

# ANNUAL WATER QUALITY REPORT

Reporting Year 2021



*Presented By*  
**The City of Petaluma  
Public Works & Utilities**

## We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at all hours—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

### Where Does My Water Come From?

Petaluma purchases drinking water from Sonoma Water. Water from Sonoma Water originates from three reservoirs: Lake Pillsbury, Lake Mendocino, and Lake Sonoma. Releases from these reservoirs into the Russian River replenish the aquifers beneath the river. The water supply is collected 80 feet below the sand beds adjacent to the Russian River. Natural filtration gives this water its excellent quality; it requires no additional filtration. The only treatment administered is the addition of chlorine to keep the water pure in the delivery pipeline, and a small amount of sodium hydroxide to raise the pH to minimize corrosion of household pipes. Sonoma Water supplements their Russian River water supply with groundwater collected from three production wells along the Cotati Aqueduct in the Santa Rosa Plain. For more information about the Russian River water system, please contact Sonoma Water at 404 Aviation Blvd., Santa Rosa, CA 95403, via phone at 526-5370 or via their website at [www.sonomawater.org](http://www.sonomawater.org).

The City of Petaluma maintains a ready supply of local groundwater. Local groundwater, when used, is drawn from wells more than 400 feet deep. The water is naturally filtered by the sand and gravel it passes through in the aquifers. Chlorine is added to keep the water pure during delivery into the city distribution system.

### Source Water Assessment

An assessment of the drinking-water sources for the City of Petaluma was completed in March 2003. The sources for the City of Petaluma are considered most vulnerable to the following activities: sewer collection systems, airport maintenance and fueling areas, known contaminant plumes, and underground storage tanks.

The sources for Sonoma Water are considered most vulnerable to wastewater disposal and mining operations.

No contaminants associated with these activities have been detected in either of the water supplies. Copies of the completed assessments are available at the Department of Health Services, 50 D Street, Suite 200, Santa Rosa, CA. You may request a summary of the assessments to be sent to you by contacting the Department of Health Services, Office of Drinking Water, at (707) 576-2145.

### 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 we 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 do so, you may wish to collect the flushed water and reuse it for another ben-

eficial purpose, such as watering plants.) 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 at (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

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When the well is dry, we  
know the worth of water.

—Benjamin Franklin

### 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 U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or <http://water.epa.gov/drink/hotline>.



**QUESTIONS?** If you have any comments, questions, or suggestions, please contact Public works and Utilities Supervisor Joel McIntyre at (707) 776-3698 or [JMcIntyre@cityofpetaluma.org](mailto:JMcIntyre@cityofpetaluma.org), or Utility System Operator Jason Archer at (707) 776-3653, or [jarcher@cityofpetaluma.org](mailto:jarcher@cityofpetaluma.org).

## Safeguard Your Drinking Water

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain it to reduce leaching to water sources, or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use U.S. EPA's Adopt Your Watershed to locate groups in your community.
- Organize a storm drain stenciling project with others in your neighborhood. Stencil a message next to the street drain reminding people "Dump No Waste – Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

## Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council (NRDC), bottled water is not necessarily cleaner or safer than most tap water. In fact, about 40 percent of bottled water is actually just tap water, according to government estimates.

The Food and Drug Administration (FDA) is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out its website at <https://goo.gl/Jxb6xG>.



## 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 Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that 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.

## Community Participation

For matters affecting your Public Works & Utilities Department, the Petaluma City Council meets every first and third Monday of the month at Petaluma City Hall. For information on agenda items relating to the Public Works & Utilities Department or other city water matters, please call the City Clerk at (707) 778-4360.

## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. And, the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.



### REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	Petaluma Public Works & Utilities		SCWA		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
<b>Aluminum</b> (ppm)	2021	1	0.6	0.0181	ND–0.073	<0.050	ND–<0.050	No	Erosion of natural deposits; residue from some surface water treatment processes
<b>Arsenic</b> (ppb)	2021	10	0.004	2.79	ND–9.2	<2.0	<2.0–<2.0	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
<b>Barium</b> (ppm)	2021	1	2	0.089	ND–0.19	<1	<1–<1	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
<b>Chromium [Total]</b> (ppb)	2021	50	(100)	0	ND	<10	<10–<10	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
<b>Fluoride</b> (ppm)	2021	2.0	1	0.16	ND–0.24	0.12	<0.10–0.14	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
<b>Gross Alpha Particle Activity</b> (pCi/L)	2020	15	(0)	0.93 <sup>1</sup>	ND–3.11 <sup>1</sup>	0.7187 <sup>2</sup>	0.035–0.949 <sup>2</sup>	No	Erosion of natural deposits
<b>Nitrate [as nitrate]</b> (ppm)	2021	45	45	0.39	ND–1.4	<0.40	<0.40–<0.40	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
<b>Radium 228</b> (pCi/L)	2018	5	0.019	0	ND–0	0.755	0.0–1.18	No	Erosion of natural deposits
<b>TTHMs [Total Trihalomethanes]– Stage 2</b> (ppb)	2021	80	NA	23.04	22.10–23.98	0.104	0.032–0.213	No	By-product of drinking water disinfection

### 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 %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
<b>Copper</b> (ppm)	2020	1.3	0.3	0.055	0/30	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
<b>Lead</b> (ppb)	2020	15	0.2	0.009	0/30	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

## SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Petaluma Public Works & Utilities			SCWA		VIOLATION	TYPICAL SOURCE	
		SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED			RANGE LOW-HIGH
<b>Color</b> (Units)	2021	15	NS	0	0–0	3.29	<3–4	No	Naturally-occurring organic materials
<b>Foaming Agents [MBAS]</b> (ppb)	2021	500	NS	ND	ND–NA	5	5–5	No	Municipal and industrial waste discharges
<b>Iron</b> (ppb)	2021	300	NS	270	ND–960	<100	<100–<100	No	Leaching from natural deposits; industrial wastes
<b>Manganese</b> (ppb)	2021	50	NS	33.60	ND–130	23.3	<20–56	No	Leaching from natural deposits
<b>Specific Conductance</b> (µS/cm)	2021	1,600	NS	621	440–800	230	200–270	No	Substances that form ions when in water; seawater influence
<b>Sulfate</b> (ppm)	2021	500	NS	22.19	7.90–33.00	9.96	0.53–17	No	Runoff/leaching from natural deposits; industrial wastes
<b>Total Dissolved Solids</b> (ppm)	2021	1,000	NS	347	220–470	160	130–240	No	Runoff/leaching from natural deposits
<b>Turbidity</b> (NTU)	2021	5	NS	2.46	0.26–10	0.21	<0.10–0.95	No	Soil runoff

## UNREGULATED SUBSTANCES<sup>4</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Petaluma Public Works & Utilities		SCWA		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
<b>Sodium</b> (ppm)	2021	61.40	31.00–130.00	19.75	9.3–55.0	Naturally occurring
<b>Total Hardness</b> (ppm)	2021	171.90	72.00–313.00	95.09	28.0–126.0	Naturally occurring

<sup>1</sup> Last round of testing was conducted in 2020. Testing is completed every 9 years.

<sup>2</sup> Sampled in 2014.

<sup>3</sup> Sampled in 2021.

<sup>4</sup> Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

## Level 1 Assessment Update

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the 4th quarter of the past year, we were required to conduct ten (10) Level 1 assessments, which were all completed. In addition, we were required to take no corrective actions in reference to the Revised Total Coliform Rule (RTCR) Level 1 assessment.

## Definitions

**90th %ile:** The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

**Level 1 Assessment:** A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**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).

**µS/cm (microsiemens per centimeter):** A unit expressing the amount of electrical conductivity of a solution.