



2021 ANNUAL DRINKING WATER QUALITY REPORT

A Superior
Rated Water
System

Corpus
Christi Water



Serving the Coastal Bend

PWS ID: TX1780003

Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono 361-826-1800.



DEAR WATER CUSTOMER,

Corpus Christi's Water Utilities is pleased to present our 2021 Annual Water Quality Report. This report is in accordance with the Environmental Protection Agency (EPA) National Primary Drinking Water Regulations, 40 CFR Part 141 Subpart O. This regulation requires all public water systems to provide the public a yearly detail of our water resources and water quality.

Certified and trained professionals proactively monitor and test our water throughout our distribution system. This ensures our water supply meets or exceeds federal and state public water system requirements.

Thousands of Texans in Corpus Christi depend on water to fill their children's baths, cook delicious food, and to be there as the ultimate resource to sustain life. We understand the trust that comes with those who depend on us when they turn on their faucets for safe and quality drinking water. We are committed to honoring this trust.

If you have questions about the content of this report, contact the city of Corpus Christi Water Quality Hotline at (361) 826-1234.

PLEASE SHARE INFORMATION found throughout this report with all other people who use this water, especially those who may not have received this notice directly (e.g., people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or by distributing copies by hand or mail.

PUBLIC PARTICIPATION

Corpus Christi's Mayor and City Council meet the second, third, and fourth Tuesday of each month. Information about public participation, public comment, and input can be found by visiting www.cctexas.com/departments/mayor-and-city-council.

DEFINITIONS OF THE DRINKING WATER QUALITY REPORT TABLE

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

Level 1 Assessment – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria were found.

Level 2 Assessment – A very detailed study of the water system to identify potential problems and determine (if possible) why an *Escherichia coli* (E. coli) maximum contaminant level (MCL) violation has occurred and/or why total coliform bacteria were found on multiple occasions.

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is 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 a disinfectant allowed in drinking water; there is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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. The presence of small amounts of some contaminants, including bottled water, may reasonably be expected to contain at least one or more of these contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact Corpus Christi's Water Quality Hotline at 361-826-1234. More information about contaminants and potential health effects can also be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

Not Applicable (NA) – Equivalent to micrograms per liter (µg/L).

Parts Per Billion (ppb) – Equivalent to micrograms per liter (µg/L).

Parts Per Million (ppm) – Equivalent to milligrams per liter (mg/L).

Picocuries Per Liter (pCi/L) – A measure of radioactivity.

Secondary Maximum Contaminant Level (SMCL) – Non-enforceable guidelines regarding contaminants that may cause aesthetic effects in drinking water but do not pose a health risk.

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.

IMPORTANT HEALTH INFORMATION

Cryptosporidium is a parasite that may be found in untreated surface water. Treatment facilities are required to meet removal standards during the treatment process to ensure drinking water is safe for consumption. Although filtration removes *Cryptosporidium*, it cannot guarantee 100 percent removal. Our previous monitoring indicated the presence of these organisms in our source water in one out of 24 samples. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection with symptoms such as nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the infection within a few weeks.

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.

ALL DRINKING WATER MAY CONTAIN CONTAMINANTS

Treatment of water is regulated by the EPA to ensure it is safe to drink. 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. Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact Corpus Christi's Water Quality Hotline at 361-826-1234. More information about contaminants and potential health effects can also be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

UNDERSTAND YOUR WATER SOURCES

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 and through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material. Water can pick up substances resulting from the presence of animals or from human and/or industrial activity. Contaminants that may be present in a water source before treatment include microbial, organic, pesticide and herbicide, radioactive, and inorganic chemical contaminants.

Corpus Christi's water is obtained from a combination of water sources. The Atascosa River and the Nueces River supply water to Lake Corpus Christi, and the Frio River supplies water to Choke Canyon Reservoir. These sources flow down the Nueces River where they are then treated at the O. N. Stevens Water Treatment Plant. Water from the Lower Colorado River is transported through the Mary Rhodes Phase II Pipeline where it meets Lake Texana. Water from Lake Texana is then added and transported through the Mary Rhodes Phase I Pipeline to make the 101-mile journey to the O.N. Stevens Water Treatment Plant.



A Source Water Susceptibility Assessment of our drinking water is available on the Texas Drinking Water Watch website. To view, please visit dww2.tceq.texas.gov/DWW/. The report shows the susceptibility and types of constituents that may come in contact with our water supply source based on human activities and natural conditions.

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. Corpus Christi Water Utilities 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 thirty 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 www.epa.gov/safewater/lead.

2021 DRINKING WATER QUALITY REPORT

Our drinking water is regulated by the Texas Commission on Environmental Quality (TCEQ). The information that follows lists all the federally regulated or monitored contaminants which have been found in our drinking water. The data presented in this report is from the most recent testing done in accordance with the regulations.

INORGANIC CONTAMINANTS							
Year	Constituent (Unit of Measure)	Highest Average	Highest Single Measurement	Range	MCL [AL]	MCLG	Likely Source of Contaminant
2021	Barium (ppm)	0.111	0.111	NA	2	2	Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits
2021	Chlorite (ppm)	0.64	0.73	0.33–0.73	1.00	0.80	By-product of drinking water disinfection
2021	Copper (ppm)	0.0030	0.0030	NA	[1.3]	1.3	Corrosion of household plumbing systems; erosion of natural deposits
2021	Cyanide (ppb)	125*	70	0–70	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
2021	Fluoride (ppm)	0.5	0.5	NA	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
2021	Nitrate (ppm)	0.71	0.71	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
2021	Selenium (ppb)	3.9	3.9	NA	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

*Calculated as a running annual average: the average of four consecutive quarterly averages, which typically include a portion of the previous year's results.

ORGANIC CONTAMINANTS							
Year	Constituent (Unit of Measure)	Highest Average	Highest Single Measurement	Range	MCL	MCLG	Likely Source of Contaminant
2021	Atrazine (ppb)	0.11	0.11	NA	3	3	Runoff from herbicide used on row crops

DISINFECTION BY-PRODUCTS							
Year	Constituent (Unit of Measure)	Highest Yearly Average	Range	MCL	MCLG	Likely Source of Contaminant	
2021	Total Trihalomethanes (ppb)	56.7	34.8–75.2	80	NA	By-product of drinking water disinfection	
2021	Total Haloacetic Acids (ppb)	29.2	9.5–54.7	60	NA	By-product of drinking water disinfection	

The locational running annual average is a health concern at levels above the MCL. Some people who drink water containing total trihalomethanes (TTHMs) in excess of the MCL over many years may experience problems with their liver, kidney, or central nervous systems, and may have an increased risk of getting cancer.

TOTAL ORGANIC CARBON							
Year	Location (Unit of Measure)	Average	Range	Removal Ratio (TT)	MCLG	Likely Source of Contaminant	
2021	Source Water (ppm)	5.2	4.28–7.73	NA	NA	Naturally present in the environment	
2021	Plant 1 (ppm)	3.4	2.81–4.85	NA	NA	Naturally present in the environment	
2021	Plant 2 (ppm)	3.4	2.81–4.85	NA	NA	Naturally present in the environment	
2021	Plant 1 Removal Ratio (% removal**)	1.0	0.86–1.37	≥1.0	NA	Naturally present in the environment	
2021	Plant 2 Removal Ratio (% removal**)	1.0	0.86–1.37	≥1.0	NA	Naturally present in the environment	

Total Organic Carbon (TOC) has no health effects. The water 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 (TTHMs) and haloacetic acids (HAA5s) 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.

MAXIMUM RESIDUAL DISINFECTANT LEVEL							
Year	Constituent (Unit of Measure)	Highest Average	Range	MRDL	MRDLG	Likely Source of Contaminant	
2021	Chloramines (ppm)	3.24	1.08–4.67	4.0	4.0	Water additive used to control microbes	

TURBIDITY							
Year	Location (Unit of Measure)	Highest Single Measurement	Lowest % of Samples Meeting Limits	Entry Point Limit (TT)	Single Measurement Limit (TT)	Likely Source of Contaminant	
2021	Plant 1 (NTU)	0.86	91.7	≤0.3	1.0	Soil runoff	
2021	Plant 2 (NTU)	0.86	91.7	≤0.3	1.0	Soil runoff	

Turbidity has no health effects; however, turbidity can interfere with disinfection and provide a medium for microbial growth. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Like more than 1,000 utilities in Texas, Winter Storm Uri had a significant impact on water services. During February 2021, the O.N. Stevens Water Treatment Plant experienced more than 5% of monthly combined filter effluent samples exceeding 0.3 NTU and low disinfection contact time greater than four consecutive hours. This was due to infrastructure damage to chemical feed lines from record-breaking prolonged freezing temperatures. Temporary systems were installed to allow thawing and repair of the primary feed system.

CRYPTOSPORIDIUM MONITORING							
Year	Constituent	Average Concentration	Unit of Measurement	MCLG	Likely Source of Contaminant		
2019	<i>Cryptosporidium</i>	0.01	Total (Oo) cysts/L	0	Human and animal fecal waste		

Cryptosporidium is of great concern in public water systems that treat surface water for drinking water sources. Resistant to disinfectants, *Cryptosporidium* can cause gastrointestinal illness in individuals who consume contaminated water. The Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) is required by Congress in order to increase protection from microbial contaminants such as *Cryptosporidium*. Under this rule, water systems must conduct monthly source water *Cryptosporidium* sampling over a two year span. The city of Corpus Christi completed sampling in July of 2019.

MICROBIOLOGICAL CONTAMINANTS							
Year	Constituent	Highest Monthly % of Positive Samples	Unit of Measurement	MCL	Likely Source of Contaminant		
2021	Total Coliform Bacteria	3.94	Presence	†	Naturally present in the environment		

Total coliform bacteria occur naturally in the environment and are used as an indicator for other, potentially harmful, bacteria that could also be present. †Presence of coliform bacteria in 5% or more of the monthly samples.

Year	Constituent	Total Number of Positive Samples†	Unit of Measurement	MCL	Likely Source of Contaminant
2021	Fecal Coliform and <i>E. coli</i>	2	Presence	††	Human and animal fecal waste

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. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, and other symptoms. They may pose a special health risk for infants, young children, elderly, and people with severely compromised immune systems. †A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive. ††All subsequent samples were not positive for *E. coli* or total coliforms, therefore, no violation occurred. The positive samples were likely due to a processing error.

LEAD AND COPPER MONITORING RULE							
Year	Constituent (Unit of Measure)	90th Percentile	Number of Sites Exceeding AL	AL	Likely Source of Contaminant		
2020	Lead (ppb)	2.4	0	15.0	Corrosion of household plumbing systems; erosion of natural deposits		
2020	Copper (ppm)	0.051	0	1.3	Corrosion of household plumbing systems; erosion of natural deposits		

RADIOACTIVE CONTAMINANTS							
Year	Constituent (Unit of Measure)	Highest Single Measurement	Range	MCL	MCLG	Likely Source of Contaminant	
2020	Gross Beta Particle Activity (pCi/L)	7.0	NA	50.0	0	Decay of natural and man-made deposits	

UNREGULATED CONTAMINANTS							
Year	Constituent (Unit of Measure)	Highest Average	Range	MCL	MCLG	Likely Source of Contaminant	
2021	Bromodichloromethane (ppb)	15.0	5.3–22.1	NA	NA	By-product of drinking water disinfection	
2021	Bromoform (ppb)	16.8	1.9–27.9	NA	NA	By-product of drinking water disinfection	
2021	Chloroform (ppb)	7.5	1.3–19.1	NA	NA	By-product of drinking water disinfection	
2021	Dibromochloromethane (ppb)	18.3	6.9–27.3	NA	NA	By-product of drinking water disinfection	

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

UNREGULATED CONTAMINANT MONITORING RULE 4 (UCMR4)							
Year	Constituent (Unit of Measure)	Average	Range	MRL	Likely Source of Contaminant		
2018	Bromochloroacetic Acid (ppb)	13.2	6.0–16.0	NA	By-product of drinking water disinfection		
2018	Bromodichloroacetic Acid (ppb)	2.2	1.4–2.9	NA	By-product of drinking water disinfection		
2018	Chlorodibromoacetic Acid (ppb)	1.2	0.3–1.9	NA	By-product of drinking water disinfection		
2018	Dibromoacetic Acid (ppb)	9.7	1.1–13.5	NA	By-product of drinking water disinfection		
2018	Dichloroacetic Acid (ppb)	12.9	5.5–20.7	NA	By-product of drinking water disinfection		
2018	HAA5 (ppb)	25.7	15.6–28.8	NA	By-product of drinking water disinfection		
2018	HAA6Br (ppb)	27.2	9.0–35.5	NA	By-product of drinking water disinfection		
2018	HAA9 (ppb)	42.4	24.7–49.4	NA	By-product of drinking water disinfection		
2018	Manganese (ppb)	0.7	0.0–1.3	0.4	Naturally occurring element		
2018	Monobromoacetic Acid (ppb)	1.0	0.0–1.4	NA	By-product of drinking water disinfection		
2018	Trichloroacetic Acid (ppb)	2.3	1.1–4.0	NA	By-product of drinking water disinfection		

SECONDARY AND OTHER CONSTITUENTS – NOT ASSOCIATED WITH ADVERSE HEALTH EFFECTS							
Year	Constituent (Unit of Measure)	Highest Average	Range	SMCL	Likely Source of Contaminant		
2021	Aluminum (ppm)	0.166	NA	0.2	Abundant naturally occurring element		
2021	Bicarbonate (ppm)	185	NA	NA	Corrosion of carbonate rocks such as limestone		
2021	Calcium (ppm)	72.7	NA	NA	Abundant naturally occurring element		
2021	Chloride (ppm)	162	NA	300	Abundant naturally occurring element; used in water purification		
2021	Hardness as CaCO ₃ (ppm)	245	NA	NA	Naturally occurring calcium and magnesium		
2021	Magnesium (ppm)	15.3	NA	NA	Abundant naturally occurring element		
2021	Manganese (ppb)	1.40	NA	50	Naturally occurring element		
2021	Nickel (ppm)	0.0024	NA	NA	Erosion of natural deposits		
2021	Potassium (ppm)	8.13	NA	NA	Abundant naturally occurring element		
2021	Sodium (ppm)	107	NA	NA	Erosion of natural deposits; oil field by-product		
2021	Sulfate (ppm)	100	NA	300	Naturally occurring; oil field by-product		
2021	Total Alkalinity (ppm)	152	NA	NA	Naturally occurring soluble mineral salts		
2021	Total Dissolved Solids (ppm)	579	NA	1,000	Total dissolved mineral constituents in water		

Many constituents found in drinking water can cause taste, color, and odor problems. These constituents are not causes for health concern. Therefore, secondaries are not required to be reported in this document, but they may affect the appearance and taste of your water.

WATER LOSS

In the water loss audit report submitted to the Texas Water Development Board for the time period of January 1, 2021 to December 31, 2021, we produced 27,078,470,000 gallons of treated water. We reported an estimated water loss of 1,389,995,797 gallons or 5.44%. This refers to the amount of water lost due to leaks, water line breaks, or other non-revenue water use.

WATER CONSERVATION

Since the City first started supplying its residents with water in the 1890s, the region has experienced several periods of drought. Over the years, supplies have been added and conservation measures have been strengthened to ensure water security for the residents and businesses of the region. However, with the variability of weather patterns in South Texas and a continually growing population, it is critical that the City plans for future drought conditions. We encourage residents to continue to conserve water as we aspire to provide the highest water quality in Texas.

A little bit goes a long way. Visit our website to learn more about water conservation including xeriscape, drought contingencies, and water efficiency by visiting www.cctexas.com/conservation.

UTILITY BILLING OFFICE

If you have questions relating to water charges on your utility bill, specialists are available to help **Monday through Friday, 8 a.m. to 5 p.m.** Find answers by calling **361-826-CITY (2489)**, or by emailing **UBO@cctexas.com**.



www.cctexas.com/departments/water-department



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