



## City Of Merced Consumer Confidence Report Reporting Year 2018

Last year, as in years past, your tap water met or surpassed all U.S. Environmental Protection Agency (EPA) and State drinking water health standards. The City of Merced vigilantly safeguards its water supplies and once again, we are proud to report that our system had no violations of maximum contaminant levels or any other water quality standard. This brochure is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State Standards. We are committed to providing you with information because informed customers are our best allies.

*Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.*



### SOURCE WATER ASSESSMENT

An assessment of the drinking water source for the City of Merced's water system was completed in March 2003. The source is considered vulnerable from the following activities: gas stations (current and historic), dry cleaners, leaking underground storage tanks, sewer collection system, chemical/petroleum pipeline, fertilizer, pesticide/herbicide application, agricultural drainage, farm chemical distributor/application service, low density septic system, agricultural wells, and irrigation wells. A copy of the complete assessment is available at the City of Merced, Public Works Department at 1776 Grogan Avenue, Merced, CA. You may request a summary of the assessment by contacting the Administration Office at (209) 385-6800.

### DRINKING WATER FLUORIDATION

Our water system is treated by adding fluoride to the naturally occurring level to help prevent dental cavities in consumers. State regulations require the fluoride levels in the treated water be at an optimum dose of 0.70ppm (parts per million). Our monitoring showed the fluoride levels in the treated water ranged from 0.10ppm - 1.00ppm with an average of 0.70ppm. Information about fluoridation, oral health, and current issues is available by visiting [www.waterboards.ca.gov/drinkingwater/program/index.shtml](http://www.waterboards.ca.gov/drinkingwater/program/index.shtml).

### COMMUNITY PARTICIPATION

The City Council meets every first and third Monday of the month beginning at 6:00 pm at the Civic Center located at 678 W. 18th Street, Merced. The public is encouraged to attend.

### PROTECT OUR DRINKING WATER SYSTEM

Tampering with a public water system is a Federal offense. Please report any suspicious activity occurring at any water facility or hydrant to the Merced Police Department at (209) 385-6905.

### WATER CONSERVATION

To monitor your water use, go to [www.eyeonwater.com](http://www.eyeonwater.com), where you can check for leaks and view your water usage by the hour, day or month.

### WHERE DOES THE CITY OF MERCED GET IT'S WATER?

The City of Merced supplies water through the operation of 20 active wells throughout the City. These wells draw water from the Merced Groundwater Subbasin. Each site can produce over 1,500 gallons per minute. The distribution system is well over 500 miles long, includes over 25,000 service connections, nearly 3,000 fire hydrants and approximately 25,000 water meters, 7,000 main line valves and over 2,100 backflow devices. The system regularly pumps 35 million gallons per summer day needed to supply the 86,000 citizens of Merced.

In 2018, these wells pumped 6.3 billion gallons of water to residents, businesses, and commercial properties. In a continued effort to conserve water, the City of Merced encourages residents to keep an Eye On Water (a water meter software application), and follow the conservation program and water waste ordinance.



### THE SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. SDWA authorizes the United States Environmental Protection Agency (US EPA) to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. US EPA, states, and water systems then work together to make sure these standards are met. The National Primary Drinking Water Regulations set enforceable maximum contaminant levels for particular contaminants, required ways to treat water to remove contaminants as well as testing the water for those contaminants, and specific reporting requirements of the test results.

### IMPORTANT HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants, may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The USEPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800)426-4791.

### CITY OF MERCED WEBSITE

Visit [www.cityofmerced.org](http://www.cityofmerced.org), Water Dept., for more information on our water system. If you have any questions regarding the content of this report or any other drinking water related topic, please call us at (209) 385-6800.



### CROSS CONNECTION CONTROL PROGRAM

The purpose of the cross connection control program (aka backflow) is to reduce the hazards of contamination to the public water system by identifying actual and potential cross connections and taking action to protect the system from these hazards. This is accomplished by installing approved backflow prevention assemblies where hazards are identified; or ensuring that water-using equipment on the premises is installed in accordance with the plumbing code requirements and good practices. To keep your drinking water safe, the City's Cross Connection Specialist surveys the system to ensure compliance with cross connection/backflow requirements. The Specialist tests each primary external backflow prevention assembly annually; in 2018 the City tested 2,174 cross connection backflow assemblies, and found 180 of those needed repair.

### SAFETY IN WORK ZONES

Whenever you see traffic cones and/or signs of our employees at work, please obey these signs and slow down. The City of Merced water crews often work in trenches, below the ground level, where repairs to the water main (pipe) may be needed. Their goal is to work as fast and skillfully as possible to get your water back on. Slowing down and following directions will help ensure the safety of our residents, as well as our employees.



### 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. We are 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 and want your water tested, call us for information at (209) 385-6800. For information on lead in drinking water, testing methods, and steps you can take to minimize exposure, call the Safe Drinking Water Hotline or visit [www.epa.gov/safewater](http://www.epa.gov/safewater).



### SCHOOL LEAD TESTING

In August 2017, the City of Merced took initiative and conducted the required Lead testing of the drinking water at all schools within the public water system service area. With the collaboration of all 30 schools, the Lead testing was completed by October 2017. The Action Level (AL) for Lead is 15 ppb (parts per billion). All schools within the City of Merced public water system tested below the AL.

**SAMPLING RESULTS** The tables below list all drinking water contaminants that we tested for and detected according to State drinking water requirements. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless noted, the data presented in this report are from testing accomplished from January 1, 2018 to December 31, 2018. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not frequently change. In these cases, the most recent sample data are included, along with the year in which the samples were collected.

**REGULATED CONTAMINANTS WITH PRIMARY DRINKING WATER STANDARDS: Enforceable standards and treatment techniques to protect public health by limiting the levels of contaminants in drinking water.**

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE DETECTED	RANGE LOW- HIGH	VIOLATION	TYPICAL SOURCE
1,2,3 Trichloropropane [TCP] (ppt)	2018	5	0.7	0.1	ND-.65	No	Industrial solvents; cleaning and degreasing agent; paint remover
Arsenic <sup>1</sup> (ppb)	2017	10	0.004	3.9	1.8-8.7	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2017	1	2	0.23	0.09-0.49	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (ppm)	2018	[4.0 (as Cl <sub>2</sub> )]	[4.0 (as Cl <sub>2</sub> )]	0.69	0.2-1.1	No	Drinking water disinfectant added for treatment
Chromium [Total] (ppm)	2017	50	(100)	3.8	ND-5.3	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Copper (ppm)	2017	AL=1.3	0.3	0.003	ND-0.016	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride (ppm)	2018	2	1	0.11	ND-0.17	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2017	15	(0)	2.4	ND-12	No	Erosion of natural deposits
Gross Beta Particle Activity <sup>2</sup> (pCi/L)	2017	50	(0)	6.1	ND-11	No	Decay of natural and man-made deposits
Lead (ppb)	2017	AL=15	0.2	0.22	ND-1.2	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Nitrate <sup>3</sup> (as N) (ppm)	2018	10	10	2.8	1.2-4.9	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Tetrachloroethylene [PCE] <sup>4</sup> (ppb)	2018	5	0.06	.07	ND-3.7	No	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
Trichloroethylene [TCE] (ppb)	2018	5	1.7	0.03	ND-1.2	No	Discharge from metal degreasing sites and other factories
Turbidity (NTU)	2017	5	NS	0.08	ND-0.86	No	Soil runoff
Uranium (ppb)	2017	30	0	2.4	ND-8.7	No	Erosion of natural deposits

**REGULATED CONTAMINANTS WITH SECONDARY DRINKING WATER STANDARDS: Non-enforceable guidelines regarding contaminants that may cause cosmetic or aesthetic effects. \*There are no PHGs, MCLGs, or mandatory standard health effects language for these contaminants because secondary MCLs are set on the basis of aesthetic concerns.**

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE DETECTED	RANGE LOW- HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2017	200	NS	10	ND-220	No	Erosion of natural deposits; residue from some surface water treatment processes
Chloride (ppm)	2017	500	NS	9.5	4.8-15	No	Runoff/leaching from natural deposits; seawater influence
Corrosivity <sup>5</sup> (Units)	2016	Non-corrosive	NS	12	12-13	No	Natural or industrially influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Iron (ppb)	2017	300	NS	0	ND-73	No	Leaching from natural deposits; industrial wastes
Manganese (ppb)	2018	50	NS	0.16	ND-3.6	No	Leaching from natural deposits
Odor (Threshold)	2017	3 Units	NS	.05	ND-1	No	Naturally occurring organic materials
pH, Laboratory	2018	6.5-8.5	NS	7.8	7.2-8.2	No	Low pH: bitter metallic taste, corrosion. High pH: slippery feel, soda taste; deposits
Sulfate (ppm)	2017	500	NS	10.4	6.8-14	No	Runoff/leaching from natural deposits; industrial wastes
Specific Conductance (µS/cm)	2018	1600	NS	310	197-505	No	Substances that form ions when in water; seawater influence
Total Dissolved Solids (ppm)	2017	1,000	NS	263	190-370	No	Runoff/leaching from natural deposits

**Tap water samples were collected for lead and copper analyses from sample sites throughout the community**

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AVERAGE DETECTED (90TH %TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2018	1.3	0.3	0.2	0/45	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2018	15	0.2	ND	0/45	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

**UNREGULATED AND OTHER SUBSTANCES<sup>6</sup>**

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AVERAGE DETECTED	RANGE LOW-HIGH
Bromide (ppb)	2018	70	24-170
Calcium (ppm)	2017	30	16-52
Chlorate (ppm)	2014	113	50-240
Chlorodifluoromethane (ppb)	2014	0.14	0.081-0.18
Hardness (Total) as CaCO <sub>3</sub> (ppm)	2017	126	62-220
Hexavalent Chromium (ppb)	2017	3.5	1.6-4.7
Magnesium (ppm)	2017	12.3	4.7-24
Molybdenum (ppb)	2016	1.5	ND-2.9
Potassium (ppm)	2017	6.3	ND-12
Sodium (ppm)	2017	23.8	14-34
Strontium (ppb)	2014	377	200-660
Toluidine (ppb)	2018	0.0019	ND-.034
Vanadium (ppb)	2014	21	16-28
1,4 Dioxane (ppb)	2014	0.094	0.092-0.095

**SUBSTANCES THAT COULD BE IN WATER**

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.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resource Control Board (State Board/SWRCB) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that 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 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 U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

**Contaminants that may be present in source water include:**

**Microbial Contaminants**, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

**Inorganic Contaminants**, such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and Herbicides**, that may come from a variety of sources such as agriculture, urban stormwater 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 can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.

**Radioactive Contaminants** that can be naturally occurring or can be the result of oil and gas production and mining activities.

**DEFINITIONS**

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

**MCL** (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste and appearance of drinking water.

**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 are set by the U.S. EPA.

**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.

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

**NS**: No standard

**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.

**PDWS** (Primary Drinking Water Standard): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**PHG** (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

**ppb** (parts per billion): One part substance per billion parts water (or micrograms per liter, µg/L)

**ppm** (parts per million): One part substance per million parts water (or milligrams per liter, mg/L.)

**ppt** (parts per trillion): One part substance per trillion parts water (1 ppt = 1000 ppm)

1) Arsenic results at Well Site 2 for all three wells are within the blending MCL of 10 ppb. While your drinking water meets the Federal and State standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The U.S. 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.

2) SWRCB considers 50 pCi/L to be the level of concern for beta particles.

3) Nitrate in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

4) PCE and TCE were detected well below the MCL at Well Sites 3, 5, and 13. All other City Well Sites reported no detection. While your drinking water meets Federal and State standards, it may contain low levels of contaminants below detection limits and below the Regulatory Action Level. The PCE and TCE standard balances the current understanding of possible health effects against the cost of removing contaminants from the drinking water. The U.S. EPA continues to research the health effects of low levels of PCE and TCE.

5) Corrosivity is not a National Environmental Laboratory Accreditation Program accredited analyte. All sampling results are based and calculated on an average of 20 production wells.

6) Unregulated contaminant monitoring helps the U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.