 2012 Annual Water Quality Report in accordance with the United States Environmental Protection Agency (USEPA) National Primary Drinking Water Regulations, 40 CFR Part 141 Subpart O, which requires all drinking water suppliers to provide the public with an annual statement describing the water supply and the quality of its water.

Highly trained professionals take steps to perform extensive water quality monitoring and testing so that our water supply meets or exceeds all federal and state drinking water requirements. We are mindful of our responsibility to provide you with a safe product at all times.

Corpus Christi's surface water is supplied through a network of three reservoirs, including Choke Canyon and Lake Corpus Christi which are located in the Nueces River Basin. The Nueces River transports water from the two reservoirs where it is pumped to the O. N. Stevens Water Treatment Plant.

Water pumped from Lake Texana through the Mary Rhodes Pipeline is blended at the treatment plant.





Know More About the Source of Your Drinking Water

The City's water is obtained from a combination of water sources. The Atascosa River and the Nueces River supply water to Lake Corpus Christi, while the Frio River supplies water to the Choke Canyon Reservoir. Water from Lake Texana is transported through the 101-mile-long Mary Rhodes Pipeline. Drinking water is produced at the O. N. Stevens Water Treatment Plant.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and aquifers. 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 picks up substances resulting from the presence of animals or from human/industrial activity. Contaminants that may be present in a water source before treatment include: microbes, inorganic contaminants, pesticides, radioactive contaminants and organic chemical contaminants.

A Source Water Susceptibility Assessment of our drinking water sources is available on the Texas Drinking Water Watch website. To view, please visit: <http://dww.tceq.texas.gov/DWW/>. The report describes the susceptibility and types of constituents that may come in contact with our water supply source based on human activities and natural conditions.

A Look Inside the Water Department

The Texas Commission on Environmental Quality requires all Public Water Systems serving 220,001–320,000 customers to take 150 bacteriological samples each month. The City of Corpus Christi falls within this category; however, our monthly goal is 200 bacteriological samples! We are monitoring bacteriological or chemical information every day of the year in order to better serve you.

Did you know that a City customer service representative is available to help you at any time? The City of Corpus Christi call center can be reached at **361-826-CITY (2489)**.

Important Health Information

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at **800-426-4791**.

Este informe incluye información importante sobre el agua potable. Si tiene preguntas o comentarios sobre éste informe en español, favor de llamar al **361-826-1681** para hablar con una persona bilingüe en español o visite www.ctexas.com/government/water.

Cryptosporidium Monitoring

The City monitors for *Cryptosporidium*, a microbial parasite that may be commonly found in surface water. *Cryptosporidium* may come from animal and human feces in the watershed. The result of our monitoring indicated that there may be *Cryptosporidium* in the raw water and/or treated finished water. Although treatment by filtration removes *Cryptosporidium*, it cannot guarantee 100 percent removal. The testing method used cannot determine if the organisms are alive and capable of causing cryptosporidiosis, an abdominal infection with nausea, diarrhea and abdominal cramps that may occur after ingestion of contaminated water.

All Drinking Water May Contain Contaminants

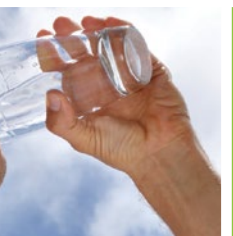
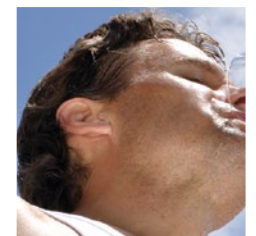
When drinking water meets federal standards, there may not be any health based benefits to purchasing bottled water or point of use devices. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at **800-426-4791**.

Home Plumbing Pipes May Impact Your Exposure to Lead

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. This water supply 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 or at <http://www.epa.gov/safewater/lead>.

Get a FREE Reusable Shopping Bag Just for Attending!

The City of Corpus Christi Water Department (CCWD) will hold a meeting to discuss the contents of the 2012 Annual Water Quality Report. Attendees will receive a free reusable shopping bag. The meeting will be held on July 2, 2013 at 6:00 p.m. at the Water Utilities building located at 2726 Holly Road, Corpus Christi, Texas. Please join us as we share our challenges and our accomplishments. We want to provide our community with the best drinking water. Shopping bags are limited to one per adult customer.



2012 Drinking Water Quality Report

Our drinking water is regulated by the Texas Commission on Environmental Quality (TCEQ). The information that follows lists all of the federally regulated or monitored contaminants which have been found in our drinking water. The U.S. EPA required water systems to test for up to 97 contaminants.

| Inorganic Contaminants | | | | | | |
|------------------------|-------------------------------|---------|-------------|-----|------|--|
| Year | Constituent (Unit of Measure) | Average | Range | MCL | MCLG | Likely Source of Contaminant |
| 2011 | Barium (ppm) | 0.125 | 0.125–0.125 | 2 | 2 | Discharge of drilling waste, erosion of natural deposits |
| 2012 | Fluoride (ppm) | 0.24 | 0.24–0.24 | 4 | 4 | Erosion of natural deposits, water additive |
| 2012 | Nitrate (ppm) | 0.43 | 0.43–0.43 | 10 | 10 | Petroleum/metal discharge, erosion of natural deposits |
| 2011 | Gross Beta Emitters (pCi/L) | 5.4 | 5.4–5.4 | 50 | 0 | Decay of natural/man-made deposits |
| 2011 | Selenium (ppb) | 0.67 | NA | 50 | 50 | Erosion of natural deposits |

| Disinfection By-Products | | | | | | |
|--------------------------|-------------------------------|---------|-----------|-----|------|---|
| Year | Constituent (Unit of Measure) | Average | Range | MCL | MCLG | Likely Source of Contaminant |
| 2012 | Total Trihalomethanes (ppb) | 74.4 | 4.7–234.0 | 80 | NA | By-product of drinking water disinfection |
| 2012 | Total Haloacetic Acids (ppb) | 18.3 | <1.0–47.4 | 60 | NA | By-product of drinking water disinfection |

| Total Organic Carbon | | | | | | |
|----------------------|------------------------------------|---------|-----------|-----|------|--------------------------------------|
| Year | Constituent (Unit of Measure) | Average | Range | MCL | MCLG | Likely Source of Contaminant |
| 2012 | Source Water (ppm) | 7.33 | 6.81–7.84 | NA | NA | Naturally present in the environment |
| 2012 | Plant 1 (ppm) | 5.29 | 4.74–5.96 | NA | NA | Naturally present in the environment |
| 2012 | Plant 2 (ppm) | 5.20 | 4.51–5.96 | NA | NA | Naturally present in the environment |
| 2012 | Plant 1 Removal Ratio (% removal*) | 1.10 | 0.93–1.31 | NA | NA | Naturally present in the environment |
| 2012 | Plant 2 Removal Ratio (% removal*) | 1.40 | 0.93–3.91 | NA | NA | Naturally present in the environment |

Total Organic Carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THM) and haloacetic acids (HAA5) which are reported elsewhere in this report.

*Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

| Organic Contaminants | | | | | | |
|----------------------|-------------------------------|---------|---------|---------|-----|------|
| Year | Constituent (Unit of Measure) | Average | Minimum | Maximum | MCL | MCLG |
| 2012 | Atrazine (ppb) | 0.1 | NA | NA | 3.0 | 3.0 |

| Maximum Residual Disinfectant Level | | | | | | |
|-------------------------------------|-------------------------------|---------|---------|-----|------|---------------------------------------|
| Year | Constituent (Unit of Measure) | Average | Range | MCL | MCLG | Likely Source of Contaminant |
| 2012 | Chloramines (ppm) | 2.35 | 2.2–2.6 | 4.0 | <4.0 | Disinfectant used to control microbes |

| Unregulated Contaminants | | | | | | |
|--------------------------|-------------------------------|---------|-----------|-----|------|---|
| Year | Constituent (Unit of Measure) | Average | Range | MCL | MCLG | Likely Source of Contaminant |
| 2012 | Bromodichloromethane (ppb) | 12.4 | 6.8–32.9 | NA | NA | By-product of drinking water disinfection |
| 2012 | Chloroform (ppb) | 6.7 | 2.4–16.6 | NA | NA | By-product of drinking water disinfection |
| 2012 | Dibromochloromethane (ppb) | 21.6 | 12.3–68.9 | NA | NA | By-product of drinking water disinfection |
| 2012 | Bromoform (ppb) | 36.7 | 9.5–115.6 | NA | NA | By-product of drinking water disinfection |

Unregulated contaminants such as bromodichloromethane, chloroform, dibromochloromethane and bromoform as disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point of distribution.

| Turbidity | | | | | | |
|-----------|-------------------------------|----------------------------|------------------------------------|-----------------|------------------------|------------------------------|
| Year | Constituent (Unit of Measure) | Highest Single Measurement | Lowest % of Samples Meeting Limits | Entry Point MCL | Single Measurement MCL | Likely Source of Contaminant |
| 2012 | Plant 1 (NTU) | 0.28 | 100 | ≤0.3 | 1.0 | Soil runoff |
| 2012 | Plant 2 (NTU) | 0.21 | 100 | ≤0.3 | 1.0 | Soil runoff |

Turbidity has no health effects; however, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Microbial Contaminants

| Year | Constituent (Unit of Measure) | Highest Monthly % of Positive Samples | Unit of Measurement | MCL | Likely Source of Contaminant |
|------|-----------------------------------|---------------------------------------|---------------------|-----|--------------------------------------|
| 2012 | Total Coliform Bacteria | 0.5 | Presence | ** | Naturally present in the environment |
| 2012 | Fecal Coliform and <i>E. coli</i> | 0 | Presence | *** | Naturally present in the environment |

Presence of coliform bacteria in 5% or more of the monthly samples. *A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive.

Fecal Coliform bacteria, in particular *E. coli*, are members of the coliform bacteria group originating in the intestinal tract of warm-blooded animals and are passed into the environment through feces. The presence of fecal coliform bacteria (*E. coli*) in drinking water may indicate recent contamination of the drinking water with fecal material.

Lead and Copper Rule Monitoring

| Year | Constituent (Unit of Measure) | 90th Percentile | No. of Sites Exceeding Action Level | Action Level | Likely Source of Contaminant |
|------|-------------------------------|-----------------|-------------------------------------|--------------|--|
| 2012 | Lead (ppb) | 2.69 | 1 | 15.0 | Corrosion of household plumbing systems, erosion of natural deposits |
| 2012 | Copper (ppm) | 0.065 | 0 | 1.3 | Corrosion of household plumbing systems, erosion of natural deposits |

Unregulated Contaminant Monitoring Rule 2 (UCMR2)

| Year | Screening Survey List 2 | Average | Range | MCL | Likely Source of Contaminant |
|------|--|---------|---------------|-----|---|
| 2009 | Nitrosamines (ppm) <i>N</i> -Nitrosodimethylamine (NDMA) | 0.0069 | 0.0023–0.0147 | NA | Naturally found in water or form when disinfectant is added for treatment |

Secondary and Other Constituents – Not Associated with Adverse Health Effects

Many constituents, such as calcium, sodium, or irons, which are often found in drinking water, can cause taste, color and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not the USEPA. These contaminants are not causes for health concern. Therefore, secondaries are not required to be reported, but they may greatly affect the appearance and taste of your water.

| Year | Constituent | Average | Range | MCL | Likely Source of Contaminant |
|------|---|---------|-------------|----------|--|
| 2012 | Aluminum (ppm) | 0.166 | 0.065–0.868 | 0.05–0.2 | Abundant naturally occurring element |
| 2011 | Bicarbonate (ppm) | 122 | 122–122 | NA | Corrosion of carbonate rocks such as limestone |
| 2012 | Calcium (ppm) | 70.81 | 13–136 | NA | Abundant naturally occurring element |
| 2012 | Chloride (ppm) | 248 | 248–248 | 300 | Abundant naturally occurring element, used in water purification |
| 2012 | Copper (ppm) | 0.004 | 0.002–0.006 | 1.0 | Corrosion of household plumbing systems, erosion of natural deposits |
| 2012 | Hardness as Ca/Mg (ppm) | 203 | 128–268 | NA | Naturally occurring calcium and magnesium |
| 2011 | Magnesium (ppm) | 11.8 | 11.8–11.8 | NA | Abundant naturally occurring element |
| 2012 | Manganese (ppm) | 0.034 | 0.002–0.255 | 0.05 | Abundant naturally occurring element |
| 2011 | Nickel (ppm) | 0.001 | 0.001–0.001 | NA | Erosion of natural deposits |
| 2012 | pH | 7.7 | 7.5–7.9 | >7.0 | Measure of corrosivity of water |
| 2012 | Sodium (ppm) | 135 | 135–135 | NA | Erosion of natural deposits, oil field by-product |
| 2012 | Sulfate (ppm) | 97.2 | 97.2–97.2 | 300 | Naturally occurring, oil field by-product |
| 2012 | Total Alkalinity (ppm) as CaCO ₃ | 130 | 85–168 | NA | Naturally occurring soluble mineral salts |
| 2012 | Total Dissolved Solids (ppm) | 589 | 168–807 | 1,000 | Total dissolved mineral constituents in water |

Definitions

Action level (AL) – The concentration of a contamination which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL) – The highest level of a contamination allowed in drinking water. MCLs are set as close to the MCLG 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.

Maximum Residual Disinfectant Level (MRDL) – The highest level of disinfectant allowed in drinking water. There is convincing

evidence that addition of a disinfectant is necessary for control of microbial contaminants. The limit is the running annual average.

Maximum Residual Disinfectant Level Goal (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.

Most Probable Number (MPN)

Nephelometric Turbidity Units (NTU) – A measure of turbidity in water.

picoliters per liter (pCi/L) – A measure of radioactivity.

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

parts per million (ppm) – One part per million is equal to one packet of artificial sweetener sprinkled into 250 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 clarity of drinking water.



A Reminder to Conserve Water

Most of us take for granted that we will always have enough water. Unfortunately, our area often experiences long periods of drought. We encourage residents to continue to conserve water as we strive to provide the highest water quality in Texas. Conservation is saving tomorrow's water today and conservation begins with each of us.

Visit our web site for conservation tips and information at www.cctexas.com/government/water/conservation.

Want to Know More About Your Water?

For more information on the quality of your drinking water, visit our website at www.cctexas.com/government/water and click on "General Info" on the lower left hand side of the page. Check out our "Guide to Common Water Quality Concerns" informational link in the menu on the left side of the webpage.



"Like" us on Facebook to receive information on upcoming events, major line breaks, water quality information, and more.

www.facebook.com/ccwaterquality

Or call our water quality hotline at **361-826-1234** to speak with someone.



Corpus Christi Water Department

2726 Holly Road, Corpus Christi, TX 78415

www.cctexas.com/government/water

