

**Attachment 3**

**2010, 2011, 2012 Consumer Confidence Report**

# CONSUMER CONFIDENCE REPORT ON Water Quality

# 2010



PASADENA  
**Water&Power**  
SERVING THE COMMUNITY SINCE 1906



## To Our Customers:

Pasadena Water and Power is pleased to present the 2010 Consumer Confidence Report on Water Quality. Once again, we are proud to announce that your tap water met all drinking water quality standards set by the U.S. Environmental Protection Agency and the California Department of Public Health.

As your community-owned utility, PWP is committed to engaging its customers in the vital task of sustaining a reliable and safe water supply. In 2010 we embarked on the development of a Water Integrated Resources Plan to ensure future water supply. This required many hours of community dialogue. We also completed the construction phase of the Monk Hill Treatment Plant to remove contaminants from the groundwater and began the installation of solar panels on the adjacent Windsor Reservoir. We appreciate the support of the neighboring community. Water conservation efforts in 2010 led to another 10 percent reduction in water use. We want to thank you, our customers, for your continued efforts in conserving and safeguarding our water supplies.

Sincerely,

Phyllis E. Currie, General Manager

## Your Water Supply

In 2010, Pasadena Water and Power (PWP) produced 29,534 acre-feet of water, or 9.6 billion gallons, to serve 175,957 customers in Pasadena, parts of Altadena, and other surrounding areas of Los Angeles County. Approximately 32 percent of the water supply was pumped from our local groundwater, 67 percent was imported surface water purchased from the Metropolitan Water District of Southern California (MWD), and the remaining 1 percent was purchased from neighboring water agencies that combine surface water and groundwater.

PWP's groundwater is pumped from the Raymond Groundwater Basin, a natural water-bearing zone underlying Pasadena, Altadena, La Cañada-Flintridge, and portions of San Marino and Arcadia. Surface water from streams, rivers, lakes, 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 strip the water of most contaminants. PWP disinfects the water with chlorine prior to pumping the water into the distribution system.

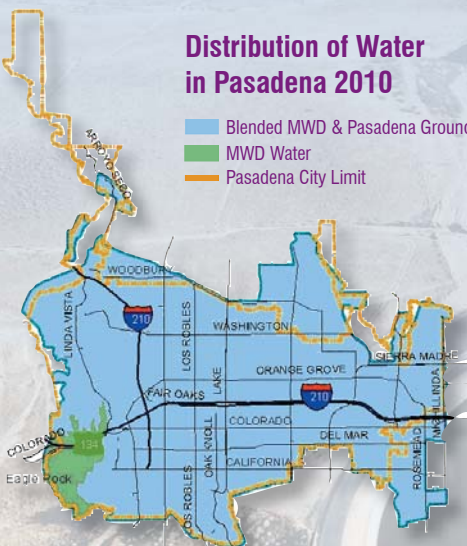
MWD is a consortium of 26 cities and water agencies that imports wholesale water from the Colorado River and from the Sacramento and San Joaquin rivers in Northern California to serve nearly 19 million people in Southern California. MWD supplies PWP with water treated at the Weymouth Filtration Plant in La Verne. Due to drought and pumping restrictions, the Weymouth Plant received only about 26 percent of its water from Northern California in 2010. The remaining 74 percent came from the Colorado River. MWD uses chloramines (chlorine plus ammonia) to disinfect its water.

### MWD's Water Imports to Southern California

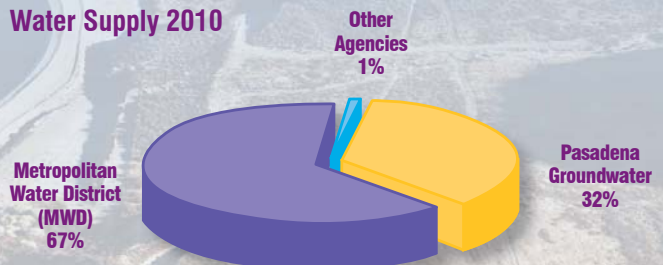


### Distribution of Water in Pasadena 2010

- Blended MWD & Pasadena Groundwater
- MWD Water
- Pasadena City Limit



### Sources of Pasadena's Water Supply 2010

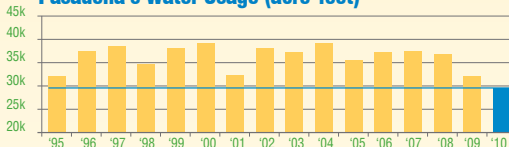


# Water Shortage Update & Supply Outlook

## RECORD CONSERVATION IN PASADENA

Local and regional water shortages continued throughout 2010 and into 2011, as did our customers' extraordinary water conservation trend. In 2010, citywide water use was down 20 percent versus base year 2006 (a savings of 2.5 billion gallons), topping our 14-year record from the previous year. PWP attributes these savings to its customers' widespread adoption of reduced outdoor watering schedules and more water-efficient equipment in the home and workplace.

### Pasadena's Water Usage (acre-feet)



## WATER SHORTAGE ENDS, WATER WASTE PROHIBITIONS REMAIN

It's a commonplace saying that "every drop counts," but in Pasadena it's a profound truth. Two years of drop-by-drop water saving both here and across Southern California, coinciding with two years of above-average rainfall, has added up to replenished reservoirs and groundwater basins. In spring 2011, the Metropolitan Water District, on whom Pasadena relies for about two-thirds of its supply, announced that its current supplies are sufficient to meet all member agencies' demand for at least a year. With this improved supply outlook in mind, Pasadena City Council declared the Level 1 Water Shortage over as of May 9, 2011.

While city restrictions on watering days ended along with the water shortage, Pasadena's 13 prohibitions on water waste remain permanent. Whether or not a water shortage exists, safe drinking water will always be a limited resource and must not be wasted. Prohibitions on waste include: no running automatic sprinklers between 9 a.m. and 6 p.m.; no watering during rain; and no hosing down pavement. See the sidebar (right) for more information.

## PREPARING FOR FUTURE CHALLENGES

Two years of restrictions on watering days was key to reducing citywide water use, but did nothing to diminish the renowned beauty of our gardens and parkways. If anything, plants and lawns have become healthier on a more sensible watering regime. Ever more popular water-wise gardens have added more color, texture and variety to our streetscapes.

PWP recommends that customers continue watering no more than three days per week in warm months, and just once per week during cooler months. Not only will you see that your plants are hardier for it, but our storage facilities and basins will stay full longer and better prepared for emergencies.

Remember, a water shortage can occur for a variety of reasons:

- Excessive demand outstripping supply
- A planned pipeline shutdown, such as the one that occurred in March 2011

- An unplanned emergency that damages infrastructure or pollutes water supply
- Legislation or legal battles that disrupt water rights or deliveries
- Short- or long-term drought

## A 25-YEAR PLAN FOR RELIABLE WATER SUPPLY

Cooperative efforts between customers and PWP in 2010 were concerned with more than just conserving current water resources. A year-long community dialogue also culminated with a 25-year plan for securing Pasadena's long-term water supply. Representing a consensus among hundreds of public participants, PWP staff, a citizens' advisory committee, resource planning consultants, elected officials and Pasadena's Environmental Advisory Committee, PWP's first-ever Water Integrated Resource Plan (WIRP) was adopted by City Council on January 31, 2011.

The WIRP is our city's roadmap to reliable, cost-effective and eco-sustainable water supply. It emphasizes procuring alternative water resources, improving existing infrastructure and resources, and aggressive conservation. These strategies will boost local supply, mitigate cost fluctuations, advance the city's environmental goals, and buffer Pasadena from outside forces such as drought and pumping restrictions.

In the next five years, the adopted plan calls for these key actions:

- maximizing storage of mountain runoff;
- promoting on-site stormwater capture;
- storing more imported water in the Raymond Basin;
- constructing a recycled water distribution system for irrigation; and
- enhancing customer programs that promote water efficiency and conservation.

The final adopted WIRP is available online at [www.PWPweb.com/waterplan](http://www.PWPweb.com/waterplan).

## LOCAL SUPPLY GETS A BOOST FROM NEW TREATMENT PLANT

Throughout 2010 PWP pressed forward with construction of the Monk Hill Groundwater Treatment Plant, which will begin serving water on a regular basis in July 2011. The new plant will remove perchlorate and volatile organic compounds (VOCs) from four deep wells in northwest Pasadena. These wells have been inactive for many years due to contamination from rocket testing decades ago at nearby Jet Propulsion Laboratory.

The City of Pasadena collaborated with the National Aeronautics and Space Administration (NASA) on construction of the plant, public outreach and the environmental review process. The state-of-the-art plant will be able to treat 7,000 gallons of groundwater per minute to meet all regulatory standards, thus restoring another source of safe drinking water to PWP customers.

2,772 solar panels on top Windsor Reservoir offset pumping activity at the Monk Hill Treatment Plant.

## PERMANENT WATER WASTE PROHIBITIONS

Whether a water shortage exists or not, water waste is prohibited in Pasadena. Warnings and fines up to \$1000 are used to enforce the Water Shortage Procedures Ordinance (PMC 13.10).

- No watering outdoors between 9 a.m. and 6 p.m., except with a hand-held container or hose with a shut-off nozzle;
- No watering during periods of rain;
- No excessive water runoff from irrigating landscapes or vegetation of any kind;
- Sprinkler and plumbing leaks or malfunctions must be fixed within 7 days;
- No washing down paved surfaces unless for safety or sanitation, in which case a water saving device must be used;
- Fountains and water features must have a re-circulating water system;
- Vehicles must be washed with a hand-held bucket and/or hose with a shut-off nozzle (does not apply to commercial car washes);
- Restaurants may serve drinking water only by request and must use water-saving dish wash spray valves.

For more information or to report waste, call the Water Shortage Hotline at 744-8888 or visit [www.PWPweb.com/watershortage](http://www.PWPweb.com/watershortage)

# Water-Smart Programs from PWP

## “THE H2O ACADEMY”

Want to get water-wise? You can become an A+ water saver with PWP’s “H2O Academy,” a suite of educational resources available at PasadenaSavesWater.com

### ✓ Pasadena’s Water-Smart Landscaping Guide -

Search photos of hundreds of Pasadena-friendly plants, get watering and plant-care tips, and save favorites to help you plan your dream water-smart landscape

✓ **Free Workshops** - Register for expert-led seminars on turf removal, rainwater harvesting, native plants and efficient irrigation

✓ **How-To Videos** - Watch video shorts on turf removal, drip irrigation, leak detection, programming irrigation controllers and understanding your bill

✓ **“Savvy Saver” Checklist** - Stay on top of all the ways to cut down water waste at home and in the workplace

✓ **“H2OUSE” Virtual Home Audit** - Find out how much water is typically used in and around the home, and set a customized water budget for yours



### Be water wise **INDOORS** ... Save up to...

Wash only full loads of laundry and dishes	50 gallons per load
Shorten your shower	2.5 gallons per minute
Fix broken toilet valves and leaky faucets	50 gallons per day
Turn off the faucet when brushing teeth, shaving and scrubbing dishes	2 gallons per minute

### Be water wise **OUTDOORS** ... Save up to...

Cut lawn watering schedule to 3 times a week or less	Thousands of gallons per year
Check sprinklers for leaks, overspray and damage	500 gallons per month
Use mulch to reduce evaporation	Hundreds of gallons per year



# Rebates\*

## “TURF REPLACEMENT PROGRAM”

Lawns typically use 50 percent more water than other plants. With the launch of PWP’s new Turf Replacement Program on August 1, 2011, all customers can get a water-smart landscape makeover for less. You can get \$1 for every square foot of water-thirsty grass that you replace with water-wise plants or a combination of these plants and water-permeable groundcover such as mulch.

To qualify for the rebate, you must apply for the program and reserve funds on or after August 1; submit project plans to replace at least 250 square feet of turf grass with qualifying materials; and pass a pre-inspection BEFORE removing old turf and new planting begins.

Get full program rules and restrictions at [www.PWPweb.com/TurfRemoval](http://www.PWPweb.com/TurfRemoval)

High Efficiency Clothes Washers  
**\$250 Rebate**

Rotating Sprinkler Nozzles  
**\$5 Rebate**

Smart Irrigation Controllers  
**\$200 Rebate**

Replace turf grass with water-smart landscaping  
**\$1 per square foot**

\*Rebate amounts subject to change at any time.

Rebates on Dozens of Energy-Efficient Products and 37 Species of Shade Trees

Special Rebates for Commercial Customers

Go to [PWPweb.com/rebates](http://PWPweb.com/rebates)



# Water Quality

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) 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 provide the same protection for public health.


## 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 1 (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.
- 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.
- 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, 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 that can be naturally-occurring or be the result of oil and gas production and mining activities.



Hydrant flushing ensures safe drinking water and adequate pressure for fire safety.

## IMPORTANT HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice from their health care provider about drinking water. 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 1 (800) 426-4791.



## Other Factors Affecting Water Quality

### NITRATES

Nitrate in drinking water at levels above 45 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 45 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

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. Pasadena Water and Power (PWP) is 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 1 (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.

### FLUORIDE

Your purchased water is fluoridated. The Metropolitan Water District of Southern California (MWD), which supplies about 67 percent of PWP's drinking water, adds fluoride to their water supply to the level of 0.7 to 1.0 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 0.4 to 1.5 ppm, the resulting concentration of fluoride is 0.44 to 1.46 ppm in our community drinking water, with an average of 0.94 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 [www.cdph.ca.gov/certic/drinkingwater/Pages/Fluoridation.aspx](http://www.cdph.ca.gov/certic/drinkingwater/Pages/Fluoridation.aspx).

### 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 the Colorado River and Northern California.

For these reasons the hardness level of the water at your tap is very high. 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 hot water heaters, thus reducing its effective lifetime. PWP's water hardness ranged from 138 to 435 parts per million (ppm) or 8.1 to 25.4 grains per gallon in 2010. The average is 237 ppm or 13.8 grains per gallon. Though hardness causes aesthetics disadvantages, our bodies require calcium and magnesium and therefore there is no known health effect that is caused by hard water.

Pasadena Water and Power performs nearly 30,000 analytical tests every year to safeguard water quality.

# Water Quality Test Data 2010

## UNDERSTANDING THE WATER QUALITY CHART

As in previous years, the Water Quality Report compares the quality of your tap water to state drinking water standards. The report includes information on all regulated and unregulated drinking water contaminants that were detected during calendar year 2010. 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.

**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 U.S. Environmental Protection Agency.

**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.

**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 (MRDL):** 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.

**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.

**NA:** Contaminant or property was not analyzed.

**n/a:** Not applicable.

**ND:** Contaminant was not detected.

**Regulatory 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  
**ppt** parts per trillion  
**pCi/L** picocuries per liter  
**LSI** Langelier Saturation Index  
**µS/cm** microsiemens per centimeter  
**NTU** Nephelometric Turbidity Units.

## PASADENA GROUNDWATER AND MWD TREATED SURFACE WATER DATA

Parameter	MCL	PHG (MCLG)	Pasadena Wells		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			Average	Range	Average	Range		
<b>Primary Standard (Monitored for health concerns)</b>								
<b>Radiologicals <sup>(1)</sup></b>								
Gross Alpha Particle Activity (pCi/L) <sup>(2)</sup>	15	(0)	6.82	ND - 16	5.2	ND - 7.6	No	Erosion of natural deposits
Gross Beta Particle Activity (pCi/L) <sup>(3)</sup>	50	(0)	NA	NA	4.2	ND - 9.7	No	Decay of natural and man-made deposits
Radium 226 (pCi/L)	n/a	0.05	0.09	ND - 0.34	ND	ND	No	Erosion of natural deposits
Radium 228 (pCi/L)	n/a	0.19	0.16	ND - 1.30	ND	ND	No	
Uranium (pCi/L)	20	0.43	10.13	1.70 - 17.00	2.9	2.4 - 3.4	No	
<b>Volatile Organic Compounds</b>								
cis-1,2-Dichloroethylene (c-1,2-DCE) (ppb) <sup>(2)</sup>	6	100	1.2	ND - 13.8	ND	ND	No	Discharge from industrial chemical factories
Tetrachloroethylene (PCE) (ppb) <sup>(2)</sup>	5	0.06	1.3	ND - 9.8	ND	ND	No	Discharge from factories, dry cleaners, and autoshops
Trichloroethylene (TCE) (ppb) <sup>(2)</sup>	5	1.7	2.0	ND - 21.6	ND	ND	No	Discharge from metal degreasing sites and other factories
<b>Inorganic Compounds</b>								
Aluminum (ppm)	1	0.6	ND	ND	0.11	ND - 0.20	No	Erosion of natural deposits
Arsenic (ppb)	10	0.004	ND	ND	1.9	ND - 2.7	No	
Barium (ppm)	1	2	0.02	ND - 0.11	0.11	ND - 0.13	No	
Fluoride (ppm)	2	1	0.9	0.4 - 1.5	0.9	0.7 - 1.0	No	Water additive for dental health Erosion of natural deposit
Nitrate (ppm) <sup>(2)</sup>	45	45	29.5	ND - 48.4	1.4	ND - 1.8	No	Runoff and leaching from fertilizer use Erosion of natural deposits
Perchlorate (ppb) <sup>(2)</sup>	6	6	5.3	ND - 12.7	ND	ND	No	Industrial waste discharge

**PASADENA GROUNDWATER AND MWD TREATED SURFACE WATER DATA**

Parameter	MCL	PHG (MCLG)	Pasadena Wells		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			Average	Range	Average	Range		
<b>Secondary Standard (Monitored for aesthetic qualities such as taste, color, odor) (4)</b>								
Chloride (ppm)	500	n/a	40	14 - 80	88	84 - 94	No	Runoff and leaching from natural deposits
Color (Units)	15	n/a	1	ND - 5	1	1 - 1	No	Naturally-occurring organic materials
Odor (Units)	3	n/a	ND	ND	2	2 - 2	No	
Specific Conductance (µS/cm)	1600	n/a	609	461 - 933	889	460 - 1000	No	Substances that form ions when in water
Sulfate (ppm)	500	n/a	72	27 - 191	194	160 - 250	No	Runoff and leaching from natural deposits
Total Dissolved Solids (ppm)	1000	n/a	346	240 - 554	532	470 - 630	No	
Turbidity (NTU)	5	n/a	0.06	0.04 - 0.08	0.05	0.03 - 0.06	No	Soil runoff
Zinc (ppm)	5	n/a	0.03	ND - 0.13	ND	ND	No	Runoff and leaching from natural deposits
<b>Other Parameters</b>								
Alkalinity (ppm)	n/a	n/a	180	115 - 234	107	63 - 130	No	n/a
Calcium (ppm)	n/a	n/a	56	41 - 75	57	49 - 71	No	n/a
Chromium VI (ppb)	n/a	n/a	NA	NA	0.06	0.04 - 0.10	No	Industrial waste discharge, could be naturally present as well
Corrosivity (LSI)	n/a	n/a	0.24	0.07 - 0.36	0.23	0.13 - 0.33	No	n/a
Magnesium (ppm)	n/a	n/a	23	8 - 60	23	20 - 28	No	n/a
pH (pH Units)	n/a	n/a	7.6	7.4 - 7.8	7.9	7.6 - 8.6	No	n/a
Sodium (ppm)	n/a	n/a	39	27 - 50	89	83 - 98	No	n/a
Total Hardness (ppm)	n/a	n/a	237	138 - 435	237	84 - 300	No	n/a

(1) Pasadena and MWD are required to test for Radiologicals every three years. The most recent samples were collected in 2008 and 2009.

(2) Pasadena well water is blended with MWD water before being delivered to the customer. Once blended, the chemical was well below the MCL.

(3) The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. CDPH considers 50 pCi/L to be the level of concern for beta particles.

(4) There are no PHGs, MCLGs, or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetics.

**PASADENA WATER DISTRIBUTION SYSTEM AND MWD TREATED SURFACE WATER DATA**

Parameter	MCL	PHG	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			Average	Range	Average	Range		
<b>Disinfection By-Products and Disinfectant Residuals</b>								
TTHM [Total Trihalomethanes] (ppb) (5)	80	n/a	38.9	ND - 84.1	44	26 - 65	No	By-products of drinking water disinfection
HAA5 [Haloacetic Acids] (ppb)	60	n/a	15.3	ND - 46	15	8 - 24	No	
Total Chlorine Residual (ppm)	MRDL=4	MRDLG=4	1.3	0.2 - 2.2	2.3	1.2 - 2.9	No	Drinking water disinfectant added for treatment
<b>Microbiological (%)</b>								
Total Coliform Bacteria (%) (6)	5	(0)	0.62	0 - 2.16	0.1	ND - 0.3	No	Naturally present in the environment

(5) The MCL for TTHM, HAA5, and Total Chlorine Residual is based on a Running Annual Average (RAA) of test results taken throughout 2010. While the concentration of TTHM in Pasadena's water ranged from ND to 84.1 ppb, its running annual average in 2010 was 38.9 ppb; well below the MCL of 80 ppb and in full compliance with state and federal water quality standards.

(6) Between 130 to 168 samples were taken monthly from Pasadena's distribution system for the total coliform test. No more than 5% of the monthly samples may be total coliform positive.

**PASADENA WATER DISTRIBUTION SYSTEM - LEAD AND COPPER LEVELS AT RESIDENTIAL TAPS (7)**

Parameter	AL	PHG	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			90th Percentile	#Site Exceeding Action Level	90th Percentile	# Site Exceeding Action Level		
Lead (ppb)	15	0.2	2.1	0 out of 51	n/a	n/a	No	Internal corrosion of household water plumbing system
Copper (ppm)	1.3	0.3	0.17	1 out of 51	n/a	n/a	No	

(7) Pasadena is required to test a minimum of 50 homes for lead and copper every three years. Of the 51 homes tested in 2008, one sample exceeded the copper action level (at 2.3 ppm), while lead was not detected. Copper resampling of the home yielded a measurement of 0.32 ppm, which is well below the action level. The next Lead and Copper sampling will take place in July 2011.





PASADENA

Water&Power

SERVING THE COMMUNITY SINCE 1906

PASADENA WATER & POWER  
150 S. Los Robles Ave., Suite 200  
Pasadena, CA 91101

PRSRT STD  
U.S. Postage  
PAID  
Pasadena, CA  
Permit #484

## IMPORTANT INFORMATION INSIDE

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

### Water Quality Questions

David E. Kimbrough, Ph.D. (English)  
(626) 744-7315  
Tony Estrada (Español)  
(626) 744-3838

### Report Water Waste

(626) 744-8888  
[www.PWPweb.com/watershortage](http://www.PWPweb.com/watershortage)

### Rebates and Conservation Tips

(626) 744-6970  
[www.PasadenaSavesWater.com](http://www.PasadenaSavesWater.com)

### Metropolitan Water District of Southern California (MWD)

(213) 217-6000  
[www.mwdh2o.com](http://www.mwdh2o.com)

### California Department of Public Health Division of Drinking Water and Environmental Management

(818) 551-2004  
[www.cdph.ca.gov/DDWEM](http://www.cdph.ca.gov/DDWEM)

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

(800) 426-4791  
[www.epa.gov/safewater](http://www.epa.gov/safewater)

### Hazardous Waste Disposal & Recycling

(888) CLEAN-LA  
[www.888CleanLA.com](http://www.888CleanLA.com)

Pasadena Water & Power welcomes your comments, questions, and participation. Comments from the public are also welcomed at weekly Pasadena City Council meetings, held every Monday at 6:30 pm at City Hall, 100 North Garfield Avenue.

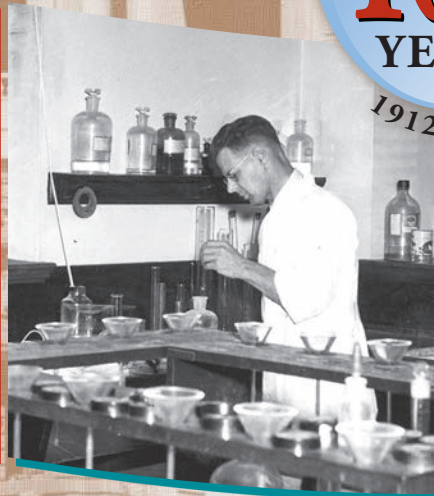
For an online version of this report, visit  
[www.PWPweb.com/WaterQuality](http://www.PWPweb.com/WaterQuality)



# Consumer Confidence Report

# WATER QUALITY 2011

PASADENA  
WATER CENTENNIAL



PASADENA

Water & Power

SERVING THE COMMUNITY SINCE 1906

# TO OUR CUSTOMERS:

Each year we issue this report because we strongly believe in the importance of informing our customers about the quality of the water they drink.

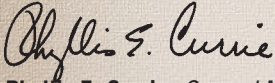
This year, as your municipal water utility proudly marks a century of water service in Pasadena and its environs, we hope this report also helps you understand the truly vital role that safe, reliable water has played in making Pasadena the vibrant city it is today.

Native tribes and European settlers were drawn to what we know as Pasadena because of its flowing waters. With Benjamin Eaton's development of ditch irrigation, and later the first enclosed pipeline, to sustain homesteads and orchards, the promise of convenient, reliable water service helped throttle Pasadena into its first boom in the late 19th century.

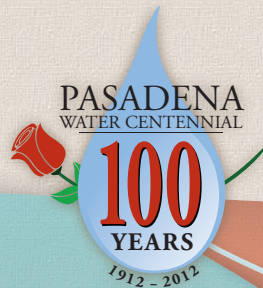
In 1912 Pasadena City Council voted to purchase the patchwork of private water companies then serving the city and consolidated them into one municipal water utility that could better serve the city's burgeoning population. Consistent water quality was an early achievement of the young Water Department with the establishment of a laboratory in City Hall in the 1920's. And as a growing network of pipelines stretched silently under city streets, this reliable, safe water became as essential to Pasadena life as the air we breathe. City limits expanded, families emigrated, institutions set down roots, business and industry flourished.

We hope you'll help us pay tribute this year to this precious resource and all the good fortune it has brought us. Here's to 100 more years.

Sincerely,



Phyllis E. Currie, General Manager



## YOUR WATER SUPPLY

In 2011, Pasadena Water and Power (PWP) produced 30,490 acre-feet of water, or 9.9 billion gallons, to serve 161,300 customers in Pasadena, parts of Altadena, and other surrounding areas of Los Angeles County. Approximately 41 percent of the water supply was pumped from our local groundwater, 58 percent was imported surface water purchased from the Metropolitan Water District of Southern California (MWD), and the remaining 1 percent was purchased from neighboring water agencies that combine surface water and groundwater.

PWP's groundwater is pumped from the Raymond Groundwater Basin, a natural water-bearing zone underlying Pasadena, Altadena, La Canada-Flintridge, and portions of San Marino and Arcadia. Surface water from stream, rivers, lakes, 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 strip the water of most contaminants. PWP disinfects the water with chlorine prior to pumping the water into the distribution system.

MWD is a consortium of 26 cities and water agencies that import wholesale water from the Colorado River and from the Sacramento and San Joaquin rivers in Northern California to serve nearly 19 million people in Southern California. MWD supplies PWP with water treated at the Weymouth Filtration Plant in La Verne. Last year, Weymouth Plant received about 54 percent of its water from Northern California; the remaining 46 percent came from the Colorado River. MWD uses chloramines (chlorine plus ammonia) to disinfect its water.

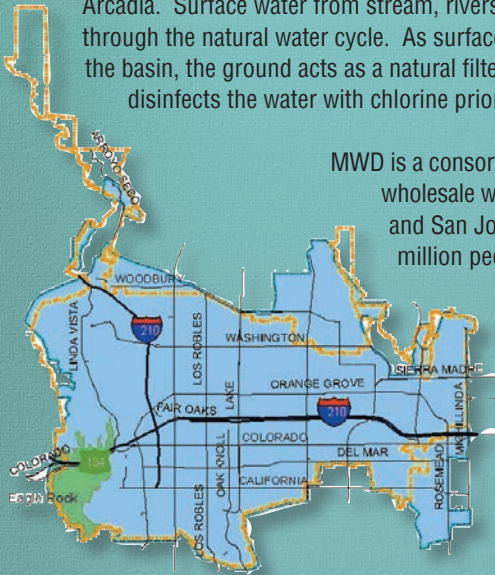
1770 Gaspar de Portola explores Los Angeles River tributary, names it Arroyo Seco ("dry riverbed"), and meets the native tribe, the Hahamongna ("flowing waters, fruitful valley")

1874 Eaton constructs three mile pipeline from upper Arroyo to Pasadena's first reservoir (decommissioned)

1870s Orchard farmers and ranchers establish "Indiana Colony," prioritize water projects

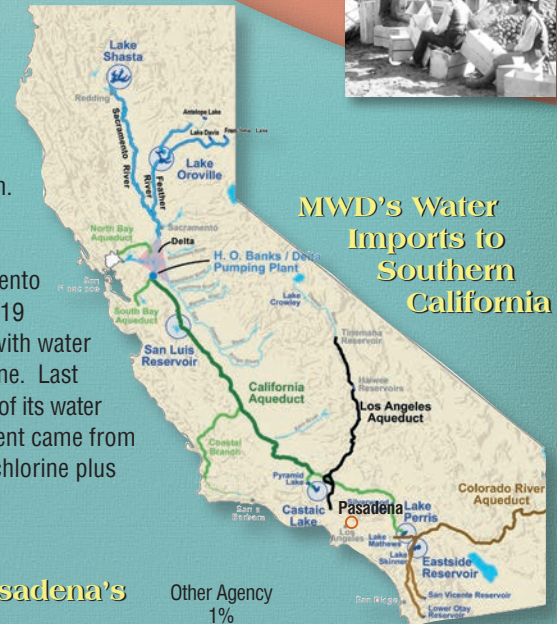


Courtesy of the archives Pasadena Museum of History



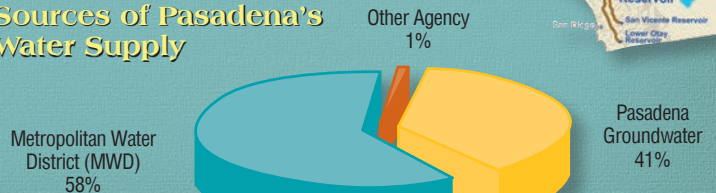
### Distribution of Water in Pasadena 2011

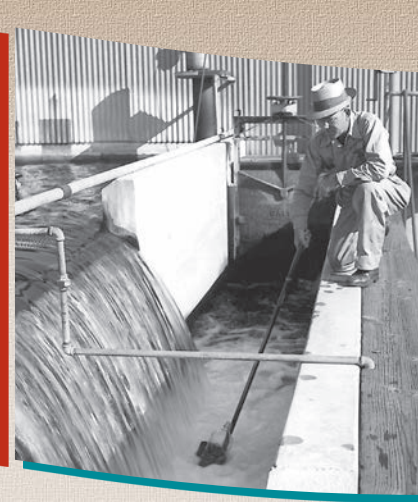
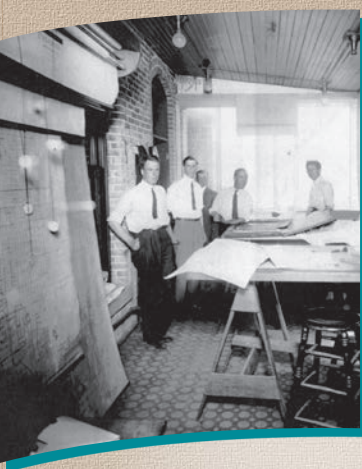
- Blended MWD & Pasadena Groundwater
- MWD Water
- Pasadena City Limit



### MWD's Water Imports to Southern California

### Sources of Pasadena's Water Supply





# A CENTURY OF RELIABLE WATER SERVICE (AND BEYOND)

## SUPPLY & DEMAND – A TIMELESS STRUGGLE

Our water supply has ebbed and flowed over the past 100 years and more, but one fact remains unchanged: In dry Pasadena water is a hard-fought, hard-won finite resource and must not be taken for granted.

Before the development of our modern water system in the early 20th century, water was not easy to come by. People used it sparingly, even if they were fortunate enough to have household plumbing. Throughout several population booms during the last century, Pasadena’s municipal water service kept up with rising demand by investing in a more extensive, reliable distribution system and by securing new water rights and import agreements. Pasadena was one of 13 cities that established the Metropolitan Water District of Southern California in 1928, which began delivering water to our city in 1941.

As the department neared the turn of its first century of service, reliability and affordability had perhaps become mistaken for over-abundance. Waste and excessive outdoor watering had become all too commonplace.

When demand threatened to outpace available supply in 2009 due to pumping curtailment in Northern California and years of drought, Pasadena Water and Power knew that, this time, a shortage could not be averted with engineering or by obtaining water imports from elsewhere.

Pasadena had to recalibrate its relationship with water and return to the conservationist norms of the past. PWP led the charge for adopting sensible city ordinances to encourage conservation, advancing a public education campaign, incentivizing water-efficient products and crafting long-term plans for a sustainable water supply.

**1886**  
City of Pasadena incorporated

**1888**  
Sunset Reservoir constructed (now city’s oldest reservoir)

**1898** Responding to public concern over drought and poor service from private water companies, Pasadena Board of Trade endorses establishing a municipal utility; 14-year political battle begins

**1905** Bond measure to buy private water companies gets voter approval, later derailed in political controversy

**1912** With new bond measure approved, city purchases three largest water companies in Pasadena for \$1,211,209; Pasadena Water Department established Nov. 1

**1916** Liquid chlorine purification system installed in Arroyo Seco; Sheldon Reservoir constructed

**1882** Incorporation of first private water company in city, the Pasadena Land and Water Company

**1890s**  
Windsor Reservoir constructed

**1899**  
Villa Reservoir constructed (now Villa Parke)



Courtesy of the archives, Pasadena Museum of History

**1906**  
Pasadena Light & Power Department established

**1914** First public record of water quality data, published in Water Department’s first annual report

TABLE No. 12  
MINERAL ANALYSIS OF PASADENA  
Expressed in Parts per Million

Location	Date	Iron	Aluminum	Calcium	Magnesium
South Pasadena Reservoir	Feb. 10, 1914	18.00	2.00	35.00	12.00
Pavle's Gate at Sunset Reser.	" "	15.00	1.50	25.00	10.00
Arroyo at Millard	" "	12.00	1.00	20.00	8.00
Capitol St.	Mar. 24, 1914	10.00	0.80	18.00	7.00
Arroyo at Millard	Apr. 25, 1914	14.00	1.30	25.00	9.00
Woodbury Wash	May 1, 1914	15.00	1.50	27.00	9.00
Oak Knoll Lake Well	Apr. 25, 1914	16.00	1.60	30.00	10.00
Arroyo at Millard	May 15, 1914	14.00	1.40	24.00	8.00
Woodbury Wash	May 15, 1914	15.00	1.50	25.00	8.00
Station Canyon	May 27, 1914	17.00	1.70	28.00	9.00
Chico Wells	" "	16.00	1.60	27.00	9.00
Arroyo at Millard	" "	15.00	1.50	26.00	9.00

Sodium and potassium combined.

TABLE No. 13  
SANITARY ANALYSIS OF PASADENA

## THE CHANGING TIDES OF 2011

2011 marked the end of the Level I Water Shortage which that City Council had declared in summer 2009. Over that two year period Pasadenans stepped up to stem the tide of water waste that had become common practice. They heeded the new city ordinance restricting outdoor watering schedules, voluntarily replaced water-thirsty lawns with Mediterranean plants and opted to buy water-efficient appliances. They adapted to price signals from a new conservation-based water rates. By December 2010, water use had dropped by 18 percent, and when a major regional pipeline shut down in March 2011, our customers stopped watering outdoors altogether for ten straight days, helping the city to make a stunning 39 percent cutback in water use.

With reservoirs and groundwater basins here and across the Southland refilling once more from the public’s conservation efforts plus two years of plentiful rainfall, our City Council lifted the Level I Water Shortage restrictions in May 2011. (Fourteen prohibitions on

specific forms of water waste, however, remain permanently in place.) Still, PWP water customers kept to their newly found conservationist habits. Pasadena closed out 2011 with an 18 percent water use reduction versus base year 2006, exceeding our annual conservation goal.

Also in 2011 PWP accomplished a longstanding goal of reducing its reliance on water imports from MWD. The Monk Hill Water Treatment Plant, in partial service since July, treats local groundwater to achieve superior health standards at the rate of 7000 gallons per minute. The new plant pushed local groundwater to 41 percent of our total supply in 2011, up from an average of only 33 percent in recent years.

## OUR NEXT 100 YEARS

Excessive demand, earthquakes, drought conditions, contamination, pipeline shutdowns and legal battles over water rights are just a few of the factors that could spur water restrictions and rationing at any time. Our customers understand this now more than ever, and

our challenge for the next 100 years is to take the lessons of this past century to heart.

The Water Integrated Resource Plan of 2011 set this mission in motion. Crafted with broad community input, PWP’s 25-year supply plan prioritizes projects that maximize mountain runoff, promote stormwater capture, recycle wastewater, infuse our natural aquifer with other water sources, and equip customers with water-efficiency tools and education. (See the full report at [www.PWPweb.com/waterplan](http://www.PWPweb.com/waterplan).)

And while efforts to protect and diversify our water supply will be ramping up in coming years, service reliability will be no less of a priority for PWP. Approximately 500 miles of pipes in our local distribution system have served us well, with some 88 miles of that system now in service since 1913. But these aging pipes will soon retire to make way for an even stronger distribution system as PWP crews continue progress toward completing the initial phase of the Water Main Replacement Project by 2020.

# WATER-SMART PROGRAMS FROM PWP

## TURF REMOVAL PROGRAM

Lawns typically use 50 percent more water than other plants. With PWP's Turf Removal Program, you can get \$1 for every square foot of water-thirsty grass that you replace with water-wise plants or a combination of these plants and water-permeable groundcover.

To qualify, apply and reserve funds on or after August 1; submit project plans to replace at least 250 square feet of turf grass with qualifying materials; and pass a pre-inspection *before* removing old turf and new planting begins.

[www.PWPweb.com/TurfRemoval](http://www.PWPweb.com/TurfRemoval)



## THE H2O ACADEMY

Want to get water-wise? You can become an A+ water saver with PWP's "H2O Academy," a suite of educational resources available at [PasadenaSavesWater.com](http://PasadenaSavesWater.com)

- ✓ **Pasadena's Water-Smart Landscaping Guide** - Search photos of hundreds of Pasadena-friendly plants, get watering and plant-care tips, and save favorites to help you plan your dream landscape
- ✓ **Free Workshops** - Register for expert-led seminars on turf removal, rainwater harvesting, native plants and efficient irrigation
- ✓ **How-To Videos** - Watch video shorts on turf removal, drip irrigation, leak detection, programming irrigation controllers and understanding your bill
- ✓ **"Savvy Saver" Checklist** - Stay on top of all the ways to cut down water waste at home and in the workplace
- ✓ **"H2OUSE" Virtual Home Audit** - Find out how much water is typically used at the home and set a customized water budget

**1924** Water Department begins citywide program to upgrade and expand water mainline system

**1939** 5.5 million gallon addition to Sheldon Reservoir constructed



**1944** Raymond Basin adjudicated, establishing water rights for Pasadena and 15 other providers that pump from the natural aquifer underlying 40 square miles of San Gabriel Valley

**1967** City's power and water utilities merge into one municipal department

**1972** California State Water Project begins serving water from Northern California to Pasadena and other MWD agencies



**1985 - 1989**

Four wells closed due to discovery of groundwater contamination in Northwest Pasadena from army testing decades earlier

**1928** Pasadena and 12 other cities found the Metropolitan Water District of Southern California (MWD) to import water from the Colorado River.

**1940s - 1960s** Army tests rockets in upper Arroyo Seco and disposes of chemicals in watershed

**1941** Pasadena is first city to receive water from MWD via the Colorado River Aqueduct.

**1945** Sunset Treatment Plant begins operations, reducing corrosion issues

**1952** 50 million gallon Jones Reservoir constructed (city's largest)

**1971** John Behner Treatment Plant begins operations

# Rebates\*

High Efficiency Clothes Washers  
**\$250** Rebate

Smart Irrigation Controllers  
**\$200** Rebate

Rotating Sprinkler Nozzles  
**\$5** Rebate

Rebates on Dozens of Energy-Saving Products and 37 Species of Shade Trees

Replace turf grass with water-smart landscaping  
**\$1** per square foot

\*Rebate amounts subject to change at any time.

Go to [PWPweb.com/rebates](http://PWPweb.com/rebates)

## PERMANENT WATER WASTE PROHIBITIONS

Whether a water shortage exists or not, water waste is prohibited in Pasadena.

- No watering outdoors between 9 a.m. and 6 p.m., except with a hand-held container or hose with a shut-off nozzle
- No watering during periods of rain
- No excessive water runoff from irrigating landscapes or vegetation of any kind
- Sprinkler and plumbing leaks or malfunctions must be fixed within 7 days
- No washing down paved surfaces unless for safety or sanitation, in which case a water saving device must be used

For more information or to report waste, call the Water Shortage Hotline at 744-8888 or visit [www.PWPweb.com/watershortage](http://www.PWPweb.com/watershortage)

# WATER QUALITY

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) 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 provide the same protection for public health.

## 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 1 (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.
- 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.
- 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, 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, that can be naturally-occurring or be the result of oil and gas production and mining activities.

**1987 - 1992** Regional drought, but city ordinance lacks sufficient enforcement of water shortage restrictions

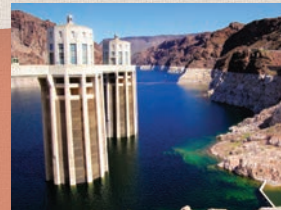
**1990** Devil's Gate Treatment Plant begins operations

**2003** Pasadena Water & Power begins 18-year program to replace city's aging water infrastructure

**2009** Eight-year regional drought and MWD import reductions prompt City Council to adopt PWP recommendations to strengthen city's water shortage ordinance, restructure water rates and declare a Level 1 Water Shortage (ends May 2011)



**July 2011** Monk Hill Water Treatment Plant begins operations, rehabilitating contaminated groundwater in Northwest Pasadena



CA Dept. of Water Resources

**2012** Pasadena celebrates centennial of its municipal water utility

## OTHER WATER QUALITY FACTORS

### Nitrates

Nitrate in drinking water at levels above 45 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 45 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

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. Pasadena Water and Power (PWP) is 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 1 (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.

## IMPORTANT HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people 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 1 (800) 426-4791.

### Fluoride

Your purchased water is fluoridated. The Metropolitan Water District of Southern California (MWD), which supplies about 58 percent of PWP's drinking water, adds fluoride to their water supply to the level of 0.7 to 1.0 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 0.4 to 1.4 ppm, the resulting concentration of fluoride is 0.4 to 1.4 ppm in our community drinking water, with an average of 0.9 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 [www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx](http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx).

Pasadena Water and Power performs nearly 30,000 analytical tests every year to safeguard water quality.

## Water Quality Test Data 2011

### UNDERSTANDING THE WATER QUALITY CHART

As in previous years, the Water Quality Report compares the quality of your tap water to state drinking water standards. The report includes information on all regulated and unregulated drinking water contaminants that were detected during calendar year 2011. 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.

CDPH allows us 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 U.S. Environmental Protection Agency.

**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.

**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 (MRDL):** 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.

**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.

**NA:** Contaminant or property was not analyzed.

**n/a:** Not applicable.

**ND:** Contaminant was not detected.

**Regulatory 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

**ppt** parts per trillion

**pCi/L** picocuries per liter

**LSI** Langelier Saturation Index

**µS/cm** microsiemens per centimeter

**NTU** Nephelometric Turbidity Units.

### PASADENA GROUNDWATER AND MWD TREATED SURFACE WATER DATA

Parameter	MCL	PHG (MCLG)	Pasadena Wells		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			Average	Range	Average	Range		
<b>Primary Standard (Monitored for health concerns)</b>								
<b>Radiologicals (pCi/L)</b>								
Gross Alpha Particle Activity	15	(0)	6	5 - 7	ND	ND - 3	No	Erosion of natural deposits
Gross Beta Particle Activity <sup>(1)</sup>	50	(0)	4	3 - 5	4	ND - 6	No	Decay of natural and man-made deposits
Uranium	20	0.43	10	5 - 19	1.5	1 - 2	No	Erosion of natural deposits
<b>Volatile Organic Compounds</b>								
Carbon Tetrachloride (ppt) <sup>(2)</sup>	500	100	560	ND - 3130	ND	ND	No	Discharge from chemical plants and other industrial activities
cis-1,2-Dichloroethylene (c-1,2-DCE) (ppb)	6	100	0.06	ND - 4	ND	ND	No	Discharge from industrial chemical factories
Tetrachloroethylene (PCE) (ppb)	5	0.06	0.60	ND - 3	ND	ND	No	Discharge from factories, dry cleaners, and autoshops
Trichloroethylene (TCE) (ppb) <sup>(2)</sup>	5	1.7	0.80	ND - 7	ND	ND	No	Discharge from metal degreasing sites and other factories
<b>Inorganic Compounds</b>								
Aluminum (ppm)	1	0.6	ND	ND	0.1	ND - 0.22	No	Erosion of natural deposits
Arsenic (ppb) <sup>(3)</sup>	10	0.004	0.2	ND - 1.2	ND	ND	No	
Chromium (ppb)	50	( 100 )	3.7	2.1 - 6.1	ND	ND	No	
Fluoride (ppm)	2	1	0.9	0.4 - 1.4	0.8	0.7 - 1.0	No	Water additive for dental health, Erosion of natural deposit
Nitrate (ppm) <sup>(2)</sup>	45	45	29	12 - 52	ND	ND - 1.8	No	Runoff and leaching from fertilizer use, Erosion of natural deposits
Perchlorate (ppb) <sup>(2)</sup>	6	6	18	ND - 108	ND	ND	No	Industrial waste discharge

**PASADENA GROUNDWATER AND MWD TREATED SURFACE WATER DATA**

Parameter	MCL	PHG (MCLG)	Pasadena Wells		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			Average	Range	Average	Range		
<b>Secondary Standard (Monitored for aesthetic qualities such as taste, color, odor) (4)</b>								
Chloride (ppm)	500	n/a	37	15 - 47	70	63 - 76	No	Runoff and leaching from natural deposits
Color (Units)	15	n/a	1	ND - 3	2	1 - 2	No	Naturally-occurring organic materials
Odor (Units)	3	n/a	ND	ND	2	2	No	
Specific Conductance (µS/cm)	1600	n/a	633	495 - 848	630	320 - 870	No	Substances that form ions when in water
Sulfate (ppm)	500	n/a	67	29 - 89	150	120 - 170	No	Runoff and leaching from natural deposits
Total Dissolved Solids (ppm)	1000	n/a	320	268 - 422	440	390 - 480	No	
Turbidity (NTU)	5	n/a	0.2	0.07 - 0.61	0.05	0.02 - 0.07	No	Soil runoff
<b>Other Parameters</b>								
Alkalinity (ppm)	n/a	n/a	163	121 - 189	82	43 - 110	No	n/a
Calcium (ppm)	n/a	n/a	55	44 - 66	48	41 - 54	No	n/a
Chlorate (ppb) (5)	NL=800	n/a	220	125 - 483	42	ND - 58	No	Industrial waste discharge, By-product of drinking water chlorination
Chromium VI (ppb)	n/a	n/a	4.4	2.6 - 6.8	0.09	0.09	No	Erosion of natural deposits, Industrial waste discharge
Corrosivity (LSI)	n/a	n/a	-0.14	-0.52 - 0.07	0.28	0.20 - 0.37	No	n/a
Magnesium (ppm)	n/a	n/a	22	12 - 31	18	16 - 21	No	n/a
pH (pH Units)	n/a	n/a	7.5	6.9 - 7.8	8.1	7.8 - 8.8	No	n/a
Sodium (ppm) (3)	n/a	n/a	37	27 - 50	69	62 - 76	No	n/a
Total Hardness (ppm)	n/a	n/a	222	166 - 291	170	60 - 250	No	n/a

(1) CDPH considers 50 pCi/L to be the level of concern for beta particles.

(2) Pasadena well water is either blended with MWD water or treated at the Monk Hill Treatment System before being delivered to the customers. Once blended or treated, the chemical was well below the MCL.

(3) Results are from 2010 and 2011 monitoring.

(4) There are no PHGs, MCLGs, or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetics.

(5) Since chlorate is not a regulated chemical, only two of Pasadena's groundwater sources were sampled in 2011. Monitoring of these two wells was a requirement in the permit to operate.

**PASADENA WATER DISTRIBUTION SYSTEM AND MWD TREATED SURFACE WATER DATA**

Parameter	MCL	PHG	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			Average(RAA)	Range	Average (RAA)	Range		
<b>Disinfection By-Products and Disinfectant Residuals</b>								
TTHM [Total Trihalomethanes] (ppb) (6)	80	n/a	43	ND - 117	57	48 - 68	No	By-products of drinking water disinfection
HAA5 [Haloacetic Acids] (ppb) (6)	60	n/a	21	ND - 93	26	17 - 33	No	
Total Chlorine Residual (ppm)	MRDL=4	MRDLG=4	1.2	1.1 - 1.5	2.3	1.3 - 2.8	No	Drinking water disinfectant added for treatment

**Microbiological (%)**

Total Coliform Bacteria (%) (7)	5	(0)	0.40	ND - 1.5	ND	ND - 0.1	No	Naturally present in the environment
---------------------------------	---	-----	------	----------	----	----------	----	--------------------------------------

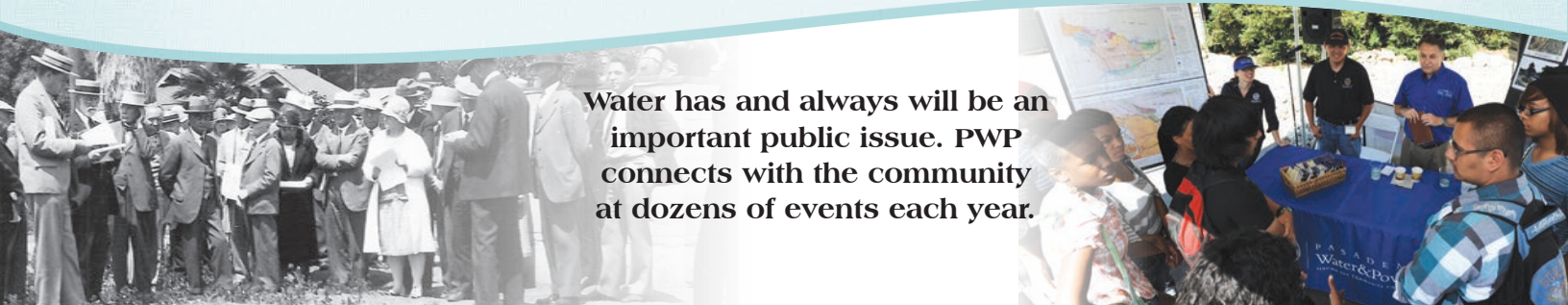
(6) The MCL for TTHM and HAA5 is based on a Running Annual Average (RAA) of test results taken throughout 2011. While the concentration of TTHM and HAA5 in Pasadena's water ranged from ND to 117 ppb and ND to 93 ppb respectively, its running annual average in 2011 was 43 ppb for TTHM and 21 ppb for HAA5; well below each respective MCL and in full compliance with state and federal water quality standards.

(7) Between 130 to 159 samples were taken monthly at the distribution system for the total coliform test. No more than 5% of the monthly samples may be total coliform positive.

**PASADENA WATER DISTRIBUTION SYSTEM - LEAD AND COPPER LEVELS AT RESIDENTIAL TAPS (8)**

Parameter	AL	PHG	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
			90th Percentile	#Site Exceeding Action Level	90th Percentile	# Site Exceeding Action Level		
Lead (ppb)	15	0.2	1.9	2 out of 52	n/a	n/a	No	Internal corrosion of household water plumbing system
Copper (ppm)	1.3	0.3	0.22	0 out of 52	n/a	n/a	No	

(8) Pasadena is required to test a minimum of 50 homes for lead and copper every three years. Of the 52 homes tested in 2011, two sites exceeded the lead action level (AL). Compliance with the Lead and Copper Rule is based on obtaining the 90th percentile of the total number of samples collected and compare it against the lead and copper action levels. To have an exceedance, the 90th percentile must be greater than 15 ppb for lead or 1.3 ppm for copper.



**Water has and always will be an important public issue. PWP connects with the community at dozens of events each year.**





## IMPORTANT INFORMATION INSIDE

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

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。

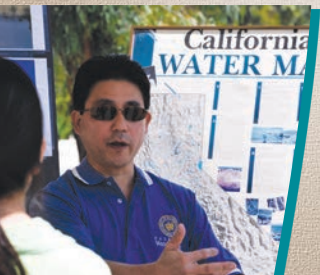
이 안내는 매우 중요합니다.  
 본인을 위해 번역인을 사용하십시오.

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

Mahalaga ang impormasyon na nilalaman nito. Mangyaring ipasalin ito.

この情報は重要です。  
 翻訳を依頼してください。

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



### Water Quality Questions

David E. Kimbrough, Ph.D. (English) • (626) 744-7315  
 Tony Estrada (Español) • (626) 744-3838

### Report Water Waste

(626) 744-8888 • [www.PasadenaSavesWater.com](http://www.PasadenaSavesWater.com)

### Rebates and Conservation Tips

(626) 744-6970 • [www.PasadenaSavesWater.com](http://www.PasadenaSavesWater.com)

### Metropolitan Water District of Southern California (MWD)

(213) 217-6000 • [www.mwdh2o.com](http://www.mwdh2o.com)

### California Department of Public Health Division of Drinking Water and Environmental Management

(818) 551-2004 • [www.cdph.ca.gov/DDWEM](http://www.cdph.ca.gov/DDWEM)

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

(800) 426-4791 • [www.epa.gov/safewater](http://www.epa.gov/safewater)

### Hazardous Waste Disposal & Recycling

(888) CLEAN-LA • [www.888CleanLA.com](http://www.888CleanLA.com)

Pasadena Water and Power welcomes your comments, questions, and participation. Comments from the public are also welcome at weekly Pasadena City Council meetings, held every Monday at 6:30 pm at City Hall, 100 North Garfield Avenue.

For an online version of this report, visit [www.PWPweb.com/WaterQuality](http://www.PWPweb.com/WaterQuality)

# Pasadena Water and Power

*Consumer Confidence Report on Water Quality 2012*



PASADENA  
**Water & Power**  
SERVING THE COMMUNITY SINCE 1906





*“We are proud to announce that your tap water met all drinking water quality standards.”*

## **Message from the General Manager**

Pasadena Water and Power (PWP) is pleased to present the 2012 Consumer Confidence Report on Water Quality (CCR). Once again, we are proud to announce that your tap water met all drinking water quality standards set by the U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH).

In 2012, we celebrated our 100th year of providing quality and reliable municipal water service to the City of Pasadena and its neighboring surroundings. The Water Department promises to continue its legacy of providing a safe and reliable water supply. Our unwavering focus to help our customers improve their quality of life while protecting the water resources is still our number one priority. We want to thank you for your continued support of our efforts in conserving and safeguarding our water supplies.

The report is available for electronic viewing at [www.PWPweb.com/CCR2012](http://www.PWPweb.com/CCR2012). It contains important information about the source and quality of your drinking water. By doing an electronic delivery of the CCR, we aim to cut cost, help the environment and improve customer readership. If you have any questions or if you would like a copy of the 2012 CCR mailed to your home, please call (626) 744-4409.

Sincerely,

A handwritten signature in blue ink that reads "Phyllis E. Currie".

Phyllis E. Currie, General Manager

## **Your Water Supply**

In 2012, PWP produced 32,000 acre-feet, or 10 billion gallons of water, to serve 161,497 customers in Pasadena, parts of Altadena, and other surrounding areas of Los Angeles County. Approximately 43 percent of the water supply was pumped from our local groundwater, 56 percent was imported surface water purchased from the Metropolitan Water District of Southern California (MWD), and the remaining 1 percent was purchased from neighboring water agencies that combine surface water and groundwater.

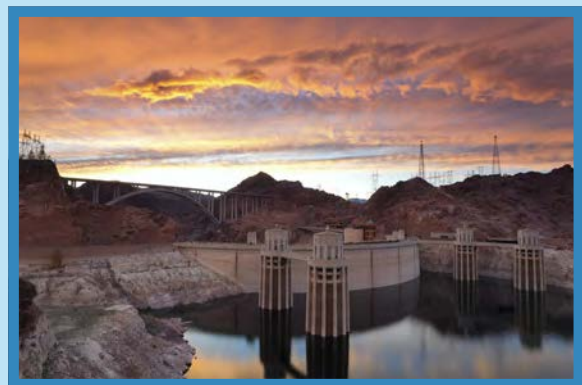
Almost two years after its inauguration in October 2011, the Monk Hill Treatment System (MHTS) continues to operate and successfully remove perchlorate and volatile organic compounds from four groundwater wells in the northwest portion of Pasadena. The treatment system decreased PWP's reliance on imported water. The amount of water purchased from MWD was down 8 percent versus the 2010 production data. PWP continues to explore all potential opportunities that will maximize the uses of our local water resources.

PWP's groundwater is pumped from the Raymond Groundwater Basin, a natural water-bearing zone underlying Pasadena, Altadena, La Canada-Flintridge, and portions of San Marino and Arcadia.

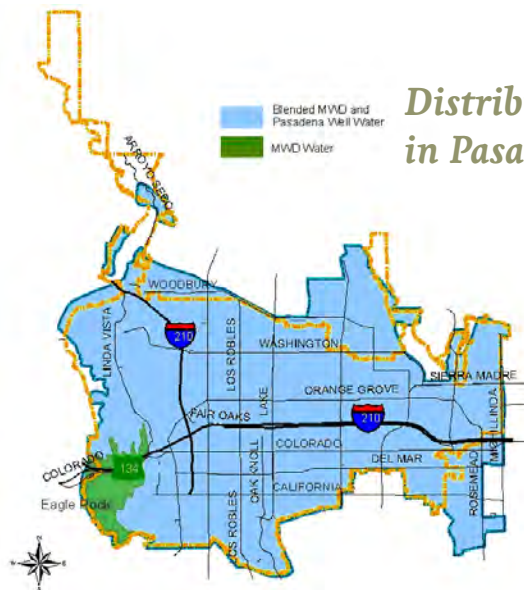
*“In 2012, Pasadena Water and Power (PWP) produced 32,000 acre-feet, or 10 billion gallons of water, to serve 161,497 customers.”*



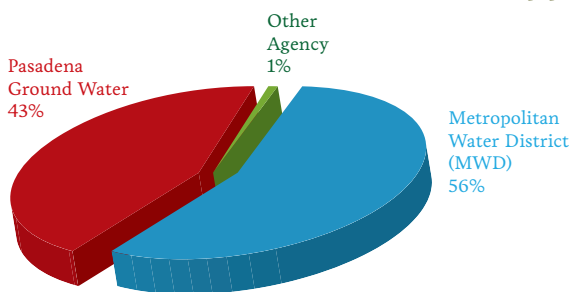
Surface water from streams, rivers, lakes, and precipitation enters the basin area through the natural water cycle. As surface water slowly percolates through the ground to the basin, the ground acts as a natural filter to strip the water of most contaminants. PWP disinfects the water with chlorine prior to pumping the water into the distribution system.



MWD is a consortium of 26 cities and water agencies that import wholesale water from the Colorado River and from the Sacramento and San Joaquin rivers in Northern California to serve nearly 19 million people in Southern California. MWD supplies PWP with water treated at the Weymouth Filtration Plant in La Verne. Last year, Weymouth Plant received about 43 percent of its water from Northern California; the remaining 57 percent came from the Colorado River. MWD uses chloramines (chlorine plus ammonia) to disinfect its water.



**Distribution of Water in Pasadena 2012**



**Sources of Pasadena's Water Supply in 2012**



**MWD's Water Imports to Southern California**



# Investing in Pasadena's Water Infrastructure



## Overview of PWP's Major Infrastructure Projects

Each year, through carefully planned and budgeted infrastructure repairs and upgrades, PWP continues to safeguard and secure the City's future water supplies. Here is an overview of a few of the critical infrastructure projects that are expected to begin, or will be continuing, in 2013.

### Increasing the City's Local Water Resource...To Help Keep the Cost of Water Low

#### Project: Devil's Gate Tunnel Water

PWP is investigating the ability to store and utilize the water produced from the Devil's Gate Tunnels. Once completed, the water collected from these tunnels may be used as irrigation water at a lower cost than imported water.

### Identifying Opportunities to Expand the City's Water Resources...

#### Project: A Recycled Water Program is Under Review

PWP is currently evaluating opportunities to expand the City's water supply portfolio by making high-grade, recycled water available to commercial customers for irrigation and other non-potable purposes.

### Protecting the City's Water Quality...

#### Project: Construction of the Sunset Disinfection System

As part of the City's longstanding pledge to provide the highest quality water to its customers, plans are in the works to construct a state-of-the-art disinfection system for the five wells located at the Sunset Reservoir. A Perchlorate Treatment System is also being considered under these plans, which will help keep drinking water safe against perchlorate contamination. Through projects such as these, PWP works to develop additional local water resources, which are generally more reliable than imported supplies.

### A Note of Thanks to Our Customers

While it is our goal to complete these projects with the least amount of disturbance possible to the community, sometimes temporary street closures or detours are necessary to replace pipelines. We thank you in advance for your patience and cooperation for any temporary traffic delays our projects may cause.

### Improving Water Capture at the Arroyo Seco and at City Wells...

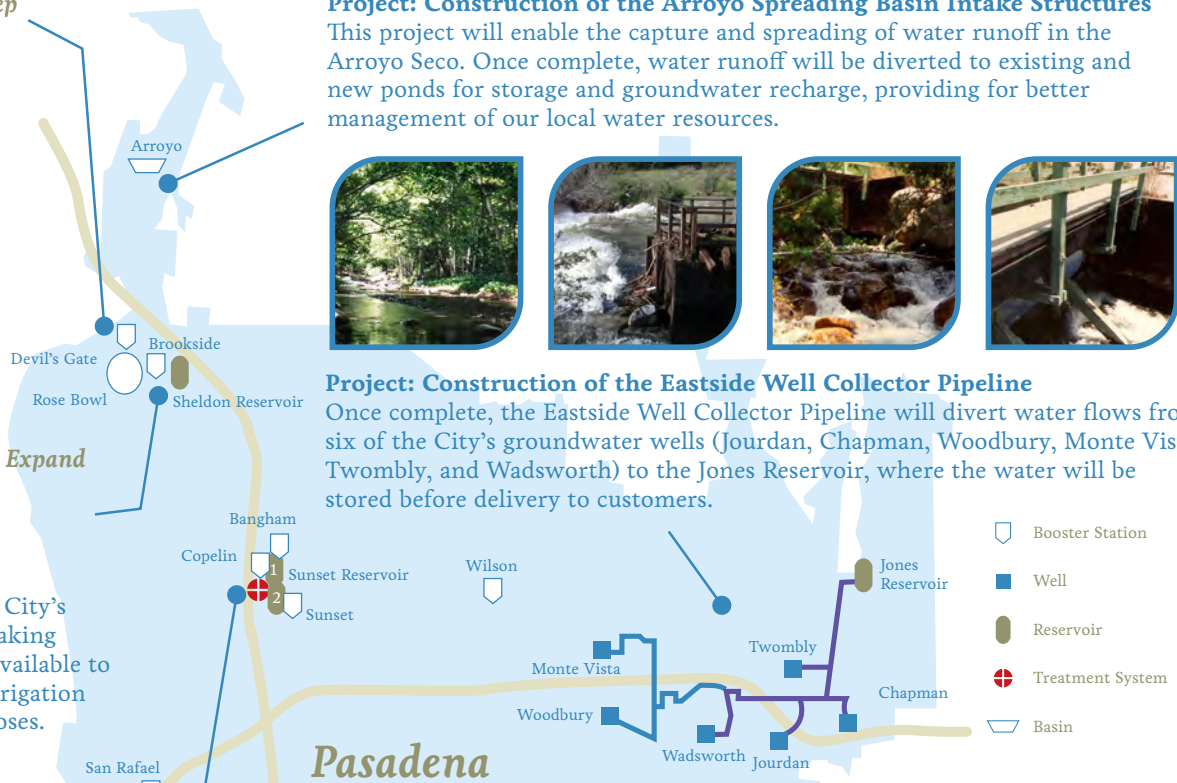
#### Project: Construction of the Arroyo Spreading Basin Intake Structures

This project will enable the capture and spreading of water runoff in the Arroyo Seco. Once complete, water runoff will be diverted to existing and new ponds for storage and groundwater recharge, providing for better management of our local water resources.



#### Project: Construction of the Eastside Well Collector Pipeline

Once complete, the Eastside Well Collector Pipeline will divert water flows from six of the City's groundwater wells (Jourdan, Chapman, Woodbury, Monte Vista, Twombly, and Wadsworth) to the Jones Reservoir, where the water will be stored before delivery to customers.



### Upgrading the City's Water Storage and Delivery Systems...

#### Project: Major Upgrades to all City Reservoirs

PWP will be making major repairs and upgrades to the City's 14 existing reservoirs, many of which are well over 60 years old. These upgrades will improve the efficiency, security and reliability of the City's storage facilities for years to come.

#### Project: Major Upgrades to Booster Pumps and the Jourdan Well

To help improve the overall efficiency and reliability of the City's water delivery system, PWP will also be upgrading or replacing the older, less-efficient Jourdan well and three booster pumps (Arroyo, San Rafael, and Wilson).



For updated information about construction projects that may be happening in your neighborhood, please visit [PWPweb.com](http://PWPweb.com), follow us on Twitter, @PWPnews, or on Facebook at [FB.com/PasadenaWaterandPower](https://www.facebook.com/PasadenaWaterandPower).

# Water-Smart Programs and Rebates from PWP



## Turf Removal Program

**Did you know?** Lawns typically use 50 percent more water than other plants. With PWP's Turf Removal Program, you can get \$1 for every square foot of water-thirsty grass that you replace with water-wise plants or a combination of these plants and water-permeable groundcover.

To qualify, apply and reserve funds **on or after August 1, 2013**; submit project plans to replace at least 250 square feet of turf grass with qualifying materials; and pass a pre-inspection before removing old turf.

[PWPweb.com/TurfRemoval](http://PWPweb.com/TurfRemoval)

## Permanent Water Waste Prohibitions

Whether a water shortage exists or not, water waste is prohibited in Pasadena.

- No watering outdoors between 9 a.m. and 6 p.m., except with a hand-held container or hose with a shut-off nozzle.
- No watering during periods of rain.
- No excessive water runoff from irrigating landscapes or vegetation of any kind.
- Sprinkler and plumbing leaks or malfunctions must be fixed within 7 days.
- No washing down paved surfaces unless for safety or sanitation, in which case a water saving device must be used.



## Rebates

High Efficiency  
Clothes  
Washers

**\$250  
REBATE**

Smart  
Irrigation  
Controllers

**\$200  
REBATE**

Rotating  
Sprinkler  
Nozzles

**\$6  
REBATE**

Replace turf grass  
with water-smart  
landscaping

**\$1 PER  
SQUARE FOOT**

Rebates on  
Dozens of  
Energy-Saving  
Products and  
37 Species of  
Shade Trees

*\*Rebate programs are subject to change at any time.*

## Connect to PWP!

Follow Pasadena Water and Power on social media to stay on top of the latest rebates, workshops and events that will help you and your family stay water and energy smart!

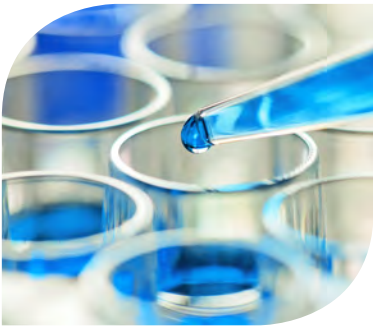
**Facebook:** [FB.com/PasadenaWaterandPower](https://www.facebook.com/PasadenaWaterandPower)

**Twitter:** Follow us @PWPnews

For more information or to report water waste, call the Water Waste Hotline at (626) 744-8888.

Save water and money at  
[PWPweb.com/Rebates](http://PWPweb.com/Rebates)





# Federal and State Water Quality Regulations

## Water Quality

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

## Drinking Water Contaminants

Drinking water, including bottled water, may be reasonably 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.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people 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.

## 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 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, 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**, that can be naturally-occurring or be the result of oil and gas production and mining activities.

# Water Quality Test Data 2012



## Understanding the Water Quality Chart

As in previous years, the Water Quality Report compares the quality of your tap water to state drinking water standards. The report includes information on all regulated and unregulated drinking water contaminants that were detected during calendar year 2012. 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.

CDPH allows us 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 U.S. Environmental Protection Agency.

### **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.

### **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 (MRDL):**

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.

### **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 CDPH.

**NA:** Contaminant or property was not analyzed.

**n/a:** Not applicable.

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

### **Regulatory 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**

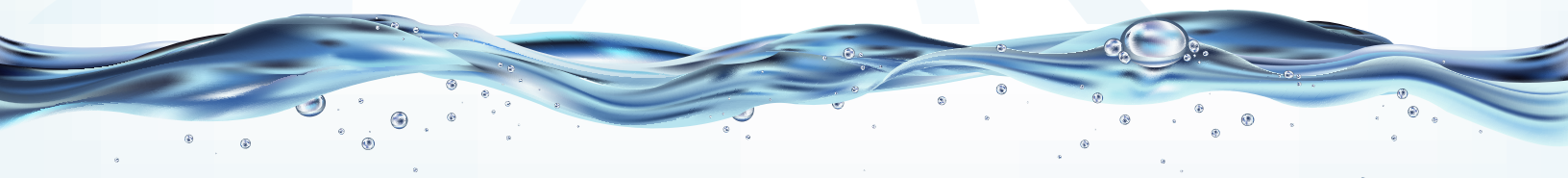
<b>ppm</b>	parts per million
<b>ppb</b>	parts per billion
<b>ppt</b>	parts per trillion
<b>pCi/L</b>	picocuries per liter
<b>LSI</b>	Langelier Saturation Index
<b>μS/cm</b>	microsiemens per centimeter
<b>NTU</b>	Nephelometric Turbidity Units.



## Water Quality Test Data 2012: CCR Table

### PASADENA GROUNDWATER AND MWD TREATED SURFACE WATER DATA

Parameter	MCL	PHG (MCLG)	DLR	Pasadena Wells		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Average	Range	Average	Range		
<b>Primary Standard (Monitored for health concerns)</b>									
Radiologicals (pCi/L)									
Gross Alpha Particle Activity	15	(0)	3	2.7	ND - 7.4	ND	ND - 3	No	Erosion of natural deposits
Gross Beta Particle Activity <sup>(1)</sup>	50	(0)	4	4	3 - 5	4	ND - 4	No	Decay of natural and man-made deposits
Uranium	20	0.43	1	4.6	4.2 - 5.6	2	1 - 2	No	Erosion of natural deposits
Volatile Organic Compounds									
Carbon Tetrachloride (ppt) <sup>(2)</sup>	500	100	500	650	ND - 4010	ND	ND	No	Discharge from chemical plants and other industrial activities
cis-1,2-Dichloroethylene (c-1,2-DCE) (ppb)	6	100	0.5	ND	ND - 0.68	ND	ND	No	Major biodegradation by-product of TCE and PCE groundwater contamination
Tetrachloroethylene (PCE) (ppb)	5	0.06	0.5	0.55	ND - 2.47	ND	ND	No	Discharge from factories, dry cleaners, and autoshops
Trichloroethylene (TCE) (ppb)	5	1.7	0.5	0.93	ND - 3.62	ND	ND	No	Discharge from metal degreasing sites and other factories
Inorganic Compounds									
Aluminum (ppm)	1	0.6	0.05	ND	ND	0.12	ND - 0.21	No	Erosion of natural deposits
Barium (ppm)	1	2	0.1	ND	ND - 0.12	ND	ND	No	Erosion of natural deposits
Fluoride (ppm)	2	1	0.1	0.9	0.4 - 1.5	0.8	0.6 - 1.1	No	Water additive for dental health. Erosion of natural deposit
Nitrate (ppm) <sup>(2)</sup>	45	45	2	30	12 - 56	ND	ND	No	Runoff and leaching from fertilizer use. Erosion of natural deposits
Perchlorate (ppb) <sup>(2)</sup>	6	6	4	16	ND - 52	ND	ND	No	Industrial waste discharge
<b>Secondary Standard (Monitored for aesthetic qualities such as taste, color, odor) <sup>(3)</sup></b>									
Chloride (ppm)	500	n/a	n/a	41	20 - 66	90	85 - 95	No	Runoff and leaching from natural deposits
Color (Units)	15	n/a	n/a	2.5	ND - 8.0	1	1	No	Naturally-occurring organic materials
Odor (Units)	3	n/a	1	2	1 - 2	2	2	No	
Specific Conductance ( $\mu$ S/cm)	1600	n/a	n/a	618	411 - 822	740	350 - 930	No	Substances that form ions when in water
Sulfate (ppm)	500	n/a	0.5	69	45 - 94	140	130 - 160	No	Runoff and leaching from natural deposits
Total Dissolved Solids (ppm)	1000	n/a	n/a	340	162 - 470	470	450 - 490	No	
Turbidity (NTU)	5	n/a	0.1	0.2	0.05 - 0.56	ND	ND	No	Soil runoff
<b>Other Parameters</b>									
Alkalinity (ppm)	n/a	n/a	n/a	165	82 - 204	95	61 - 120	No	n/a
Boron (ppb)	n/a	n/a	100	125	100 - 150	130	130	No	n/a
Calcium (ppm)	n/a	n/a	n/a	64	36 - 85	46	45 - 48	No	n/a
Chromium VI (ppb) <sup>(4)</sup>	n/a	0.02	1	4.1	2.2 - 6.8	ND	ND	No	Erosion of natural deposits. Industrial waste discharge
Corrosivity (LSI)	n/a	n/a	n/a	0.59	0.48 - 0.69	0.28	0.24 - 0.32	No	n/a
Magnesium (ppm)	n/a	n/a	n/a	20	8 - 31	20	19 - 20	No	n/a
pH (pH Units)	n/a	n/a	n/a	7.5	7.2 - 8.0	8.1	7.9 - 8.6	No	n/a
Potassium (ppm)	n/a	n/a	n/a	2.7	2.5 - 2.9	3.9	3.7 - 4.1	No	n/a
Sodium (ppm)	n/a	n/a	n/a	31	29 - 35	78	74 - 82	No	n/a
Total Hardness (ppm)	n/a	n/a	n/a	243	132 - 340	200	80 - 270	No	n/a



# Water Quality Test

## Data 2012: CCR Table



### PASADENA WATER DISTRIBUTION SYSTEM AND MWD TREATED SURFACE WATER DATA

Parameter	MCL	PHG	DLR	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Average (RAA)	Range	Average (RAA)	Range		
<b>Disinfection By-Products and Disinfectant Residuals (D/DBP)</b>									
TTHM [Total Trihalomethanes] (ppb) <sup>(5)</sup>	80	n/a	n/a	45	5 - 118	45	42 - 48	No	By-products of drinking water disinfection
HAA5 [Haloacetic Acids] (ppb)	60	n/a	n/a	14	ND - 37	14	12 - 18	No	
Total Chlorine Residual (ppm)	MRDL = 4	MRDLG = 4	n/a	1.08	ND - 2.20	2.3	1.5 - 2.8	No	Drinking water disinfectant added for treatment
<b>Microbiological (%)</b>									
Total Coliform Bacteria (%) <sup>(6)</sup>	5	(0)	n/a	0.17	ND - 1.44	0.10	ND - 0.50	No	Naturally present in the environment

### PASADENA WATER DISTRIBUTION SYSTEM - LEAD AND COPPER LEVELS AT RESIDENTIAL TAPS <sup>(7)</sup>

Parameter	AL	PHG	DLR	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				90th PCTL	# Sites Exceeding Action Level	90th PCTL	# Sites Exceeding Action Level		
Lead (ppb)	15	0.2	5	1.9	2 out of 52	n/a	n/a	No	Internal corrosion of household water plumbing system
Copper (ppm)	1.3	0.3	0.05	0.22	0 out of 52	n/a	n/a	No	



#### FOOTNOTES

- (1) CDPH considers 50 pCi/L to be the level of concern for beta particles. The results for Pasadena were taken in 2011.
- (2) Pasadena well water is either blended with MWD water or treated at the Monk Hill Treatment System before being delivered to the customers. Once blended or treated, the chemical was well below the MCL.
- (3) There are no PHGs, MCLGs, or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetics.
- (4) Results are from 2011 and 2012 monitoring.
- (5) The MCL for THM, HAA5, and Total Chlorine Residual is based on a Running Annual Average (RAA). While the concentration of THM in Pasadena's water ranged from 5 to 118 ppb, its THM RAA in 2012 was 45 ppb, well below its respective MCL and in full compliance with the state and federal water quality standards. Stage 2 D/DBP monitoring began in the 2nd quarter of 2012. PWP is in compliance with the provisions of Stage 1 and Stage 2 D/DBP Rule.
- (6) Between 130 to 162 samples were taken monthly at the distribution system for the total coliform test. No more than 5% of the monthly samples may be total coliform positive.
- (7) Pasadena is required to test a minimum of 50 homes for lead and copper every three years. Of the 52 homes tested in 2011, two sites exceeded the lead action level (AL). Compliance with the Lead and Copper Rule is based on obtaining the 90th percentile of the total number of samples collected and compare it against the lead and copper action levels. To have an exceedance, the 90th percentile must be greater than 15 ppb for lead or 1.3 ppm for copper.



## Other Factors Affecting Water Quality and Common Prevention Methods

### **Nitrates**

Nitrate in drinking water at levels above 45 parts per million (ppm) is a health risk for infants under 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 45 ppm 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.

### **Perchlorate**

Perchlorate is a chemical used in solid rocket propellant, fireworks, explosives, matches, and road flares. It can block the iodide uptake into the thyroid gland which produces thyroid hormones. Perchlorate reduces the production of the thyroid hormones which are needed for the normal growth and development of the fetus as well as the normal growth and development of an infant and a child. Ten of PWP's groundwater wells have been detected with perchlorate. Water from five of these wells is blended with MWD water resulting in a blend that is below the perchlorate MCL of 6 parts per billion (ppb). Water from four other wells is treated at the MHTS. Once treated, the resulting perchlorate concentration is below the detection limit. One well is offline due to perchlorate contamination.

### **Chromium (VI)**

Chromium (VI) is substance that is found naturally in both local well water and in imported surface water, and is also an industrially produced chemical. While some locales have received much attention over the years for the presence of chromium (VI) that is the result of industrial discharges, all of the chromium (VI) found in the Pasadena area is naturally occurring. The principal health concern with chromium (VI) is that it might cause cancer when consumed in drinking water. Currently, there is no legal health standard for chromium (VI) in drinking water but the CDPH will be publishing a draft MCL.

### **Lead and Copper**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and children. Lead in drinking water is primarily from materials associated with service lines and home plumbing. PWP is 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 (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

### **Fluoride**

MWD water, which supplies about 56 percent of PWP's drinking water, is fluoridated to a level of 0.6 to 1.1 ppm. Before drinking water is delivered to your home or business tap, MWD water is blended with PWP's groundwater. PWP's groundwater has naturally occurring fluoride levels of 0.4 to 1.5 ppm. The fluoride concentration of the blended water ranged from 0.4 to 1.5 ppm and had an average of 0.9 ppm in the community drinking water. 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 [www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx](http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx).

### **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 in the Colorado River and Northern California Rivers.

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 hot water heaters, thus reducing its effective lifetime. PWP's water hardness ranged from 132 to 340 ppm or 7.7 to 19.8 grains per gallon (gpg) in 2012. The average is 243 ppm or 14.2 gpg. Though hardness causes aesthetics disadvantages, our bodies require calcium and magnesium and therefore there is no known health effect that is caused by hard water.

*“There are more than 200 people who expertly plan and care for the city’s essential water services on a daily basis.”*



## **Preventing Pollution**

Protecting our water resources is a vital part of providing high-quality drinking water. It is a responsibility shared by all of us. Proper disposal of hazardous materials prevents pollution of our streams, underground water supplies, and oceans. Motor oil, anti-freeze, pesticides, paint, medicines, etc. should not be poured down the drain or flushed down the toilet. Our local sewage treatment plants, which are not designed to treat these types of chemicals, will pass them on to our waterways and ocean. Keeping our local recreation areas free of litter and pollution also helps keep our water supply clean.

## **Flushing**

Flushing of fire hydrants within Pasadena occurs regularly for several reasons. The Pasadena Fire Department requires flow tests to make sure every hydrant is ready in case of emergency and to ensure adequate pressure in building sprinkler systems; and the CDPH requires water distribution system flushing when nitrite levels exceed 25 ppb or when water samples test positive for coliform bacteria. Flushing is also used to release stagnant water from dead-end locations in the distribution system, which prevents deterioration of water quality. With the emphasis on water conservation that the entire community is embracing, PWP’s water quality team and the Fire Department have reviewed the flushing program and streamlined flushing activities. Despite this, some flushing still has to occur. Water trucks provided by Pasadena’s Public Works Department are capturing flushed water whenever possible. If you have questions about the program, send an e-mail to [wpd\\_answerline@cityofpasadena.net](mailto:wpd_answerline@cityofpasadena.net).

## **Pasadena Water... The Essential Ingredient**

There are more than 200 people who expertly plan and care for the city’s essential water services on a daily basis. Here are just a few of the people committed to ensuring that your water is reliable and safe.

### **The Engineering Section**



PWP Engineer Rouminana Voutchkova spends her busy days approving studies, designs and environmental documents, and securing state and federal grants. She also coordinates with inspectors, contractors, design engineers, other city departments, and state and federal government officials to make sure PWP’s water supply projects meet the highest

standards. Her mission is to help PWP meet its growing demand and cut its reliance on imported water by maximizing the existing local water supplies and developing local resources.

### **The Production Section**

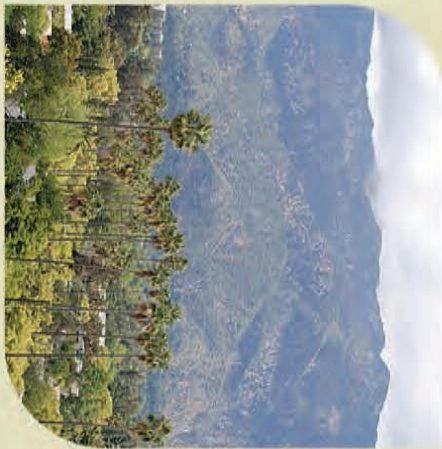


PWP Water System Crew Supervisor Doug Ross has had his eyes and hands on every corner of the water system. His daily routines include flushing the water mains, collecting water samples, or repairing faulty booster pumps. He regularly inspects the facilities within the city and monitors PWP’s computerized control system, SCADA. He is a certified water treatment and distribution operator.



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Pasadena, CA 91101

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# Important Information Inside!

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

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。

이 안내는 매우 중요 합니다.  
본인을 위해 번역인을 시용하십시오.

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

Mahalaga ang impormasyon na nilalaman nito.  
Mangyaring ipasalin ito.

この情報は重要です。  
翻訳を依頼してください。

यह सूचना महत्वपूर्ण है ।  
कृपया इसके किसी से सलाह अनुरोध करायें ।

Uwęzłamy, że ta informacja jest ważna i może dotyczyć Twojego zdrowia. Prosimy o przetłumaczenie lub skorzystanie z pomocy tłumacza.

**Water Quality Questions**  
David E. Kimbrough, Ph.D. (English)  
(626) 744-7315  
Tony Estrada (Español)  
(626) 744-3838

**Report Water Waste**  
(626) 744-8388  
www.PasadenaSavesWater.com

**Rebates and Conservation Tips**  
(626) 744-6970  
www.PasadenaSavesWater.com

**Metropolitan Water District  
of Southern California (MWD)**  
(213) 217-6000  
www.mwdh2o.com

**California Department of Public Health  
Division of Drinking Water and  
Environmental Management**  
(818) 551-2004  
www.cdph.ca.gov/DDWEM

**U.S. Environmental Protection Agency**  
**Safe Drinking Water Hotline**  
(800) 426-4791  
www.epa.gov/safewater

**Hazardous Waste Disposal & Recycling**  
(888) CLEAN-1A  
www.888Clean1A.com

Pasadena Water & Power welcomes your comments, questions, and participation. Comments from the public are also welcomed at weekly Pasadena City Council meetings, held every Monday at 6:30 pm at City Hall, 100 North Garfield Avenue.

This report is available for electronic viewing at [www.PWPweb.com/CCR2012](http://www.PWPweb.com/CCR2012).

Previous years reports and additional information about water quality are available at [www.PWPweb.com/WaterQuality](http://www.PWPweb.com/WaterQuality).

If you would like a copy of this report mailed to your home, please call (626) 744-4409.