

CITY OF BOERNE  
PO Box 1677  
447 N. Main St.  
Boerne, TX 78006



# 2021 Annual Drinking Water Quality Report

For the period January 1, 2021-December 31, 2021

(830) 248-1538

Consumer Confidence Report

## **Our Drinking Water Meets or Exceeds All Federal (EPA) Drinking Water Requirements.**

This report is a summary of the quality of the water we provide our customers. The analysis was made by using the data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in the attached pages. We hope this information helps you become more knowledgeable about what's in your drinking water.

### **Public Participation Opportunity**

**Date:** Wednesday, August 17, 2022  
**Time:** 5:00 to 5:30 p.m.  
**Location:** Boerne Council Chambers  
City Hall  
447 N. Main St.  
Boerne, Texas  
**Phone Number:** 830-248-1538

To learn about future public meetings (concerning your drinking water) or to request to schedule one, please call us.

### **En Español**

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (830) 249-9511 para hablar con una persona bilingüe en español.

[www.boerne-tx.gov](http://www.boerne-tx.gov)



# 2021 Annual Drinking Water Quality Report

For the period January 1, 2021- December 31, 2021

***This report is intended to provide you with important information about your drinking water and the efforts made by the City of Boerne to provide safe drinking water.***

**(830) 248-1538**

## **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 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 before treatment 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 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 runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

## **Where do we get our drinking water?**

The City of Boerne Water System (TX1300001) obtains its drinking water from SURFACE AND GROUND water sources. In 2021, approximately 57% of our water was purchased from the Western Canyon Regional Water Supply Project (WCRWSP) sponsored by the Guadalupe-Blanco River Authority. The source of water for the WCRWSP is CANYON LAKE. About 22% of our water came from BOERNE LAKE, another surface water source. The remaining 21% of our water came from groundwater wells in the TRINITY GROUP aquifers. These aquifers are known locally as the Cow Creek, Lower Glen Rose and Upper Glen Rose aquifers. Thus, 21% of our water came from groundwater sources and 79% came from surface water sources in 2021.

The TCEQ completed an assessment of our source water and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for our water system are based on this susceptibility and previous sample data. Any detections of these contaminants may be found in this Water Quality Report. For more information on source water assessments and protection efforts at our system, please contact the City of Boerne at 830-248-1538.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: <http://www.tceq.texas.gov/gis/swaview>

Further details about sources and source water assessments are available in Drinking Water Watch at the following URL: <http://dww2.tceq.texas.gov/DWW/>

## **SPECIAL NOTICE**

**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.**

**DEFINITIONS**

The following table contains scientific terms and measures, some of which may require explanation.

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

**Level 2 Assessment** A Level 2 assessment is 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 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 Contaminant Level (MCL)** 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.

**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.

**Maximum Residual Disinfectant Level Goal (MRDLG)** The level of 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.

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

**Action Level Goal (ALG)** The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

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

**Average Level:** Regulatory compliance with some MCLs are based on running annual average or monthly samples.

**ABBREVIATIONS**

**NTU** – Nephelometric Turbidity Units (a measure of turbidity)

**MFL** – million fibers per liter (a measure of asbestos)

**pCi/L** – picocuries per liter (a measure of radioactivity)

**ppm** – parts per million, or milligrams per liter (mg/L), or one ounce in 7,350 gallons of water

**ppb** – parts per billion, or micrograms per liter (µg/L), or one ounce in 7,350,000 gallons of water

**ppq** – parts per quadrillion or pictograms per liter (pg/L)

**ppt** – parts per trillion, or nanograms per liter

**mrem/yr** – millirem per year (a measure of radiation)

**N/A:** Not applicable.

**ALL drinking water may contain contaminants.**

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.

Contaminants found in drinking water may cause taste, color or odor problems. 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 EPA's Safe Drinking Water Hotline (800-426-4791). For more information on the taste, odor or color of your drinking water, please contact the City of Boerne at 830-249-9511.

**About The Following**

The information that follows lists all the federally regulated or monitored contaminants which have been found in your drinking water. The U.S. EPA requires water systems to test for up to 97 contaminants.

**Regulated Contaminants**

**Total Coliform**

Total coliform bacteria are used as indicators of microbial contamination of drinking water because testing for them is easy. While not disease-causing organisms themselves, 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 microbiologically safe for human consumption.

MCLG	Total Coliform Maximum Contaminant Level*	Highest Monthly Number of Positive Samples	Fecal Coliform or E. Coli Maximum Contaminant Level	Total Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample	1	0	0	N	Naturally present in the environment.

\*Two or more coliform found samples in any single month.

## Regulated Contaminants (cont.)

### *Turbidity*

Turbidity has no health effects. Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration.

#### **Results on Self-supplied Water (Water from Boerne City Lake) - 2021**

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.24 NTU	N	Soil Runoff.
<b>95PT</b> (95% of the monthly measurement of Turbidity). 100% of measurements were below the limit of 0.3 NTU.				
Lowest monthly % meeting limit	0.3 NTU	100%	N	Soil Runoff.
<b>Additional Results on Purchased Surface Water (Water from Canyon Lake) - 2021</b>				
Highest single measurement	1 NTU	0.15	N	Soil Runoff.
<b>95PT</b> (95% of the monthly measurement of Turbidity). 100% of measurements were below the limit of 0.3 NTU.				
Lowest monthly % meeting limit	0.3 NTU	100%	N	Soil Runoff.

### *Inorganic Contaminants*

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Unit of Measure	Violation	Likely Source of Contamination
2021	Barium	0.0218	0.0218-0.0218	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
2021	Fluoride*	0.1	0.13-0.13	4	4	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.

\*Fluoride compounds are salts that form when the element, fluorine, combines with minerals in soil or rocks. The City of Boerne does not add fluoride to its drinking water.

2021	Nitrate (measured as Nitrogen)	3	0-2.89	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
2021	Selenium	0	0	50	50	ppb	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

## Regulated Contaminants (cont.)

### *Disinfectants and Disinfection By-Products*

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units of Measure	Violation	Likely Source of Contamination
2021	Haloacetic Acids (HAA5)	27	11.4 - 34.3	No goal for the total	60	ppb	N	Byproduct of drinking water disinfection.
2021	Total Trihalomethanes (TTHm)	63	34.5 - 81.5	No goal for the total	80	ppb	N	Byproduct of drinking water disinfection.

The Range of Levels Detected is based on individual samples, whereas the Highest Level Detected and MCL are based on the averages of individual samples. No violations occurred because the Highest Level Detected averages did not exceed MCL.

Some people who drink trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

### *Lead and Copper*

Date Sampled	Contaminant	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units of Measure	Violation	Likely Source of Contamination
2019	Copper	1.3	1.3	0.187	0	ppm	N	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.
2019	Lead	0	15	2	0	ppb	N	Corrosion of household plumbing systems; erosion of natural deposits.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at the homes in the community as a result of materials used in your home's plumbing. When your water has been sitting for several hours, you can minimize the potential for exposure by flushing your tap for 30 seconds to 2 minutes before using the water for drinking or cooking. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Additional information is available from the Safe Drinking Water Hotline at (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.

**The EPA allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or our system is not considered vulnerable to this type of contamination. Some of our data, though representative, are more than one year old.**

### *Synthetic Organic Contaminants Including Pesticides and Herbicides*

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Unit of Measure	Violation	Likely Source of Contamination
2021	Dalapon	<0.01	<0.01	200	200	ppb	N	Runoff from herbicide used on rights of way.

<b>Radioactive Contaminants</b>								
Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Unit of Measure	Violation	Likely Source of Contamination
2019	Beta/photon emitters	6.6	0 - 6.6	0	50	pCi/L*	N	Decay of natural and man-made deposits.
*EPA considers 50pCi/L to be the level of concern for beta particles.								
2019	Gross Alpha excluding radon and uranium	6	0 – 6	0	15	pCi/L	N	Erosion of natural deposits.
2019	Combined Radium 226/228	1.5	0 - 1.5	0	5	pCi/L	N	Erosion of natural deposits.
2019	Uranium	1.7	1.1 - 1.7	0	30	ug/l	N	Erosion of natural deposits.

### **Secondary and Other Constituents Not Regulated (No associated adverse health effects.)**

Many constituents (such as calcium, sodium, or iron) 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 EPA. These constituents are not causes for health concern. Therefore, secondaries are not required to be reported in this document but they may greatly affect the appearance and taste of your water.

Collection Date	Constituents	Average Level	Minimum Level	Maximum Level	Secondary Limit	Unit of Measure	Likely Source of Constituent
2021	Calcium	38.9	38.9	38.9	NA	ppm	Abundant naturally occurring element.
2021	Chloride	21	21	21	300	ppm	Abundant naturally occurring element; used in water purification; byproduct of oil field activity.
2021	Hardness as Ca/Mg	N/A	N/A	N/A	NA	ppm	Naturally occurring calcium and magnesium.
2021	Magnesium	15.4	15.4	15.4	NA	ppm	Abundant naturally occurring element.
2021	Manganese	<0.001	<0.001	0.0024	0.05	ppm	Abundant naturally occurring element.
2021	Nickel	0.0011	0.0011	0.0011	NA	ppm	Abundant naturally occurring element.
2021	Sodium	10.3	10.3	10.3	NA	ppm	Erosion of natural deposits; byproduct of oil field activity.
2021	Sulfate	37	37	37	300	ppm	Naturally occurring; common industrial byproduct; byproduct of oil field activity.
2021	Total Alkalinity as CaCO3	138.5	119	152	NA	ppm	Naturally occurring soluble mineral salts.
2021	Total Dissolved Solids	196	196	196	1000	ppm	Total dissolved mineral constituents in water.

**Maximum Residual Disinfection Level**

Systems must complete and submit disinfection data on the Surface Water Monthly Operations Report (SWMOR). On the Annual Water Quality Report, the system must provide disinfectant type, minimum, maximum and average levels.

Year	Disinfectant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Chemical
2021	Free Chlorine	1.03	0.94	1.12	4.0	<4.0	ppm	Disinfectant used to control microbes.

**Fecal Coliform**

Reported monthly tests found no fecal coliform bacteria.

**Total Organic Carbon**

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

**Water Loss**

In the water loss audit submitted to the Texas Water Development Board for the time period of January - December 2021, the City of Boerne water system lost an estimated 83,427,347 gallons of water. This is 9.1% of all water taken into the system. Water loss from a system occurs, primarily, due to leaks and line breaks, customer meter inaccuracy, data handling discrepancy and unauthorized consumption. If you have any questions about the water loss audit, you may call: (830) 248-1538.

**For more information regarding this report contact:  
Crystal Barrera (830) 248-1538**

**Este reporte incluye información importante sobre el agua para tomar.  
Para asistencia en español, favor de llamar al telefono (830) 248-1538.**