UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

UCMERCED

DRINKING WATER FACTSHEET

GETTING YOUR WATER TESTED

Factsheet Drinking Water Series - #2

Find Your Water Provider

Public water systems provide water to homes and businesses, ranging from a few dozen to thousands of residents. If you live in urban or suburban areas, your drinking water likely comes from a public system and is treated before it reaches your home. Many residents who live outside urban areas, however, get water from state small water systems or private, domestic wells. Residents who receive water from these types of sources may not have resources to treat water to safe standards. Additionally, wells may be located near sources of pollution. To learn where your water comes from, use the QR code to link to an interactive map developed by the **Community Water Center**. [1]

Water Provider

Is My Water Safe?

Large water systems are required to regularly test water to ensure quality. If you live in an area served by a larger water supplier, you can find water quality test results from your provider. Follow the the QR code here to see if your water quality complies with water quality standards. [2]

Water Quality Check Up

If you live outside of a water system boundary, the best way to know your drinking water quality is to get your water tested by an independent laboratory. You can drop off or mail a sample of your water at the laboratory and have your water tested for common contaminants. Household water quality tests can cost up to $200. Follow the QR code to the right to find a water quality testing lab near you. A lot of county environmental or health departments have programs for discounted water testing. **Check with their county first!**

Lab Locations

Contaminants

Contaminants can affect human health, or the taste, odor, or color of water. Drinking water quality standards protect the public from health impacts caused by contaminants. They are monitored based on water parameters, including:

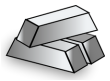
Biological

Bacteria, parasites, and viruses (like E.coli and Giardia) originate from many pollutant sources, like water runoff containing manure from animals. Illnesses that can result include intestinal issues, infections, and respiratory problems.

Turbidity

Turbidity is a measure of water clarity. Water with high turbidity appears cloudy due to small sediment and particles (solids) in the water.[4]

Metals



Metals are naturally present in all waterbodies due to the geology of the local area, but higher concentrations of metals are commonly a result from human-caused pollution. [5]

pH

pH is a measure of acidity in water. A pH value less than 7.0 is more acidic water, while pH values greater than 7.0 indicate more alkaline, or basic, water.[6]

Chemical

Chemicals as a byproduct of industrial activity like, agriculture or manufacturing, commonly leach into water sources.

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How to Interpret Results

The figure below is an excerpt from the Consumer Confidence Report (CCR) Water Quality Report from the City of Merced [7]. Explore the data below to learn how to interpret water quality test results and understand if your water is safe for drinking.

Maximum Contaminant Levels (MCLs)

MCLs are protective standards established by regulations, which public water systems must meet. An MCL is set based on health risks, detectability, treatability, and costs for treatment for a contaminant. [8]

Public Health Goals (PHGs)

PHGs reflect the level of contaminants in drinking water that pose no significant health risk if consumed for a lifetime. PHGs are established using risk assessment principles and by knowing the costs and health risks associated with contaminants, but are not legally enforceable for public water systems. [8]

Relationship Between MCLs and PHG

A Public Health Goal is first established for a contaminant based on known scientific data, followed by an enforceable Maximum Contaminant Level. MCL requirements are established as close to PHGs as possible, but may surpass PHGs.

List of Contaminants

Primary Drinking Standards

Primary drinking water standards protect public health by limiting the levels of contaminants in drinking water that pose significant health risks. [9]

Secondary Drinking Standards

Secondary standards include contaminants that may affect cosmetic or aesthetic characteristics of drinking water (taste, smell, color) [10]

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. The next Regulated contaminants sample event is scheduled for 2025.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic[1] (ug/L)	2022	10	0.004	3.5	ND - 7.7	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (mg/L)	2022	1	2	0.21	0.07 - 0.47	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (mg/L)	2022	[4.0 (as Cl2)]	[4.0 (as Cl2)]	0.71	0.28 - 1.04	No	Drinking water disinfectant added for treatment
Chromium [Total] (ug/L)	2022	50	(100)	0.99	ND - 16	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (mg/L)	2022	2	1	0.11	ND - 0.18	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2017/2022	15	(0)	2.6	ND - 9.2	No	Erosion of natural deposits.
Gross Beta Particle Activity[2] (pCi/L)	2017/2022	50	(0)	6.1	ND - 11	No	Decay of natural & man-made deposits.
Radium 226 (Ra 226) (pCi/L)	2022	5	0.05	0.01	ND - .11	No	Erosion of natural deposits.
Nitrate[3] (as N) (mg/L)	2022	10	10	2.4	0.93 - 5.0	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Tetrachloroethylene [PCE] [4] (ug/L)	2022	5	0.06	0.26	ND - 2.2	No	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
Total Trihalomethanes [TTHM] (ug/L)	2022	80	N/A	0.25	ND - 1.0	No	Byproduct of drinking water disinfection
Uranium (pCi/L)	2022	20	0.43	2.07	ND - 8.7	No	Erosion of natural deposits.

REGULATED CONTAMINANTS WITH SECONDARY DRINKING WATER STANDARDS: 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
Chloride (mg/L)	2022	500	NS	8.5	3.1 - 15	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2022	15	NS	4.7	ND - 10	No	Naturally occurring organic materials
Copper (mg/L)	2022	1.0	NS	0.30	ND -- 0.0065	No	Internal corrosion of household plumbing systems; erosion of natural deposits.
Corrosivity[5] (Units)	2022	Non-corrosive	NS	12	11 - 13	No	Natural or industrially influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Odor—Threshold	2022	3 Units	NS	0.05	ND - 1.0	No	Naturally occurring organic materials
pH, Laboratory	2022	6.5 - 8.5	NS	8.0	7.6 - 8.2	No	Low pH: bitter metallic taste, corrosion. High pH: slippery feel, soda taste; deposits
Sulfate (mg/L)	2022	500	NS	8.9	2.1 - 12	No	Runoff/leaching from natural deposits; industrial wastes
Specific Conductance (µS/cm)	2022	1600	NS	350	170 - 640	No	Substances that form ions when in water; seawater influence
Total Dissolved Solids (mg/L)	2022	1000	NS	248	150 - 400	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2022	5 Units	NS	0.28	ND - 1.6	No	Soil runoff

Tap water samples were collected for lead and copper analyses from households meeting criteria within city limits. The next Lead & Copper event is scheduled for 2024.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AVERAGE DETECTED 90TH %TILE	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (mg/L)	2021	1.3	0.3	0.16	0/31	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ug/L)	2021	15	0.2	ND	0/31	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

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