

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2020



Photo courtesy of Richard Chapman

Presented By
Nueces County WCID 4



Our Mission Continues

Once again, we are pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2020. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education, while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Source Water Assessment

The TCEQ has completed a Source Water Assessment for all drinking water systems that own their sources. The report describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The system(s) from which we purchase our water received the assessment report. For more information on source water assessments and protection efforts at our system, contact Scott Mack, District Manager, at (361) 749-5201.

Source Water Assessment <https://www.tceq.texas.gov/gis/swaview>



Lead in Home Plumbing

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 we 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Where Does My Water Come From?



All of the drinking water supplied by the Nueces County Water Control and Improvement District No. 4 comes from a surface water system consisting of Lake Corpus Christi, Choke Canyon Reservoir, and Lake Texana. Water stored in Lake Corpus Christi and Choke Canyon makes its way down the Nueces River to intake pumps at Calallen. As water travels over the land's surface and down the river, it dissolves naturally occurring minerals and picks up other contaminants. Untreated water may contain bacteria, viruses, salts, and various organic chemicals.

The untreated river water is moved by pipeline either to the O.N. Stevens Water Treatment Plant near Calallen or to the San Patricio Municipal Water District treatment plant near Ingleside. Lake Texana water is pumped through the 101-mile Mary Rhodes Pipeline directly to the O.N. Stevens treatment plant, where it is blended with water from the Nueces River.

The Nueces County Water Control and Improvement District No. 4 purchases treated water from San Patricio MWD, with our pumping station located in Aransas Pass, and from Corpus Christi, with the pumping station located just north of Mustang Island State Park on Highway 361. Both treatment plants purify water through a process of chemical treatment, settling, filtration, and disinfection. Water treatment chemicals are added to remove impurities, kill harmful bacteria, eliminate tastes and odors, and help prevent tooth decay. The same quality drinking water is then delivered to all residential, commercial, and industrial customers.

Drinking Water Watch: <https://dww2.tceq.texas.gov/DWW/>

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.



What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, don't use any container with markings on the recycle symbol showing "7 PC" (that's code for BPA). You could also consider using stainless steel or aluminum with BPA-free liners.

How much emergency water should I keep?

Typically, 1 gallon per person per day is recommended. For a family of four, that would be 12 gallons for 3 days. Humans can survive without food for 1 month, but can only survive 1 week without water.

How long can I store drinking water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria prior to filling up with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

How long does it take a water supplier to produce one glass of drinking water?

It could take up to 45 minutes to produce a single glass of drinking water.

How many community water systems are there in the U.S.?

About 53,000 public water systems across the United States process 34 billion gallons of water per day for home and commercial use. Eighty-five percent of the population is served by these systems.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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 can acquire naturally occurring minerals, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban storm-water 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, urban storm-water runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and which may also come from gas stations, urban storm-water runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

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 our business office. For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

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We remain vigilant in
delivering the best-quality
drinking water
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Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, inorganic, volatile, organic, or synthetic organic contaminants. The tables show only these contaminants that were detected in the water. The state requires us to monitor for certain substances less often than once per year because the concentrations of the substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

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The percentage of Total Organic Carbon (TOC) removal was measured each month, and the system met all TOC removal requirements set.

REGULATED SUBSTANCES											
				Nueces County WCID #4		Corpus Christi		San Patricio MWD			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2020	3	3	NA	NA	0.21	0.00–0.60	0.25	NA	No	Runoff from herbicide used on row crops
Barium (ppm)	2020	2	2	NA	NA	0.108	0.104–0.108	0.0739	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chloramines (ppm)	2015	[4]	[4]	2.55	0.70–4.08	NA	NA	NA	NA	No	Water additive used to control microbes
Cyanide (ppb)	2020	200	200	NA	NA	143	100–190	NA	NA	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Fluoride (ppm)	2020	4	4	NA	NA	0.71	0.59–0.71	0.695	0.295–1.28	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories
Cyanide (ppb)	2020	200	200	NA	NA	143	100–190	NA	NA	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Gross Beta Emitters (pCi/L)	2020	50	0	NA	NA	7.0	NA	9.70 ¹	NA	No	Decay of natural and man-made deposits
Nitrate (ppm)	2020	10	10	1	0.23–0.6	0.95	0.21–0.95	2.68	1.7–3.1	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2020	80	NA	54	33.4–68.4	NA	NA	25.8	4.1–48	No	By-product of drinking water disinfection
Turbidity ² (NTU)	2020	TT	NA	NA	NA	0.18	0.03–0.18	0.2	0.03–0.2	No	Soil runoff

Tap Water Samples Collected for Copper and Lead Analyses from Sample Sites throughout the Community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2019	1.3	1.3	0.22	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2019	15	0	2.1	1/30	No	Lead services lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Corpus Christi			San Patricio MWD		VIOLATION	TYPICAL SOURCE	
		SCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED			RANGE LOW-HIGH
Aluminum (ppm)	2020	200	NA	0.217	0.131–0.217	NA	NA	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2020	300	NA	140	112–166	147	104–198	No	Runoff/leaching from natural deposits
Manganese (ppm)	2020	50	NA	NA	NA	0.002	NA	No	Leaching from natural deposits
pH (Units)	2020	>7.0	NA	NA	NA	7.22	6.9–7.5	No	Naturally occurring
Sulfate (ppm)	2020	300	NA	87	75–97	52	39–64	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2020	1,000	NA	540	488–571	467	264–566	No	Runoff/leaching from natural deposits

UNREGULATED AND OTHER SUBSTANCES³

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Corpus Christi		San Patricio MWD		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Bromodichloromethane (ppb)	2020	6.6	6.3–6.9	4.05	0.5–12.0	By-product of drinking water disinfection
Bromoform (ppb)	2020	5.5	2.5–8.4	12.0	2.6–23.0	By-product of drinking water disinfection
Chloroform (ppb)	2020	2.5	2–2.9	1.13	0.5–3.2	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2020	8.7	6.3–11	8.71	1.5–17.0	By-product of drinking water disinfection
Hardness (ppm)	2020	234	102–240	206	168–252	Naturally occurring calcium and magnesium

¹ Sampled in 2018.

² Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality and the effectiveness of disinfectants.

³ 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.

Information on the Internet

The U.S. EPA (<https://goo.gl/TFAMKc>) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, TCEQ has a Web site (<https://goo.gl/vNHNJN>) that provides complete and current information on water issues in Texas, including valuable information about our watershed.

QUESTIONS?

For more information about this report, or for any questions related to your drinking water, please call Scott Mack, District Manager, at (361) 749-5201.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs 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. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SCL (Secondary Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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

