

Presented By
The City of Petaluma
Department of Water Resources and Conservation



Annual
**WATER
QUALITY
REPORT**
Reporting Year 2011

PWS ID#: 4910006

Meeting the Challenge

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2011. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. 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 share with us your thoughts or concerns about the information in this report. After all, well-informed customers are our best allies.

Where Does My Water Come From?

Petaluma purchases drinking water from the Sonoma County Water Agency (SCWA). SCWA 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 SCWA 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. The SCWA 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 the Sonoma County Water Agency at 404 Aviation Blvd., Santa Rosa, CA 95403, via phone at (707) 526-5370, or via their website at www.scwa.ca.gov.

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 as it is delivered into the city distribution system.

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>.

Community Participation

For matters affecting your Department of Water Resources and Conservation, 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 Department of Water Resources or other city water matters, please call the City Clerk at (707) 778-4360.

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 the SCWA 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 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/safewater/lead.

QUESTIONS?

If you have any comments, questions, or suggestions, please contact Joel McIntyre, Public Works and Utilities, at (707) 776-3698, or send email to jmcintyre@ci.petaluma.ca.us.

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 Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department 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.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often 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

				Petaluma Department of Water Resources and Conservation		SCWA			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2011	1,000	600	50.8	10.00–120.00	ND	50–53	No	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (ppb)	2011	10	0.004	2.90	0.50–6.30	2	2–2	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppb)	2011	1,000	2,000	85.70	12.00–140.00	100	100–100	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (ppb)	2011	50	(100)	4.92	0.50–10.00	2	2–2	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2011	2.0	1	0.13	0.10–0.16	0.14	0.14–0.15	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2011	15	(0)	2.14	0.51–3.83	0.7187	0.35–0.949	No	Erosion of natural deposits
Nitrate [as nitrate] (ppm)	2011	45	45	1.95	1.00–6.50	1.0	1.0–1.3	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Radium 228 (pCi/L)	2011	5	0.019	0.07	ND–0.63	0.33	0.33–1.18	No	Erosion of natural deposits
TTHMs [Total Trihalomethanes] ¹ (ppb)	2011	80	NA	28.37	ND–28.37	13.6	6.3–24.1	No	By-product of drinking water disinfection
Turbidity ² (NTU)	2011	TT	NA	NA	NA	4.8	0.10–4.8	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)	2011	1.3	0.3	0.18	0/31	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2011	15	0.2	1.6	2/31	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

			Petaluma Department of Water Resources and Conservation			SCWA			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Copper (ppb)	2011	1,000	NS	28.82	1.20–50.00	10	10–10	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Foaming Agents [MBAS] (ppm)	2011	0.50	NS	0.057	0.05–0.10	0.05	0.05–0.05	No	Municipal and industrial waste discharges
Iron (ppb)	2011	300	NS	128.9	10.00–340.00	105	100–170	No	Leaching from natural deposits; industrial wastes
Manganese (ppb)	2011	50	NS	40.33	5.00–140.00	23	20–75	No	Leaching from natural deposits
Specific Conductance (µS/cm)	2011	1,600	NS	461.11	20.00–760.00	254	240–270	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2011	500	NS	22.11	10.00–40.00	11.5	2.1–16	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2011	1,000	NS	370	230–410	152	130–200	No	Runoff/leaching from natural deposits
Turbidity (Units)	2011	5	NS	0.97	0.10–3.90	NA	NA	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES

		Petaluma Department of Water Resources and Conservation		SCWA		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2011	61.2	36–140	13.4	6.7–37	Naturally occurring
Total Hardness (ppm)	2011	183	71.00–410.00	97	38–126	Naturally occurring

¹ Water systems were required by the U.S. EPA to conduct evaluations of their distribution systems. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in distribution systems that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

² Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

Definitions

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

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

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).

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