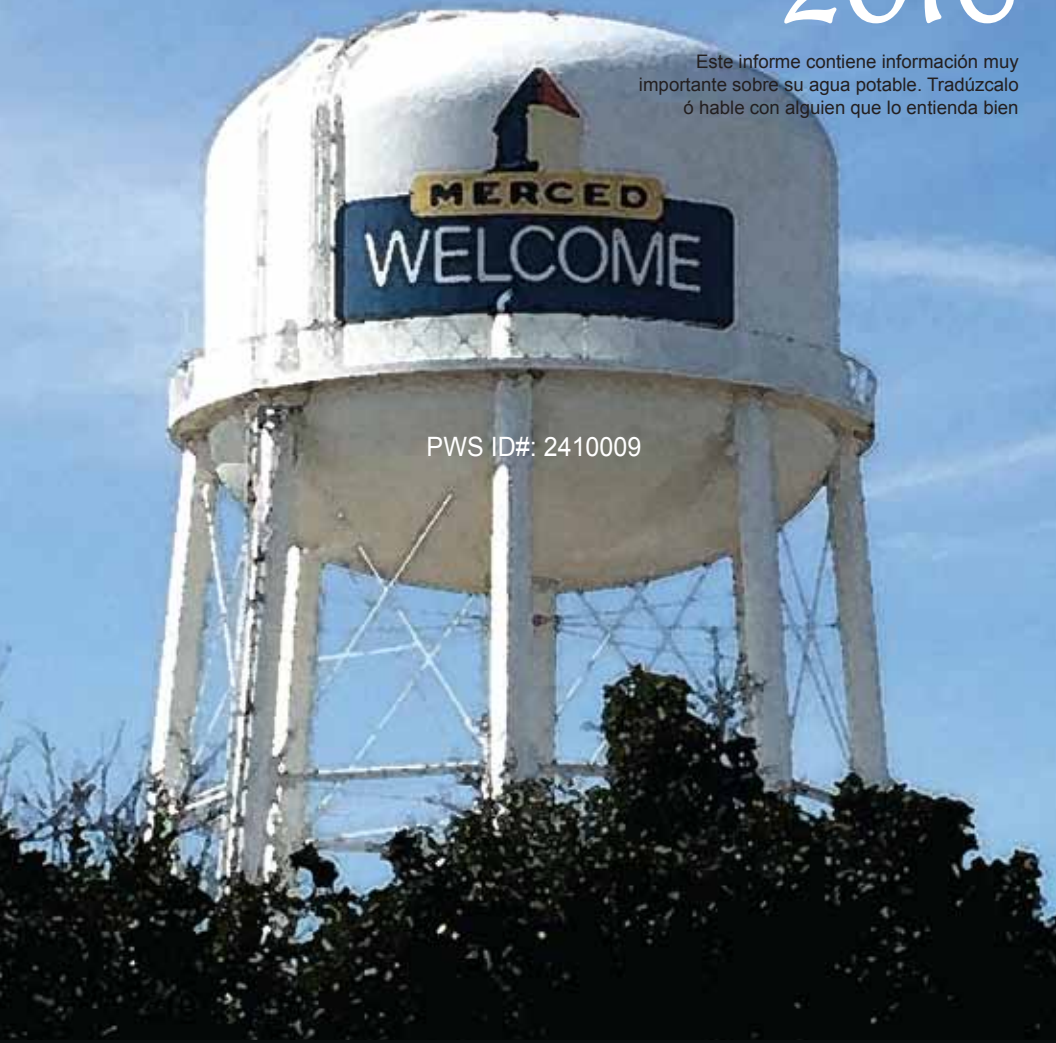
Water Quality Report
Reporting Year 2016

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



PWS ID#: 2410009

We are pleased to present to you the 2016 Annual Drinking Water Quality Report! As always, the Public Works Water Division works hard to provide safe, reliable and high-quality drinking water that meets or exceeds the Federal and State drinking water standards. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

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.

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 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 www.epa.gov/lead.

SOURCE WATER ASSESSMENT

An assessment of the drinking water sources for the City of Merced's water system was completed in March 2003. The sources are 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, 1776 Grogan Avenue, Merced, CA 95341. You may request a summary of the assessment to be sent to you by contacting the City of Merced Public Works Customer Service at (209) 385-6800.

DRINKING WATER FLUORIDATION

Our water system is treated by adding fluoride to the naturally occurring level to help prevent dental caries in consumers. State regulations require the fluoride levels in the treated water be at an optimum dose of 0.70ppm. Our monitoring showed that the fluoride levels in the treated water ranged from 0.09ppm-1.05ppm with an average of 0.76ppm. Information about fluoridation, oral health, and current issues is available from www.waterboards.ca.gov/drinking_water/programs/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, 678 West 18th Street, Merced. The public is welcome to attend.

Water Conservation is for Life

Drought or not, we need to continue to practice good water conservation habits. As Californians, we need to remember that drought has always occurred in California history, it is cyclical, we will continue to see times of plenty and times of drought in California. We need to embrace water conservation in our lifestyle.

Basics of using water wisely makes sense. Don't waste it, use it reasonably, don't let it run needlessly down the drain. Only water according to your schedule. In the City of Merced, we allow watering twice per week. Even addresses can water on Tuesdays and Saturdays. Odd addresses can water on Wednesdays and Sundays. Watering is allowed on your days before 9:00 a.m. or after 9:00 p.m. If you see water running off into the gutter, you've watered for too long. It's better to water a little, let it soak in, then water a little more; this practice will help prevent run-off and allow your yard to absorb more water.

There is no need to water your yard when we've had rain, which would be a waste. In fact, local and state ordinance prohibits watering in the rain or within 48 hours following measurable rain. Check to be sure your sprinkler timers are adjusted properly and fix any leaks promptly.

Our City water customers have done a great job of conserving water and we urge you to continue your new habits. Drought or not, let's continue to embrace these positive practices. Let's keep being good stewards of our water resources, living a healthy water wise life.

For more information on water conservation, check us out on the web at www.cityofmerced.org/savewater or to report water being wasted, call 388-SAVE.

Be Sure to Check for Leaks and Keep an Eye on Water

History of Merced Water Supply

The Merced water system had its beginnings in the pioneer efforts of C. H. Huffman and Charles Crocker in 1868, when they established the Merced Water Company. The company was responsible for construction of Lake Yosemite. The first connections to the City of Merced in 1899 were made possible by a 16-inch line from Lake Yosemite. In 1917, the domestic water was changed to a well system and the largest capacity elevated storage tank in California at the time was built (300,000 gallons).

In 1973, the City of Merced Water Division assumed operations from the privately owned Merced Water Company and has maintained operation ever since. The current system is composed of 20 groundwater production wells located throughout the city, approximately 350 miles of main lines, and four water tower tanks for storage. Well pump operators ensure reliability and adequate system pressure at all times to satisfy customer demand. Diesel powered generators help maintain uninterrupted operations during power outages. The City of Merced water system delivered more than 16 million gallons of drinking water per day in 2016 to approximately 20,963 residential, commercial, and industrial customer locations. The City of Merced Water Department is a division of the Public Works Department.

RECLAIMED AND REUSED

Wastewater treatment is the process that removes the majority of the contaminants from wastewater or sewage and produces a liquid effluent known as treated water or recycled water. This water is safe for discharge to the natural environment. In 2016, the City of Merced's Wastewater Treatment Facility (WWTF) produced 883 million gallons of treated water which was recycled and used for irrigation purposes of the land application area of the WWTF and 828 million gallons of recycled water which was discharged to the wildlife refuge for wetland habitats. Merced's wastewater treatment plant is participating in the efforts of water conservation by recycling and reusing the treated water.

POLLUTION PREVENTION

KEEP TRASH & OIL OUT OF THE STORM DRAIN

WHAT DID YOU RECYCLE TODAY?

Recycling Works
City of Merced
www.cityofmerced.org
209.385.6800

DON'T POUR FATS, OILS AND GREASE DOWN THE DRAIN...

CAN IT, COOL IT
BAG IT, TRASH IT

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, 2016, to December 31, 2016. The State requires us to monitor for certain substances once every three to five years because the concentrations of these substances do not frequently change. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES WITH PRIMARY DRINKING WATER STANDARDS

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppm)	2016	1	0.6	0.01	ND-0.22	No	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic[1](ppb)	2016	10	0.004	3.93	1.8-8.7	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2016	1	2	0.23	0.10-0.49	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (ppm)	2016	[4.0 (as Cl2)]	[4 (as Cl2)]	0.63	0.06-0.97	No	Drinking water disinfectant added for treatment
Chromium (ppb)	2016	50	(100)	3.77	ND-4.8	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2016	2	1	0.13	0.09-0.17	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2016	15	(0)	2.55	ND-12	No	Erosion of natural deposits
Gross Beta Particle Activity[2](pCi/L)	2016	50	(0)	6.15	ND-11	No	Decay of natural and man-made deposits
Hexavalent Chromium (ppb)	2016	10	0.02	3.58	1.6-4.7	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion
Lead (ppb)	2016	15	0.2	0.23	ND-1.2	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers, erosion of natural deposits
Nitrate[3](as N) (ppm)	2016	10	10	3.24	1.5-5.3	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
TTHMs [Total Trihalomethanes]-Stage 2 (ppb)	2016	80	NA	1.5	ND-2.3	No	By-product of drinking water disinfection
Tetrachloroethylene[4][PCE] (ppb)	2016	5	0.06	0.01	ND-0.83	No	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
Trichloroethylene[4][TCE] (ppb)	2016	5	1.7	0.02	ND-1.0	No	Discharge from metal degreasing sites and other factories
Uranium (pCi/L)	2016	20	0.43	2.5	ND-8.7	No	Erosion of natural deposits

REGULATED SUBSTANCES WITH SECONDARY DRINKING WATER STANDARDS

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2016	500	NS	9.32	4.8-15	No	Runoff/leaching from natural deposits; seawater influence
Copper (ppm)	2016	1	NS	0.003	ND-0.015	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Corrosivity[5](Units)	2016	Noncorrosive	NS	12	12-13	No	Natural or industrially influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Manganese (ppb)	2016	50	NS	3.42	ND-65	No	Leaching from natural deposits
Sulfate (ppm)	2016	500	NS	10.45	6.8-14	No	Runoff/leaching from natural deposits; industrial wastes
Specific Conductance (µS/cm)	2016	1600	NS	368	210-580	No	Substances that form ions when in water; seawater influence
Total Dissolved Solids (ppm)	2016	1000	NS	263	190-370	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2016	5	NS	0.04	ND-0.4	No	Soil runoff

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)	AMOUNT DETECTED (90TH %TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2015	1.3	0.3	0.19	0/35	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2015	15	0.2	ND	0/35	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

UNREGULATED AND OTHER SUBSTANCES[6]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Calcium (ppm)	2016	30	16-52
Chlorate (ppm)	2014	113	50-240
Chlorodifluoromethane (ppb)	2014	0.14	0.081-0.18
Hardness (Total) as CACO3	2016	127	62-220
Magnesium (ppm)	2016	12.39	4.7-24
Molybdenum (ppb)	2014	1.59	1-2.9
pH, Laboratory	2016	7.8	7.2-8.2
Sodium (ppm)	2016	23.95	14-34
Strontium (ppb)	2014	377	200-660
Vanadium (ppb)	2014	21	16-28
1,4 Dioxane (ppb)	2014	0.094	0.092-0.095

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. Environmental Protection Agency 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.

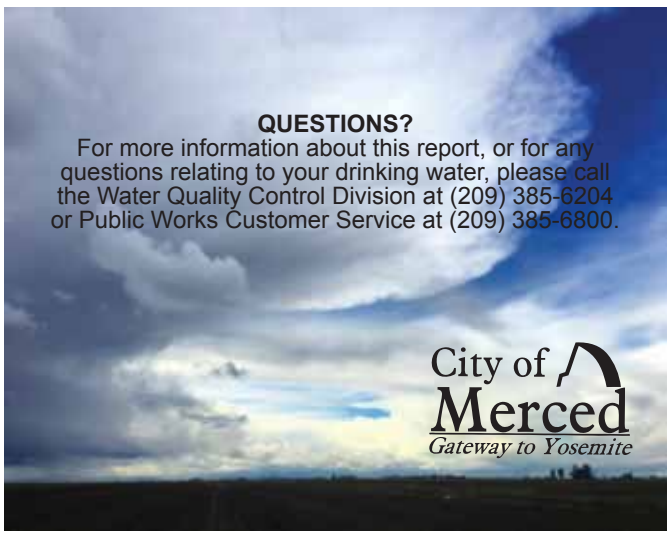
2) SWRCB considers 50 pCi/L to be the level of concern for beta particles.

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 results and TCE results were detected below the MCL. 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 drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels for 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 19 production wells.

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



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) 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.

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.

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.

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.

NA: Not applicable

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).

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

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).