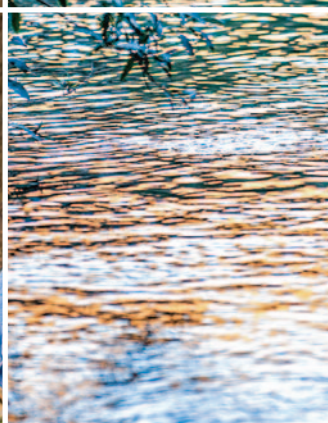


PASADENA
Water & Power
SERVING THE COMMUNITY SINCE 1906

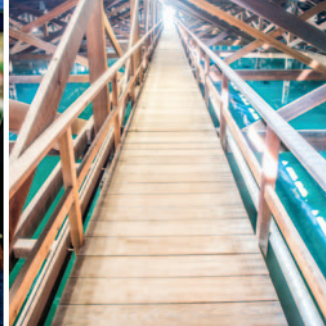
2021 Consumer Confidence Report on Water Quality



Water Quality is Our Top Priority

Pasadena Water and Power is pleased to distribute this report to its water customers. It provides important information about where your water comes from and the work we perform each day to assure the water delivered to your tap is safe to drink. It also provides data about what is in your water and how water quality tests on your drinking water compare to Federal and State drinking water standards during calendar year 2021.

www.PWPweb.com



Message from the Interim General Manager

Pasadena Water and Power (PWP) is pleased to present the **2021 Consumer Confidence Report on Water Quality**.

Pasadena's tap water is monitored daily and assessed by the standards established by the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board, Division of Drinking Water (DDW).

The Pasadena community uses approximately 25 million gallons of water each day, and PWP is proud to have the responsibility to ensure that Pasadena has a sufficient, safe, high-quality water supply. PWP offers a wide range of programs, incentives, and free workshops to educate customers on how to use water wisely. As the impact of climate change increases, drought conditions also worsen; it is imperative for Pasadena residents and business owners to take conscious steps to improve water-use efficiency.

Just as we rely on our community members to adopt *conservation as a way of life*, PWP has begun major efforts to ensure increased sustainability and resiliency in our water supply and distribution. Currently, Pasadena receives its water from two sources: local



Jeffrey Kightlinger
Interim General Manager

groundwater in the Raymond Basin aquifer, and imported water from The Metropolitan Water District of Southern California. PWP recently adopted a new Water System and Resources Plan (WSRP), which emphasizes the importance of local infrastructure and groundwater recharge in order to improve and support local supply. Investments in critical infrastructure are being proposed to capture more stormwater, efforts to pilot test small scale repurposed water for irrigation are underway, and the rehabilitation of

reservoirs and wells for continued reliable delivery of water throughout the city are being planned and built.

The Consumer Confidence Report is produced annually and includes information about Pasadena's drinking water sources, constituents found in drinking water, and how the quality of water compares to regulatory standards. I am proud to share that Pasadena's water complies with all federal and state drinking water standards.

To learn more, visit

PWPweb.com/WaterQuality

Sincerely,

Jeffrey Kightlinger

Interim General Manager

Questions about your water?

PWP welcomes your comments, questions, and participation.

For information about this report, or your water quality in general, please contact:

Brad Boman (626) 744-4278 (*in English*),
or **Tony Estrada (626) 744-3838** (*en Español*).

Public comments are also welcomed at the weekly Pasadena City Council meetings, held every Monday at 6:30 p.m. at City Hall, 100 N. Garfield Avenue.

This report is available electronically at **PWPweb.com/CCR2021**. Previous years' reports and additional water quality information are available at **PWPweb.com/WaterQuality**.

If you would like a copy of this report mailed to you, please call **(626) 744-8424**.

Pasadena Citizen Service Center: (626) 744-7311
Water Waste Hotline

(626) 744-8888
ww5.CityofPasadena.net/311

Rebates and Conservation Tips

(626) 744-6970 • PWPweb.com/SaveWater

Metropolitan Water District of Southern California

(213) 217-6000 • mwdh2o.com

**State Water Resources Control Board,
Division of Drinking Water**

(818) 551-2004

www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/publicwatersystems.shtml

**U.S. Environmental Protection Agency
Safe Drinking Water Hotline**

(800) 426-4791 • epa.gov/safewater

Hazardous Waste Disposal and Recycling

(888) CLEAN-LA • 888CleanLA.com

Constant Monitoring Ensures Continued Excellence

Pasadena's Water Supply

In 2021, PWP provided 28,541 acre-feet or 9.3 billion gallons of water annually, to serve more than 170,402 consumers in Pasadena, portions of the unincorporated areas of Altadena, East Pasadena and San Gabriel. Approximately 24 percent of the water supply was pumped from local groundwater, a lower percentage than usual due to performance of critical maintenance to infrastructure; whereas 76 percent came from imported surface water purchased from The Metropolitan Water District of Southern California (MWD). This year, no water was purchased from neighboring agencies that combine surface water and groundwater.

The Monk Hill Treatment Facility continues to operate and successfully remove perchlorate and volatile organic compounds from two groundwater wells in the northwest portion of Pasadena. The treatment system, combined with continued efficiency efforts and strategic local supply planning, helped decrease Pasadena's reliance on imported water. PWP



continues to explore possible opportunities to maximize use of local water supplies in a sustainable manner.

PWP's groundwater is pumped from the Raymond Groundwater Basin, a natural water-bearing zone underlying the communities of Pasadena, Altadena, La Cañada Flintridge, and portions of San Marino, Arcadia and Sierra Madre. Surface water from streams and precipitation enters the basin area through the natural water cycle. As surface water slowly percolates through the ground to the basin, the ground acts as a natural filter to help clean the water. PWP's water is disinfected with chlorine and chloramines (chlorine plus ammonia) prior to being distributed to customers.

MWD is a consortium of 26 cities and water agencies that import water from the Colorado River and from Northern California (State Water Project) to serve nearly 19 million people in Southern California. MWD supplies PWP with water treated at the Weymouth Filtration Plant in La Verne. MWD also uses chloramines to disinfect its water.

Drinking Water Contaminants

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 USEPA's Safe Drinking Water Hotline, (800) 426-4791.

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.

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.
- **Pesticides and herbicides** that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

- **Inorganic contaminants**

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

- **Organic chemical contaminants**, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

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



Water Quality

To ensure that tap water is safe to drink, the USEPA and the DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

Water Quality Issues that Could Affect Your Health

FEDERAL AND STATE REGULATIONS THAT IMPACT HEALTH & WATER QUALITY

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These individuals should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (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, (800) 426-4791.



Fluoride

Your purchased water is fluoridated. MWD, which typically supplies about 65 percent of PWP's drinking water, adds fluoride to their water supply to the level of 0.6 to 0.9 parts per million (ppm). Before drinking water is delivered to your home or business tap, the fluoridated water is blended with PWP's groundwater. Since PWP's groundwater has naturally occurring fluoride levels of 0.6 to 1.2 ppm, the resulting concentration of fluoride is an average of 0.8 ppm. At this range, fluoride has been proven to be effective in preventing tooth decay. For more information about fluoridation, oral health, and current issues, please visit PWPweb.com/WaterQualityFAQ.

Hardness

Water becomes hard as it passes over or through certain geological formations that contain calcium or magnesium. For example, groundwater becomes hard as it percolates down to the water table through limestone deposits containing calcium, or through dolomite and other magnesium bearing minerals that dissolve into water. Surface water imported to Pasadena is hard because it has passed over similar formations as it flows hundreds of miles from sources like the Colorado River and Northern California. Hard water causes white, scaly deposits on plumbing fixtures, cooking utensils, and dishwashers. It reduces the cleaning power of soap and detergent and causes buildup in water heaters, thus reducing its effective lifetime. PWP's water hardness ranges from 190 to 320 ppm or 11 to 19 grains per gallon. The average is approximately 244 ppm or 14 grains per gallon.



Though hardness causes aesthetic disadvantages, our bodies require calcium and magnesium and therefore there is no known negative health effect that is caused by hard water.

Nitrates

Nitrate, measured as Nitrogen, 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 a 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 certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

Lead and Copper

Under the Lead and Copper Rule (LCR), PWP tests the water at the tap of dozens of its customers every three years. Most testing occurs at the source of drinking water, such as wells, streams, and lakes. However, LCR samples are collected at the tap because lead and copper are almost never found in source waters and they occur most frequently in tap water because of the corrosion of household fixtures, such as brass in faucets.

The results of our testing indicate that the water does not exceed the Action Levels set in the LCR.

If you are concerned about the presence of lead or copper in your tap water, you can minimize the potential for lead and copper exposure by flushing your tap for 5 seconds before using water for drinking or cooking.



California's Worsening Drought Conditions – Do Your Part

California continues to experience severe drought conditions throughout the state with 2021 being recorded as California's driest year in a century. Now, California faces stressed ecosystems, diminished reservoir storage, impacted farming operations, and threats to our urban water supplies.

In August 2021, Pasadena City Council voted to enact a Level 2 Water Supply Shortage Plan, making



Pasadena the first city in the region to take a proactive approach to their watering schedule and addressing outdoor water waste. However, PWP urges customers to continue their water conservation efforts to help Pasadena reach its citywide, voluntary 15% conservation goal. With the drought persisting and conditions worsening, it is imperative for Pasadena residents and businesses to:

- Follow the Outdoor Watering Schedule, which can be found at PWPweb.com/Schedule.
- Replace turf with drought-tolerant and California native plants.
- Optimize irrigation systems by retrofitting to a drip irrigation system.
- Repair all leaks and adjust sprinkler spray to avoid water waste.

PWP offers robust support for customers through rebates, incentives, programs and free workshops. Learn more at

PWPweb.com/SaveWater

Arroyo Parkway Pipeline Project

As a community-owned utility with a rich and long-standing history, PWP is proud to have provided reliable water and power to Pasadena for more than a century. Parts of Pasadena's original water system remain in service today including 58 miles of water mains, which make up approximately 11% of PWP's total 510 miles of pipeline. PWP is making essential investments in these water assets through new development and capital improvements to improve infrastructure.

Beginning in May 2022 and continuing through June 2023, PWP will replace the existing eight-inch water main located along Arroyo Parkway. This water main is over 90 years old, making its replacement vital to maintaining the reliability and quality of water service. The project will affect Arroyo Parkway, spanning from Glenarm Street to Cordova Street. In order to minimize the impact of this project on residents and businesses in the area, construction efforts will be contained to approximately one block at a time. Learn more about this important project at

PWPweb.com/ArroyoParkwayProject



Important Information

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

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

Mahalaga ang impormasyon na nilalaman nito. Mangyaring ipasalin ito.

Այս գեղեցիկագիրը պարունակում է շատ կարևոր տեղեկություն Ձեր խմելու ջրի վերաբերյալ. Բարձրանե՛ք կամ խոսացե՛ք որևի՛շ անձի հետ որը կը հասկանա գեղեցիկագիրը:

この情報は重要です。翻訳を依頼してください。

此份有關你的食水報告,內有重要資料和訊息,請找他人為你翻譯及解釋清楚。

यह सूचना महत्वपूर्ण है। कृपा करके किसी से :सका अनुवाद कराये।

이 안내는 매우 중요합니다. 본인을 위해 번역인을 사용하십시오.

Данный рапорт содержит важную информацию о вашей питьевой воде. Переведите его или проконсультируйтесь с тем, кто его понимает.

City of Pasadena 2021 Groundwater and MWD Treated Surface Water Data

Parameter	MCL	PHG / MCLG	DLR / MRL	Pasadena Sources		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Typical	Range	Typical	Range		
Primary Standard (Monitored for health concerns)									
Radiologicals (pCi/L)⁽¹⁾									
Gross Alpha Particle Activity	15	n/a	3	7	ND – 14	ND	ND	No	Erosion of natural deposits
Uranium	20	0.43	1	9	3.2 – 16	2	1 – 3	No	Erosion of natural deposits
Combined Radium	5	0	1	ND	ND – 1.6	ND	ND	No	Erosion of natural deposits
Organic Compounds									
Tetrachloroethylene (PCE) (ppb)	5	0.06	0.5	ND	ND – 0.7	ND	ND	No	Discharge from factories, dry cleaners, and autosheds
Trichloroethylene (TCE) (ppb)	5	1.7	0.5	ND	ND – 1.2	ND	ND	No	Discharge from metal degreasing sites and other factories
Inorganic Compounds									
Aluminum (ppb)	1000	600	50	ND	ND	Highest Average (RAA) = 148	ND – 240	No	Erosion of natural deposits
Arsenic (ppb)	10	0.004	2	ND	ND – 2.2	ND	ND	No	Erosion of natural deposits, runoff from orchards and industrial processes
Barium (ppb)	1000	2000	100	ND	ND – 120	110	110	No	Erosion of natural deposits
Fluoride (ppm)	2	1	0.1	0.8	0.6 – 1.2	0.7	0.6 – 0.9	No	Water additive for dental health, erosion of natural deposits
Nitrate as N (ppm)	10	10	0.4	4.5	1.6 – 6.6	ND	ND	No	Runoff and leaching from fertilizer use, erosion of natural deposits
Perchlorate (ppb)	6	1	2	ND	ND	ND	ND	No	Industrial waste discharge
Secondary Standard (Monitored for aesthetic qualities such as taste, color, odor)⁽²⁾									
Chloride (ppm)	500	n/a	n/a	48	19 – 79	96	95 – 97	No	Runoff and leaching from natural deposits
Color (Units)	15	n/a	n/a	0	0	1	1	No	Naturally-occurring organic materials
Iron (ppb)	300	n/a	100	ND	ND – 73	ND	ND	No	Erosion of natural deposits; industrial wastes
Odor (Units)	3	n/a	1	0	0 – 2	1	1	No	Naturally-occurring organic materials
Specific Conductance (µS/cm)	1600	n/a	n/a	612	500 – 790	964	962 – 965	No	Substances that form ions when in water
Sulfate (ppm)	500	n/a	0.5	85	35 – 169	219	217 – 221	No	Runoff and leaching from natural deposits
Total Dissolved Solids (ppm)	1000	n/a	n/a	378	310 – 490	604	599 – 609	No	Runoff and leaching from natural deposits
Turbidity (NTU)	5	n/a	0.1	0.7	0.1 – 1.9	ND	ND	No	Soil runoff
Other Parameters									
Alkalinity (ppm)	n/a	n/a	n/a	186	160 – 210	126	123 – 128	No	n/a
Calcium (ppm)	n/a	n/a	n/a	69	56 – 86	67	64 – 70	No	n/a
Corrosivity (LSI)	n/a	n/a	n/a	-0.9	-0.9	0.56	0.52 – 0.61	No	n/a
Magnesium (ppm)	n/a	n/a	n/a	18	12 – 27	26	25 – 26	No	n/a
pH (pH Units)	n/a	n/a	n/a	6.8	6.7 – 7.0	8.1	8.1	No	n/a
Potassium (ppm)	n/a	n/a	n/a	2.2	1.4 – 2.9	4.6	4.4 – 4.7	No	n/a
Sodium (ppm)	n/a	n/a	n/a	34	25 – 44	98	95 – 101	No	n/a
Total Hardness (ppm)	n/a	n/a	n/a	244	190 – 320	272	270 – 273	No	n/a

Understanding the Water Quality Chart

As in previous years, the Water Quality Report compares the quality of your tap water to state and federal drinking water standards. The report includes information on all regulated and unregulated drinking water contaminants that were detected during calendar year 2021. More than 100 regulated contaminants that were tested for, but not detected, are not included in this report. A number of regulated chemicals and other compounds do not require annual monitoring. Their most recent test results and corresponding test year are footnoted, if applicable. DDW allows PWP to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

Maximum Contaminant Level (MCL): 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 are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

Public Health Goal (PHG): 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 Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. The addition of a disinfectant is necessary for the control of microbial contaminants.

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

Maximum Residual Disinfectant Level Goal (MRDLG): 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.

Detection Limits for Purposes of Reporting (DLR): The DLR is a parameter that is set by regulation for each reportable analyte. It is not laboratory specific and it is independent of the analytical

method used (in cases where several methods are approved). It is expected that a laboratory can achieve a Reporting Limit that is lower than or equal to the DLR set by the DDW. This is also known as the Minimum Reporting Level (MRL).

NA: Contaminant or property was not analyzed.

n/a: Not applicable.

ND: Contaminant was not detected. The contaminant is less than the DLR.

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

Units of Measurement:

ppm = parts per million

ppb = parts per billion

pCi/L = picocuries per liter

LSI = Langelier Saturation Index

µS/cm = microsiemens per centimeter

NTU = Nephelometric Turbidity Units.

City of Pasadena Water Distribution System

Parameter	MCL	PHG	DLR / MRL	Pasadena Water System		MCL Violation	Typical Source of Contaminant
				Highest Average	Range		
Disinfection By-Products and Disinfectant Residuals (D/DBP) ⁽³⁾							
TTHM [Total Trihalomethanes] (ppb)	80	n/a	n/a	Highest Average (LRAA) = 44	1.2 – 73	No	By-products of drinking water disinfection
HAA5 [Haloacetic Acids] (ppb)	60	n/a	n/a	Highest Average (LRAA) = 16	0 – 32	No	By-products of drinking water disinfection
Bromate (ppb)	10	0.1	1	n/a	n/a	No	By-products of drinking water oxonation
Total Chlorine Residual (ppm)	MRDL = 4	MRDLG = 4	n/a	Highest Average (RAA) = 1.4	ND – 2.7	No	Drinking water disinfectant added for treatment
Microbiological (%)							
Total Coliform Bacteria (%)	5	0	n/a	Highest Monthly Average = 1.2%	0 – 1.2%	No	Naturally present in the environment

City of Pasadena Water Distribution System – Lead and Copper Levels at Residential Taps⁽⁴⁾

Parameter	AL	PHG	DLR / MRL	Pasadena Water System		MCL Violation	Typical Source of Contaminant
				90 th Percentile	Number of Sites Exceeding AL		
Lead (ppb)	15	0.2	5	ND	2 out of 82	No	Internal corrosion of household water plumbing system
Copper (ppm)	1.3	0.3	0.05	0.26	0 out of 82	No	Internal corrosion of household water plumbing system

Detection of Unregulated Contaminants

Parameter	MCL	PHG / MCLG	DLR / MRL	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Typical	Range	Typical	Range		
Hexavalent Chromium (ppb) ⁽⁵⁾	n/a	0.02	1	2.3	ND – 4.1	ND	ND	n/a	Erosion of natural deposits, industrial waste discharge

Federal Unregulated Contaminants Monitoring Rule (UCMR 4)⁽⁶⁾

Parameter	MCL	PHG / MCLG	DLR / MRL	Pasadena Water System		MCL Violation	Typical Source of Contaminant
				Average	Range		
Total Microcystins (ppb)	n/a	n/a	0.30	ND	ND	n/a	Produced from cyanobacterial cells
Microcystin-LA (ppb)	n/a	n/a	0.008	ND	ND	n/a	Produced from cyanobacterial cells
Microcystin-LF (ppb)	n/a	n/a	0.006	ND	ND	n/a	Produced from cyanobacterial cells
Microcystin-LR (ppb)	n/a	n/a	0.02	ND	ND	n/a	Produced from cyanobacterial cells
Microcystin-LY (ppb)	n/a	n/a	0.009	ND	ND	n/a	Produced from cyanobacterial cells
Microcystin-RR (ppb)	n/a	n/a	0.006	ND	ND	n/a	Produced from cyanobacterial cells
Microcystin-YR (ppb)	n/a	n/a	0.02	ND	ND	n/a	Produced from cyanobacterial cells
Nodularin (ppb)	n/a	n/a	0.005	ND	ND	n/a	Produced from cyanobacterial cells
Anatoxin-a (ppb)	n/a	n/a	0.03	ND	ND	n/a	Produced from cyanobacterial cells
Cylindrospermopsin (ppb)	n/a	n/a	0.09	ND	ND	n/a	Produced from cyanobacterial cells
HAA5 (ppb)	n/a	n/a	0.2	6.7	0.9 – 20	n/a	By-products of drinking water disinfection
HAA6Br (ppb)	n/a	n/a	0.2	7.8	0.8 – 21	n/a	By-products of drinking water disinfection
HAA9 (ppb)	n/a	n/a	0.2	12.8	1.2 – 37	n/a	By-products of drinking water disinfection
Tribromoacetic acid (ppb)	n/a	n/a	2.0	ND	ND – 2.6	n/a	By-products of drinking water disinfection
Trichloroacetic acid (ppb)	n/a	n/a	0.5	1.5	ND – 5.7	n/a	By-products of drinking water disinfection
alpha-hexachlorocyclohexane (ppb)	n/a	n/a	0.01	ND	ND	n/a	By-product of insecticide production
Chlorpyrifos (ppb)	n/a	n/a	0.03	ND	ND	n/a	Used as an insecticide, acaricide and miticide
Dimethipin (ppb)	n/a	n/a	0.2	ND	ND	n/a	Used as an herbicide and plant growth regulator
Ethoprop (ppb)	n/a	n/a	0.03	ND	ND	n/a	Used as an insecticide
Oxyfluorfen (ppb)	n/a	n/a	0.05	ND	ND	n/a	Used as an herbicide
Profenofos (ppb)	n/a	n/a	0.3	ND	ND	n/a	Used as an insecticide and acaricide
Tebuconazole (ppb)	n/a	n/a	0.2	ND	ND	n/a	Used as a fungicide
Total Permethrin (trans & cis) (ppb)	n/a	n/a	0.04	ND	ND	n/a	Used as an insecticide
Tribufos (ppb)	n/a	n/a	0.07	ND	ND	n/a	Used as an insecticide and cotton defoliant
Butylated hydroxyanisole (ppb)	n/a	n/a	0.03	ND	ND	n/a	Used as a food additive (antioxidant)
O-Toluidine (ppb)	n/a	n/a	0.007	ND	ND	n/a	Used in the production of dyes, rubber, pharmaceuticals and pesticides
Quinoline (ppb)	n/a	n/a	0.02	ND	ND	n/a	Used as a pharmaceutical (anti-malarial) and flavoring agent; produced as a chemical intermediate; component of coal
1-Butanol (ppb)	n/a	n/a	2.0	ND	ND	n/a	Used as a solvent, food additive and in production of other chemicals
2-Methoxyethanol (ppb)	n/a	n/a	0.4	ND	ND	n/a	Used in a number of consumer products, such as synthetic cosmetics, perfumes, fragrances, hair preparations and skin lotions
2-Propen-1-ol (ppb)	n/a	n/a	0.5	ND	ND	n/a	Used in the production of flavorings, perfumes and other chemicals
Germanium (ppb)	n/a	n/a	0.3	ND	ND	n/a	Naturally present in the environment
Manganese (ppb)	n/a	n/a	0.4	0.4	ND – 1.8	n/a	Naturally present in the environment
Bromide (ppb)	n/a	n/a	5.0	63	44 – 81	n/a	By-products of drinking water disinfection
Total Organic Carbon (TOC) (mg/L)	n/a	n/a	0.3	2.1	1.9 – 2.2	n/a	By-product of decaying natural organic matter

Footnotes:

- 1) The data for Pasadena is collected on a monitoring schedule based on radionuclide Rule (Section 64442, Title 22, California Code of Regulations). Results are based on 2014, 2018, and 2021 monitoring.
- 2) There are no PHGs, MCLGs or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetics.
- 3) The MCL for TTHM and HAA5 are based on the Location Running Annual Average (LRAA) and the MRDL for bromate and total chlorine residual are based on the Running Annual Average (RAA).
- 4) Lead and Copper values are based on triennial monitoring at residential taps. Results are based on 2020 monitoring.
- 5) The previous MCL of 10 ppb was withdrawn on September 11, 2017. There is currently no MCL for hexavalent chromium.

- 6) Data was collected in both 2019 and 2020 for Unregulated Chemical Monitoring Rule 4

For more information or questions about this report, or your water quality in general, please contact Brad Boman (626) 744-4278 (in English), or Tony Estrada (626) 744-3838 (en Español).

Hügels *A Nature-Based Technology to Improve Soil Health and Save Water*

PWP is piloting a centuries-old, European horticultural technique — Hügelkultur — with the goal of reducing irrigation in municipal landscape settings. PWP was awarded a grant from the Bureau of Reclamation to build hügel at several City sites and educate residents how we can use a nature-based technology to build healthy soil and save water in our landscapes. Hügelkultur is a no-dig technique that utilizes both fresh and decaying logs, debris and other compostable biomass in a raised and mounded bed on which plants, trees, and shrubs can be planted.

Hügels have the ability to retain significant amounts of moisture through these four complimentary processes:

- **Rainwater capture.** The mounded hügel has increased surface area to capture more rainwater.

Capture can be maximized with the concurrent usage of bioswales and berms to channel and infiltrate rainwater.

- **The hügel's "sponge."** The slowly decomposing biomass in the hügel acts as a sponge that retains water over a long period of time.



- **Ongoing condensation** occurs due to the temperature differential created by the thermal mass of dense logs within the hügel and the moisture bearing night air.

- **Hügels are an ideal medium** in which

mycorrhizal fungi can

flourish, infiltrating the entire bed of piled logs, converting their carbon into nourishment for plants growing above, and distributing moisture horizontally to the plants and trees surrounding the hügel.

To date, PWP has completed four hügel at two different locations, and is currently constructing two additional sites. The new Sheldon Reservoir Demonstration Garden features two hügel, while an additional two were built in the Arroyo

Seco. Throughout the process, PWP has engaged the community and invited volunteers to be part of the building and learn through hands-on workshops.

Learn more about this permaculture technique, and how to apply it in your own landscape, at

PWPweb.com/Hugel



Direct-Install Programs to Help You Save Money and Optimize Efficiency

For customers interested in improving their home or business with efficiency measures, PWP has multiple programs designed to support the community.

The Water and Energy Direct Install Program (WeDIP) is for small- and medium-sized businesses with a particular focus on businesses located with Pasadena's Disadvantaged Community Area. Through WeDIP, commercial customers can receive free water and energy efficiency measures including ice machines, dishwashers, toilets, LED lights, and more. Qualifying customers can receive up to \$7,500 of water and energy-saving equipment installed at no cost.

Learn more at

PWPweb.com/WeDIP

Pasadena homeowners can receive up to \$4,000 in home improvements that reduce energy and water use. PWP's Home Improvement Program offers free, personalized services including home evaluations, customized savings tips, and the installation of efficient products like high-efficiency toilets, smart thermostats, low-flow showerheads and more.

To learn more about the Home Improvement Program, visit

PWPweb.com/HIP



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