



2016 Water Quality Report

An Informational Newsletter For Our Customers

Consumer Confidence Report

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Our Drinking Water Meets or Exceeds All Federal 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 following pages. The U.S. EPA requires water systems to test up to 97 contaminants. We hope this information helps you become more knowledgeable about what's in your drinking water.

Sources of Drinking Water: Surface Water

The sources of drinking water (both tap 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. It can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water prior to 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 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 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.

Secondary Constituents

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 concerns. Therefore, secondary constituents are not required to be reported in this document but they may greatly affect the appearance and taste of your water.

Source Water Assessment

The TCEQ has completed a Source Water Susceptibility Assessment for all drinking water systems that own their sources. This report describes the susceptibility and types of constituents that may come into contact with the drinking water source based on human activities and natural conditions. The system from which we purchase our water (City of Corpus Christi) received the assessment report. For more information on source water assessments and protection efforts at our system contact Jake Krumnow at (361) 643-6521, extension 4015.

Details about source-water assessments are available in Drinking Water Watch at the following: <http://dww2.tceq.texas.gov/DWW/>

SPECIAL NOTICE

Some people may be more vulnerable to microbial contaminants (such as Cryptosporidium) in their drinking water than the general population. Immuno-compromised persons, such as those undergoing chemotherapy for cancer, those who have received organ transplants, those undergoing treatment with steroids; and, people with other immune disorders along with infants and some elderly can be at risk from infection. These people should seek advice about drinking water from their physician or health-care provider. Guidelines and means to lessen the risk of infection by Cryptosporidium and other contaminants is available from the Safe Drinking Water Hotline at 1-800-426-4791.

(Required notice for all Community Public Water Supplies)

En Español

Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al teléfono (361) 643-6521.

Annual Water Quality Report for January 1 to December 31, 2016

The San Patricio Municipal Water District (SPMWD) is providing this annual Drinking Water Quality Report to tell you about our water and how its quality compares to the guidelines set by the United States Environmental Protection Agency (USEPA). All drinking water providers are required by federal law to issue annual quality reports to their customers.

Most importantly, the Water District Board of Directors wants you to know that when you drink tap water from our system you are drinking clean, high quality water that meets strict government standards. This report will help you understand the steps taken every day by our experienced staff to deliver the safe drinking water that is essential to human survival.

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 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 at 1-800-426-4791.

For more information regarding this report, SPMWD's contact person is Jake Krumnow at (361) 643-6521, extension 4015.

Where Does Our Water Come From?

All of the drinking water supplied by the San Patricio Municipal Water District comes from **SURFACE** water impoundment systems consisting of: **LAKE CORPUS CHRISTI, CHOKE CANYON RESERVOIR** and **LAKE TEXANA**.

Water stored in Choke Canyon and Lake Corpus Christi makes its way down the Nueces River to intake pumps at Calallen. The untreated river water is moved by pipeline to the San Patricio Municipal Water District treatment facilities near Ingleside.

Colorado River water is pumped into Lake Texana via the Mary Rhodes Pipeline Phase II. Water at Lake Texana is then pumped through the 101-mile Mary Rhodes Pipeline Phase I. SPMWD has a tap off that pipeline and routes the water to our facilities where it is blended with water received from the Nueces River.

The San Patricio MWD treatment plant purifies 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. That quality drinking water is then delivered to our residential, commercial and industrial customers.



**SPMWD
Insert**

Edition

For all of the year 2016, customers served by Seaboard Water Supply Corporation along with systems serving Odem, Taft, Rincon WSC, Portland, Gregory, Sherwin Alumina, Ingleside, Ingleside On The Bay, Aransas Pass, Port Aransas, Rockport and Fulton received water treated at the SPMWD treatment complex near Ingleside.

Definitions

The following tables contain scientific terms and measures, some of which may require explanation.

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

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.

Average (Avg) Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Coliforms Total coliform bacteria are used as indicators of microbial contamination because they are easily detected. While not themselves disease producers, they are often found in association with other microbes 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 safe for human consumption. Fecal coliform (mostly E-coli) is part of the coliform bacteria group originating in the intestinal tract of warm-blooded animals that pass into the environment as feces. Fecal coliform is used as an indicator of fecal contamination of a drinking water supply.

Contaminant Drinking water, even bottled water, may contain at least small amounts of contaminants. Presence of contaminants does not indicate a health risk.

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

Maximum Residual Disinfection 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 Disinfection 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 contamination.

Micromho per centimeter (umho/cm) A unit of measurement to quantify Specific Conductance (SC). Specific Conductance measures how well water can conduct an electrical current for a unit length and unit cross-section at a certain temperature. Generally, there aren't regulatory levels for SC. Instead, the concentration of total dissolved solids (TDS) is often regulated. However, SC is an easily-obtained parameter that is a good indicator of the amount of dissolved solids in a water, and thus can be used to detect contaminants in water.

Nephelometric Turbidity Unit (NTU) A measure of water clarity.

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

Parts Per Million (ppm) Equivalent to milligrams per liter—or, one once in 7,350 gallons of water.

Parts Per Billion (ppb) Equivalent to micrograms per liter—or, one once in 7,350,000 gallons of water.

Pico Curies Per Liter (pCi/L) A measure of radioactivity.

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

Turbidity The clarity of water. Turbidity has no health effect but can interfere with disinfection and provide a medium for microbial growth. It may indicate the presence of disease-causing organisms which may include bacteria, viruses and parasites that can cause symptoms such as cramps, diarrhea and associated headaches. Turbidity must be less than 0.3 NTU in 95% of monthly samples.

Nitrate Advisory

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.



Important Health Information Regarding Lead Exposure

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. The San Patricio Municipal Water District 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 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 or at <http://www.epa.gov/safewater/lead>.

(Required notice for all Community Public Water Supplies)

Abbreviations

(All abbreviations listed may not appear in this report.)

NTU	Nephelometric Turbidity Units
MFL	million fibers per liter (a measure of asbestos)
pCi/L	Pico curies per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/L)
ppb	parts per billion, or micrograms per liter (mg/L)
ppt	parts per trillion, or nanograms per liter
ppq	parts per quadrillion, or picograms per liter
N/A	Not applicable
ND	Not detected in sample, or at reporting limit

Cryptosporidium Information

Cryptosporidium is a microbial pathogen that may be found in water contaminated by feces. Although filtration (one of the steps we take in the treatment of drinking water) removes Cryptosporidium, it cannot guarantee 100 percent removal nor can testing methods 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.

With this in mind, you should never drink water straight from lakes, streams or rivers—no matter how “clean and clear” the water may appear.



AN INFORMATIONAL
NEWSLETTER FOR OUR
CUSTOMERS

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Water District**
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*Serving
South Texas
Since 1951*

We Welcome Your Comments & Questions

Public Participation Opportunities

You can learn more about your water system, offer your comments and present questions at the monthly meetings of the San Patricio Municipal Water District Board of Directors. Meetings are held at **2:00 PM on the second Tuesday of each month** at the District offices on Highway 361 between Gregory and Ingleside.

You can also get answers to your questions by calling Jake Krumnow, the District's contact person, at (361) 643-6521, extension 4015.

The District was created by the Texas Legislature in 1951 to provide water to San Patricio, Aransas and potentially Refugio county. Prior to that date, residents of the county were forced to depend on limited groundwater supplies.

An eight-member board of directors governs the Water District. Seven directors are elected from member communities (Odem, Taft, Gregory, Portland, Aransas Pass, Ingleside and Rockport) and the eighth director is appointed by the other seven. The District has taxing authority within the limits of the member cities but has not elected to collect a property tax.

Office Hours

Monday — Friday
8:00 AM — 5:00 PM

Summer Holiday Closings

Independence Day
Tuesday, July 4, 2017

Labor Day
Monday, September 4, 2017

Annual Drinking Water Quality Report for 2016

The following table lists chemical constituents found in drinking water from the San Patricio Municipal Water District Treatment Plant near Ingleside. EPA requires all water systems to test for up to 97 constituents.

Year	Constituent	SPMWD		USEPA Regulations		Possible Source of Constituent
		Avg / Detect	Range ⁽¹⁾	Maximum Contaminant Level	Maximum Contaminant Level Goal	
REGULATED CONSTITUENTS — INORGANIC (sampled at SPMWD's ENTRY POINT to distribution system)						
2016	Arsenic (ppm)	<0.002	<0.002	10	0	Erosion of natural deposits. Runoff from orchards.
2016	Barium (ppm)	0.108	0.108	2	2	Discharge of drilling wastes or metal refineries; erosion of natural deposits.
2016	Fluoride (ppm)	0.512	0.14—0.83	4	4	Water additive which promotes strong teeth.
2016	Nitrogen, Nitrate As N (ppm)	0.34	0.34	10	10	Fertilizer, sewage, feedlot runoff or natural deposits.
2016	Nitrate (ppm)	3.09	2.5—3.6	10	10	Fertilizer, sewage, feedlot runoff or natural deposits.
2016	Nitrite (ppm)	0.006	0.002—0.012	1	1	Fertilizer, sewage, feedlot runoff or natural deposits.
2016	Selenium (ppm)	<0.003	<0.003	50	50	Petroleum/metal refinery discharge; natural deposits.
2012	Gross alpha particle (pCi/L)	<2.0	<2.0—<2.0	15	0	Decay of natural and man-made deposits.
DISINFECTION BY-PRODUCTS (sampled at SPMWD's ENTRY POINT to distribution system, unless otherwise noted)						
2012	Gross beta emitters (pCi/L)	8.6	8.6—8.6	50	0	Decay of natural and man-made deposits.
2012	Radium 228 (pCi/L)	<1.0	<1.0—<1.0	5	0	Decay of natural and man-made deposits.
2016	Total Trihalomethanes (ppb)	24.4	16.0—39.0	80	0	By-product of drinking water chlorination.
2016	Total Haloacetic Acids (ppb)	24.5	4.0—35.0	60	0	By-product of drinking water chlorination.
2016	Total Haloacetic Acids - Plant "A"	26.6	16.0—34.0	60	0	By-product of drinking water chlorination.
SYNTHETIC ORGANIC COMPOUND						
2016	Total Haloacetic Acids - Plant "C"	27.5	17.0—57.0	60	0	By-product of drinking water chlorination.
2016	Atrazine (ppb)	0.37	0.37	3	3	Runoff from herbicides used on row crops.
UNREGULATED CONTAMINANTS ⁽²⁾ (sampled at SPMWD's ENTRY POINT to distribution system)						
2016	Metolachlor (ppb)	<0.20	<0.20	N/A	(Monitored, not regulated)	Herbicide used on row crops.
2016	Di-(2-ethylhexyl)phthalate (ppb)	<0.6	<0.6	6	0	Discharge from rubber and chemical factories.
2016	Bromoform (ppb)	5.2	0.5—20.0	N/A	N/A	By-product of chlorination.
2016	Bromodichloromethane (ppb)	7.3	4.8—12.0	N/A	N/A	By-product of chlorination.
TOTAL ORGANIC CARBON, Source Water (source water sampled at SPMWD treatment plant)						
2016	Chloroform (ppb)	4.1	1.2—7.3	N/A	N/A	By-product of chlorination.
DISINFECTANT RESIDUAL (sampled at SPMWD's ENTRY POINT to distribution system)						
2016	Dibromochloromethane (ppb)	7.9	2.8—13.0	N/A	N/A	By-product of chlorination.
LEAD & COPPER 90th Percentile Action Level (Max results five "outside" sites; also ENTRY dist. Sys.)						
2016	Raw Water (ppm)	6.69	6.09—7.70	N/A	N/A	Naturally present in the environment.
2016	Chlorine (ppm) - SPMWD	4.3	3.1—5.6	MRDL = 4	MRDLG = <4	Disinfectant, used to control microbes.
TURBIDITY Highest Single Measurement Monthly Results Turbidity MCL (analysis of treated water entering SPMWD's distribution system)						
2016	Lead (ppb) - westside 5 sites	3.0	0 ⁽³⁾	15		Corrosion of household plumbing systems.
COLIFORMS Highest Monthly % of Positive Samples MCL MCLG (SPMWD dist. system sampling sites)						
2016	Copper (ppm) - westside 5 sites	0.068	0 ⁽³⁾	1.3		Corrosion of household plumbing systems.
2016	Turbidity (NTU) - SPMWD	0.05	100.00% ⁽⁴⁾	0.3		Soil runoff.
2016	Total Coliform	0		Presence of coliform bacteria in ≥ 5% of monthly samples.	0	Naturally present in the environment.
2016	Fecal Coliform/E-coli	Not Detected		A routine sample & repeat sample are coliform positive, & one is also fecal coliform or E. coli positive.	0	Naturally present in the environment.

1. Range of detected levels, indicated for one or more samples collected.

2. Unregulated contaminants are those for which the 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 regulations are warranted.

3. Number of sites exceeding action level.

4. Lowest monthly % of samples meeting limits.

—Supplemental Data to the Annual Drinking Water Quality Report for 2016

The following table lists chemical constituents found in drinking water from the San Patricio Municipal Water District Treatment Plant near Ingleside. EPA requires all water systems to test for up to 97 constituents.

Secondary and Other Constituents Not Regulated by EPA

Year	Constituent	SPMWD Results		Secondary Limit	Possible Source of Constituent
		Avg / Detect	Range		
2016	Aluminum (ppm)	0.0692	0.0692	0.05 — 0.2	Abundant naturally occurring element.
2016	Antimony (ppm)	<0.001	<0.001	N/A	Industrial discharge.
2016	Alkalinity, Bicarbonate (ppm)	139	139	N/A	Corrosion of carbonate rocks such as limestone.
2016	Alkalinity, Carbonate (ppm)	<2	<2	N/A	Corrosion of carbonate rocks such as limestone.
2016	Alkalinity, Phenolphthalein (ppm)	<2	<2	N/A	Naturally occurring soluble mineral salts.
2016	Beryllium (ppm)	<0.0008	<0.0008	N/A	Naturally occurring and industrial discharge.
2016	Cadmium (ppm)	<0.001	<0.001	N/A	Pipe corrosion, natural deposits, discharge from Metal refineries.
2016	Calcium (ppm)	130	65—208	N/A	Abundant naturally occurring element.
2016	Chloride (ppm)	100	55—201	300	Abundant naturally occurring element; used in water purification; byproduct of oilfield activity.
2016	Chromium (ppm)	<0.01	<0.01	100	Naturally occurring, industrial discharge.
2016	Copper (ppm)	0.0079	0.0079	1	Corrosion of household plumbing systems; natural deposit erosion; leaching from wood preservatives.
2016	Iron (ppm)	0.015	0.015	N/A	Abundant naturally occurring element.
2016	Lead (ppb)	1.8	1.8	15	Corrosion of household plumbing systems.
2016	Magnesium (ppm)	7.17	7.17	N/A	Abundant naturally occurring element.
2016	Manganese (ppm)	0.0159	0.0159	0.05	Abundant naturally occurring element.
2016	Mercury (ppm)	<0.0004	<0.0004	N/A	Naturally occurring, industrial discharge, landfill and cropland runoff.
2016	Nickel (ppm)	0.0015	0.0015	N/A	Erosion of natural deposits.
2016	pH (units)	7.8	7.0—8.7	6.5 — 8.5	Measure of corrosivity of water.
2016	Silver (ppm)	<0.010	<0.010	N/A	Home water treatment devices.
2016	Sodium (ppm)	75.0	75.0	20000	Natural deposit erosion; oilfield activity byproduct.
2016	Specific Conductance (umho/cm)	665	463—1150	N/A	A measure of how well water can conduct an electrical current.
2016	Sulfate (ppm)	57	45—75	300	Naturally occurring; common industrial byproduct; byproduct of oilfield activity.
2016	Thallium (ppm)	<0.0004	<0.0004	N/A	Industrial discharge.
2016	Total Alkalinity as CaCO ₃ (ppm)	120	74—180	N/A	Naturally occurring soluble mineral salts.
2016	Total Dissolved Solids (ppm)	392	285—662	1000	Total dissolved mineral constituents in water.
2016	Total Hardness as Ca/Mg (ppm)	141	30—260	N/A	Naturally occurring calcium and magnesium.
2016	Zinc (ppm)	0.0464	0.0464	5	Moderately abundant naturally occurring element; used in the metal industry.