2002 Water Quality Report

San Antonio Water System

Public water systems, like San Antonio Water System (SAWS), are required by law to report every year on the type and quantity of substances that are in our water. This law – the Safe Drinking Water Act (SDWA) that was amended by Congress in 1996 – has specific guidelines concerning drinking water, as well as methods of testing, and how often testing is conducted. The data reported in this Water Quality Report was recorded within the last five years according to SDWA regulations.

The Environmental Protection Agency (EPA) administers the SDWA to make sure tap water is safe to drink by restricting the presence of contaminants in public water systems. Bottled water, on the other hand, is regulated by the Food and Drug Administration (FDA) which limits contaminants for similar protection to the public health. In addition to SAWS and the Edwards Aquifer Authority conducting testing on the purity of water from the Edwards Aquifer, the Texas Natural Resource Conservation Commission (TNRCC) is also reviewing the Edwards as part of its assessment of all of Texas' drinking water sources. The source water assessment process will be completed in the near future.

Our Commitment To You

SAWS has a long-term commitment to providing our customers with excellent drinking water which has been proven through the years. Since 1936, SAWS has been rated as a superior water system by the TNRCC.

Your confidence in San Antonio's water supply is important to us at SAWS. We are committed to providing reliable, quality water. We are also committed to providing leadership in managing San Antonio's water resources.

Where Our Water Comes From

Water drawn from rivers and lakes is called "surface water." Water from wells is called "ground water." In San Antonio, our drinking water is currently all derived as ground water from the Edwards Aquifer. The aquifer is divided into three segments – the drainage area, recharge zone and artesian/reservoir area.

An aquifer is a geologic formation which may contain sand, gravel, clays and/or limestone that collects and holds rainwater as it flows through the ground. This happens over the recharge zone. Recharge is water that flows overland from the drainage area to the north onto the exposed Edwards region of the recharge zone. Rain falling directly on the recharge zone percolates or seeps into the ground and eventually enters the confined underground reservoir or artesian area of the aquifer to the south. The geologic formation that forms the Edwards Aquifer is primarily limestone, which is calcium carbonate. A relatively high level of calcium carbonate dissolved in the water is what makes water "hard."

It's important to protect the recharge zone from contamination such as fertilizer, petrochemical products, and other chemical contaminants because they might eventually filter into the water supply in the aquifer. There are strict regulations about what may and may not be discharged over the recharge zone, and aquifer water is checked and analyzed regularly to be sure it's safe to drink.

SAWS strives to achieve a more accurate delineation of it's wellhead protection areas, continues research to increase our knowledge of our water source and continues to educate the public. Further, SAWS is developing a contingency plan in the event of contamination. As new drinking water sources are acquired, SAWS will implement additional Wellhead/Source Water Protection Programs.

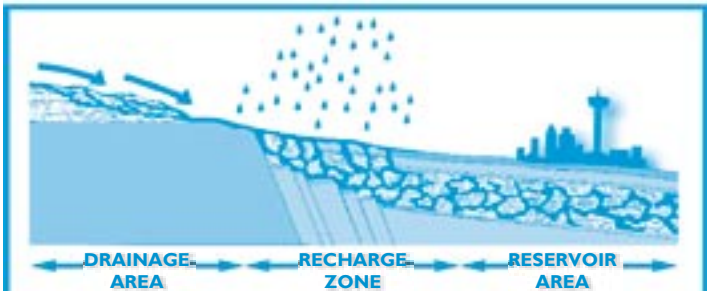
What's In Our Water

The technical term for anything other than water in our water is 'contaminant.' In this line of thinking, you could consider orange juice as water which has been 'contaminated' by the orange pulp, the oil, and the flavorings in the orange – all the things that make orange juice taste so good!

The important thing when reading this is not to be alarmed by this use of the word 'contaminant.'

It's natural for drinking water to contain contaminants, but as you will see, San Antonio's water is well within allowable limits. 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.

If you'd like more information about contaminants and potential health effects, contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791.



Rainwater seeps into the aquifer at the recharge zone.

www.saws.org

Types of Contaminants

Sources for 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 include:

- Microbiological 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 stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming
- Pesticides and herbicides, which may have a variety of sources such as agriculture, urban stormwater runoff and residential uses
- Organic chemical contaminants which are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff and septic systems and
- Radioactive contaminants, which can be naturally-occurring or 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 the SAWS Customer Service Department at (210) 704-SAWS (7297).

Understanding The Charts

The following list explains the terms used in the charts.

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 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.

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

Not Regulated: The contaminant is not currently regulated by the Environmental Protection Agency.

ppm: Parts per million. One part per million equals one teaspoon in 1,302 gallons, which is enough water to fill a typical bathtub more than 40 times.

ppb: Parts per billion. One part per billion is equal to one teaspoon in 1,302, 000 gallons – enough to fill a typical bathtub more than 40,000 times.

N/A: Not applicable

ND: Not detected

Points-of-entry: Entry point to the distribution system which is representative of each well after disinfection.

Remember that these substances are shown in parts per million or parts per billion. As you will see in these charts, water delivered by SAWS from the Edwards Aquifer is of excellent quality.

Substance	Highest Concentration Found in Water	Concentration Range found in Water	MCL	MCLG	Possible Source
Barium (ppm) 2001	0.035	ND – 0.035	2	2	Erosion of natural deposits; discharge of drilling wastes; discharge from metal refineries.
Fluoride* (ppm) 2001	0.2	ND – 0.2	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer & aluminum factories.
Nitrate (ppm) 2001	1.97	ND –1.97	10	10	Erosion of natural deposits; Runoff from fertilizer use; Leaching from septic tanks, sewage.
Tetrachloroethylene (ppb) 2001	1.4	ND – 1.4	5	0	Leaching by PVC pipes; discharge from factories and dry cleaners.
Total Xylene (ppm) 2001	0.002	ND - 0.002	10	10	Discharge from petroleum refineries; discharge from chemical factories.
Carbon Tetrachloride (ppb) 2001	1.1	ND - 1.1	5	0	Discharge from chemical plants and other industrial activities.

* This level reflects naturally occurring fluoride.

Other Substances (2001)

Substance	Concentration (ppm)	Avg. Concentration (ppm)	MCL (ppm)
Calcium	87	87	Not regulated
Chloride	18 – 27	23	250
Copper	0.026	0.026	1
Magnesium	13	13	Not regulated
Sodium	11	11	Not regulated
Sulfate	19 – 33	26	250
Total Hardness*	229 – 273	239	Not regulated
Total Alkalinity*	204 – 232	209	Not regulated
Total Dissolved Solids	264 - 301	280	500
Zinc	0.02	0.02	5

*As Calcium Carbonate

Disinfection By-Products Observed Under the Information Collection Rule (1997-1998)

Substance	Maximum Observed Concentration (ppb)
Chloroform	9
Trichloroacetonitrile	ND
Dichloroacetonitrile	1
Bromodichloromethane	6
Dichloropropanone	1
Chloropicrin	ND
Dibromochloromethane	12
Bromochloroacetonitrile	1
Dibromoacetonitrile	2
Trichloropropanone	ND
Bromoform	8
Chloral Hydrate	1
Monochloroacetic acid	2
Monobromoacetic acid	ND
Dichloroacetic acid	8
Trichloroacetic acid	2
Bromochloroacetic acid	4
Dibromacetic acid	4

Microbiological Contaminants Monitoring (2001)

(Regulated in the Distribution System)

Substance	MCL	Amount found	Source
Total coliform (presence)	*	Highest Monthly % of positive samples was 2.17%	Naturally present in the environment
Fecal coliform (presence)	**	1	Human and animal fecal waste

*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.

What are Coliforms?

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.

Fecal coliform bacteria and, 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. The table above indicates whether total or fecal coliform bacteria were found in the monthly drinking water samples submitted for testing last year.

Required Monitoring-No MCLs* (2001) *these values are from points of entry

Substance	Range Detected (ppb)	Average Concentration (ppb)	Reasons for Monitoring
Chloroform	ND – 12.0	4.6	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..
Bromodichloromethane	ND – 2.9	1.1	
Dibromochloromethane	ND – 3.3	1.1	
Bromoform	ND – 4.3	1.1	

Lead and Copper Results (2001)

Substance	90th Percentile	Action Level	Number of residences exceeding Action Level	Possible Source
Lead (ppb)	4.9	15	0	Corrosion of household plumbing
Copper (ppm)	0.215	1.3	0	Corrosion of household plumbing

Note: These two metals get into the water because of corrosion of household plumbing. Many older homes have copper pipes that were put together with lead-based solder. The 90th percentile means that 90 percent of the homes measured had less than that. A total of 50 residences were monitored.

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

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or Immuno-compromised 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 (1-800-426-4791)**.

How Can You Participate?

SAWS has made great strides in public awareness and education in recent years through public information fairs and public education regarding water-related issues. The campaign stressing the importance of conservation, stormwater runoff, water quality, reuse, aquifer studies, recycling and wellhead protection has been, and will continue to be, presented through these efforts.

In addition to the information fairs, SAWS has programs for homeowner's associations, schools and community gatherings. Through these programs, people can learn how to identify potential hazards that could threaten our water supply.

If you would like to find out when SAWS Board meetings and Town Hall meetings are scheduled, call the SAWS Public Information Office at (210) 704-7333. You can also check our Web site on the internet at *www.saws.org*.

If there's anything about this report that you do not understand or if you want more information, please call the SAWS Customer Service Department at (210) 704-SAWS (7297) or pick up additional copies of the 2002 Water Quality Report at any of our Customer Service Centers.

Thank you for reading this report, and for being a SAWS customer!

SAWS CUSTOMER SERVICE CENTERS

Downtown	1001 E. Market St.
Eastside	3930 E. Houston
Westside	Las Palmas Mall

SPECIAL NOTE:
In last year's water quality report, we stated that we would test our water for arsenic levels. This was done because of a nationwide interest in arsenic in drinking water supplies. In 2001, the Environmental Protection Agency (EPA) revised the maximum contaminant level for arsenic to 10 ppb. We are pleased to report that San Antonio's water within the SAWS service area was tested in 2001 and a had a result of less than 2 ppb — a level well below the new EPA limit.

2002 Water Quality Report

Look Inside!
This is your annual report on the quality of your drinking water.

San Antonio Water System

If you would like more information or a copy of the report in Spanish, please call 704-SAWS (7297).

Este reporte incluye información importante sobre su agua de beber. Si requiere más información o una copia de este reporte en español, por favor llame al 704-SAWS (7297).