

Hetch Hetchy Tap Water:

A Drink You Can Depend On



Dear Customer

Throughout 2011, we continued to bring you some of the highest-quality drinking water in the country—high-Sierra snowmelt plus waters from our protected local watersheds.

We are vigilant in testing and monitoring that precious supply, and, as in years past, our water met or exceeded federal and state standards for drinking water. This annual Water Quality Report, which the State of California mandates that we send to every customer, contains important information about your drinking water.

We have also moved forward in our mission to supplement our primary water supply and ensure reliable, high-quality drinking water in the event of a major earthquake, drought or decline in the snowpack. In San Francisco, we are developing available local water sources, including recycled water for non-drinking use, groundwater, and increased, proactive conservation efforts.

In addition to providing reliable, high-quality drinking water every day, our 167-mile gravity-fed Hetch Hetchy Regional Water System produces clean, renewable, hydroelectric power. This power is used to serve municipal needs in San Francisco and the Central Valley.

Thank you for your continued support, and we look forward to serving you in the years to come.

Ed Harrington



General Manager

Want to learn more about drinking water regulations?
Visit the CDPH website www.cdph.ca.gov or the USEPA website www.epa.gov.

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Water quality policies are decided at Commission hearings, held the second and fourth Tuesdays of each month at 1:30 pm at San Francisco City Hall, Room 400.

For more information about this report, contact Communications at **415-554-3289** or email info@sflower.org.



Hetch Hetchy
**Regional
Water
System**

Services of the San Francisco
Public Utilities Commission

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Water Quality

Contaminants and Regulations

Our Water Quality Division regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure that the water delivered to you meets or exceeds federal and state drinking water standards. In 2011, Water Quality staff conducted more than 71,740 drinking water tests in the transmission and distribution systems. This monitoring effort is in addition to the extensive treatment process control monitoring performed by our certified and knowledgeable treatment plant staff and online instruments.

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. Such substances are called 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.

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (USEPA) and 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.

More information about contaminants and potential health effects can be obtained by calling the USEPA's 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.
- 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.
- 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.



Water quality technician Adam Daniels tests a source water sample.

Special Health Needs

All water utilities are required to use the following special health message in their annual water quality reports.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, 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** or at www.epa.gov/safewater.

San Francisco Regional Water System - Water Quality Data for Year 2011

The table below lists all 2011 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits are not shown, in accord with California Department of Public Health (CDPH) guidance. The CDPH allows us to monitor for some contaminants less than once per year because their concentrations do not change frequently. We received from the CDPH a monitoring waiver for some contaminants that were absent in the water. Key water quality terms are defined on the next page.

DETECTED CONTAMINANTS	UNIT	MCL	PHG OR (MCLG)	RANGE OR LEVEL FOUND	AVERAGE OR [MAX]	MAJOR SOURCES IN DRINKING WATER
TURBIDITY						
For Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.2 - 0.7 ⁽¹⁾	[2.1] ⁽²⁾	Soil runoff
For Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU	1 ⁽³⁾	N/A	-	[0.36]	Soil runoff
	-	min 95% of samples ≤0.3 NTU ⁽³⁾	N/A	99.9% - 100%	-	Soil runoff
For Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU	1 ⁽³⁾	N/A	-	[0.18]	Soil runoff
	-	min 95% of samples ≤0.3 NTU ⁽³⁾	N/A	100%	-	Soil runoff
DISINFECTION BYPRODUCTS AND PRECURSOR						
Total Trihalomethanes	ppb	80	N/A	10 - 84	[45] ⁽⁴⁾	Byproduct of drinking water chlorination
Haloacetic Acids	ppb	60	N/A	4 - 59	[33] ⁽⁴⁾	Byproduct of drinking water chlorination
Total Organic Carbon ⁽⁵⁾	ppm	TT	N/A	2.6 - 2.9	2.7	Various natural and man-made sources
MICROBIOLOGICAL						
Total Coliform	-	NoP ≤5.0% of monthly samples	(0)	-	[1.9%]	Naturally present in the environment
<i>Giardia lamblia</i>	cyst/L	TT	(0)	ND - 0.07	[0.07]	Naturally present in the environment
INORGANIC CHEMICALS						
Fluoride (source water) ⁽⁶⁾	ppm	2.0	1	ND - 0.8	0.3 ⁽⁷⁾	Erosion of natural deposits
Chlorine (including free chlorine and chloramine)	ppm	MRDL = 4.0	MRDLG = 4	0.5 - 3.3	[2.1] ⁽⁴⁾	Drinking water disinfectant added for treatment
RADIONUCLIDES						
Radium-226	pCi/L	N/A	0.05	ND - 1.2	<1	Erosion of natural deposits
CONSTITUENTS WITH SECONDARY STANDARDS						
Aluminum ⁽⁸⁾	ppb	200	600	ND - 53	<50	Erosion of natural deposits
Chloride	ppm	500	N/A	3 - 20	11	Runoff / leaching from natural deposits
Color	unit	15	N/A	<5 - 9	<5	Naturally occurring organic materials
Specific Conductance	µS/cm	1600	N/A	39 - 289	181	Substances that form ions when in water
Sulfate	ppm	500	N/A	1.3 - 36	18	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	83 - 194	132	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	0.06 - 0.35	0.16	Soil runoff
LEAD AND COPPER ⁽⁹⁾						
	UNIT	AL	PHG	RANGE	90TH PERCENTILE	MAJOR SOURCES IN DRINKING WATER
Copper	ppb	1300	300	14 - 653	63.4	Corrosion of household plumbing systems
Lead	ppb	15	0.2	<1 - 213	9.2	Corrosion of household plumbing systems
OTHER WATER QUALITY PARAMETERS						
	UNIT	ORL	RANGE	AVERAGE	KEY:	
Alkalinity (as CaCO ₃)	ppm	N/A	10 - 84	49	< / ≤ = less than / less than or equal to AL = Action Level Max = Maximum Min = Minimum N/A = Not Available ND = Non-detect NL = Notification Level NoP = Number of Coliform-Positive Sample NTU = Nephelometric Turbidity Unit ORL = Other Regulatory Level ppb = part per billion ppm = part per million µS/cm = microSiemens / centimeter	
Calcium (as Ca)	ppm	N/A	3 - 24	13		
Chlorate ⁽¹⁰⁾	ppb	(800) NL	36 - 488	89		
Hardness (as CaCO ₃)	ppm	N/A	10 - 98	57		
Magnesium	ppm	N/A	ND - 8.2	4.9		
pH	-	N/A	6.7 - 9.7	8.6		
Sodium	ppm	N/A	3 - 20	13.5		

FOOTNOTES: (1) Turbidity is measured every four hours. These are monthly average turbidity values. **(2)** This is the highest turbidity of the unfiltered water served to customers in 2011. The turbidity spike was the result of flow rate change, and it was not observed downstream at Alameda East. **(3)** There is no turbidity MCL for filtered water. The limits are based on the TT requirements in the State drinking water regulations. **(4)** This is the highest quarterly running annual average value. **(5)** Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only. These are compliance data for SVWTP raw water. **(6)** We add fluoride to the naturally occurring level to help prevent dental caries in consumers. The CDPH requires our fluoride levels in the treated water to be maintained within a range of 0.8 ppm - 1.5 ppm. In 2011, the range and average of our fluoride levels were 0.6 ppm - 1.3 ppm and 1.0 ppm, respectively. **(7)** The naturally occurring fluoride levels in the Hetch Hetchy and SVWTP raw water were ND and 0.12 ppm, respectively. The HTWTP raw water had elevated fluoride levels of 0.6 ppm - 0.8 ppm due to the continued supply of the fluoridated Hetch Hetchy & SVWTP treated water into the Lower Crystal Springs Reservoir, which supplies water via the San Andreas Reservoir to the HTWTP for treatment. **(8)** Aluminum also has a primary MCL of 1000 ppb. **(9)** The most recent Lead and Copper Rule monitoring was in August 2009. One of 20 water samples collected at consumer taps had lead concentration above the Action Level. **(10)** The detected chlorate in treated water is a degradation byproduct of sodium hypochlorite, the primary disinfectant we use for water disinfection. **Note:** The blend of different water sources has been variable and has resulted in varying water quality parameters due to system improvements and operational constraints. Additional water quality data may be obtained by calling the SFPUC Water Quality Division toll free number at **877-737-8297**.

Key Water Quality Terms

Following are definitions of key terms noted on the adjacent water quality data table. These terms refer to standards and goals for water quality described below.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

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

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 (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

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.

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

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

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

Turbidity: A water clarity indicator that is also used to indicate the effectiveness of the filtration plants. High turbidity can hinder the effectiveness of disinfectants.

Cryptosporidium is a parasitic microbe found in most surface water. We regularly test for this waterborne pathogen, and found it at very low levels in source water and treated water in 2011. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. Ingestion of *Cryptosporidium* may produce symptoms of nausea, abdominal cramps, diarrhea, and associated headaches. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Reducing Lead from Plumbing Fixtures



If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but cannot control the

variety of materials used in plumbing components. There are no known lead service lines in your water distribution system. 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.

\$4.6 Billion Water System Upgrade Adds Advanced Disinfection Technology

In 2011, our Tesla Ultraviolet Treatment Facility was brought online to provide advanced disinfection targeting biological pathogens ranging from bacteria and viruses to protozoa, such as the *Cryptosporidium* parasite.

Our state-of-the-art facility uses cost effective, chemical-free ultraviolet light to kill biological organisms efficiently without slowing the flow of our gravity-fed water supply. With a capacity of 315 million gallons per day, the facility is the largest UV drinking water treatment plant in California, and the third largest in the nation.

This facility is one of more than 80 projects in the \$4.6 billion Hetch Hetchy Water System Improvement Program – a voter-approved infrastructure program to repair, replace and seismically upgrade our regional water system.



Our Drinking Water Sources

“The source is so clean and protected that we are not required to filter water from the Hetch Hetchy Reservoir.”

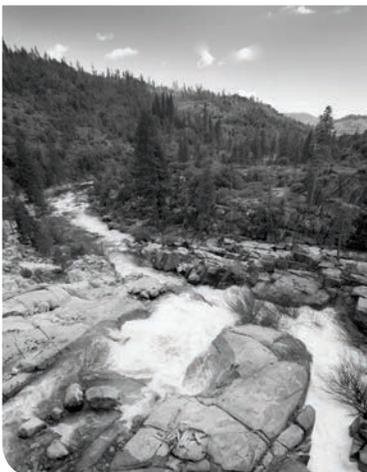
The sources of drinking water (both tap water and bottled water) include rivers, lakes, oceans, streams, ponds, reservoirs, springs, and wells. For our system, the major water source originates from spring snowmelt flowing down the Tuolumne River to the Hetch Hetchy Reservoir, where it is stored. This pristine Sierra water source meets all federal and state criteria for watershed protection. We also maintain stringent disinfection treatment practices, extensive bacteriological-quality monitoring, and high operational standards. As a result, the CDPH and USEPA have granted the Hetch Hetchy water source a filtration exemption. In other words, the source is so clean and protected that we are not required to filter water from the Hetch Hetchy Reservoir.

within the greater 128,424-acre Southern Alameda Creek Watershed and spanning more than 35,000 acres in Alameda and Santa Clara counties – are collected in the Calaveras and San Antonio reservoirs and treated at the Sunol Valley Water Treatment Plant.

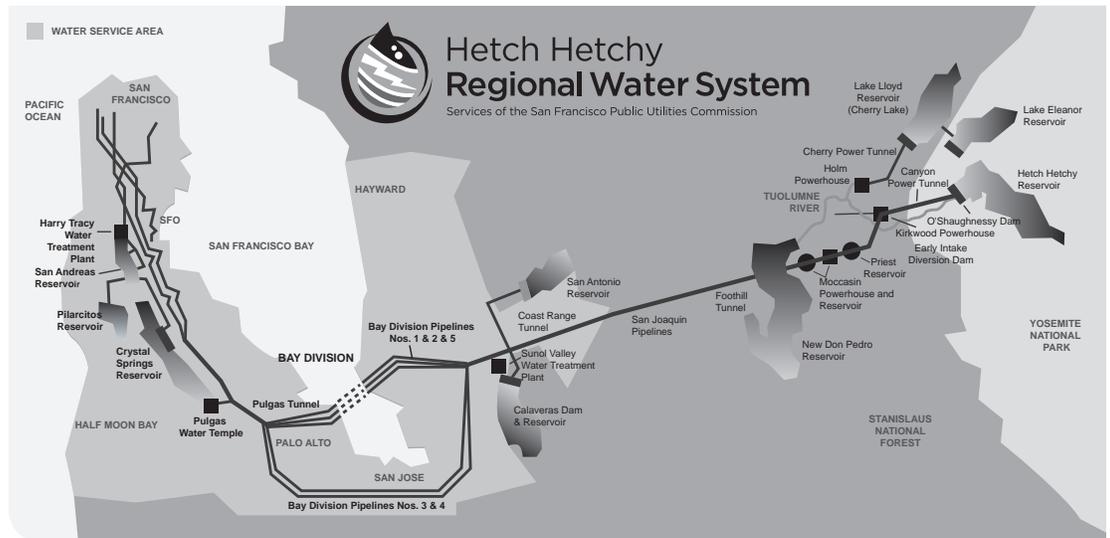
Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in Crystal Springs, San Andreas, and Pilarcitos reservoirs and treated at the Harry Tracy Water Treatment Plant.

In 2011, the Hetch Hetchy Watershed provided approximately 85% of our total water supply, with the remainder contributed by the two local watersheds.

Hetch Hetchy water is supplemented with surface water from two local watersheds. Rainfall and runoff from the Alameda Watershed –



We safeguard the pristine quality of our watersheds.



Protecting Our Watersheds

We actively protect the water resources entrusted to our care. Our annual Hetch Hetchy Watershed survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities conducted with partner agencies, such as the National Park Service and US Forest Service. We work cooperatively with these partner agencies and provide almost \$5 million annually to the National Park Service to support water quality and watershed protection efforts around our watersheds. We also conduct sanitary surveys every five years to detect and track sanitary concerns for the Bay Area watersheds and the approved standby water sources in Early Intake Watershed, which includes Cherry Lake and Lake Eleanor. The latest 5-year survey was completed in 2011 for the period of 2006 - 2010. These surveys identified wildlife, stock, and human activities as potential contamination sources. They are available for review at the CDPH San Francisco District office, **510-620-3474**.



Services of the San Francisco
Public Utilities Commission

P.O. Box 7369
San Francisco, CA 94120-7369

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

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

此份水質報告, 內有重要資訊。請找他人為你翻譯和解說清楚。

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Hetch Hetchy Tap Water:
A Drink You Can Depend On



**Hetch Hetchy
Regional Water System**
Services of the San Francisco Public Utilities Commission

***Annual
Water Quality
Report 2011***

This state-mandated annual report contains important information on the quality of your drinking water.

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