

# Annual Water Quality Report 2014

San Francisco's Hetch Hetchy Tap Water: A Drink You Can Depend On



## Hetch Hetchy Regional Water System

Services of the San Francisco Public Utilities Commission



**Conservation alert:** *Following another historically dry winter, we continue to ask all customers to voluntarily reduce water use by 10%. See [sfwater.org/conservation](http://sfwater.org/conservation) for more information on how to cut back water use.*

### Our Drinking Water Sources

For Moccasin, the major water source originates from spring snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The United States Environmental Protection Agency (USEPA) and State Water Resources Control Board's Division of Drinking Water (SWRCB) approved that our pristine, well protected Sierra water source requires no filtration. Water treatments, to meet the drinking water regulatory requirements, include disinfection by ultraviolet (UV) light and chlorine, and corrosion control by adjustment of the water pH value.

### Protecting Our Watersheds

Our annual Hetch Hetchy Watershed Sanitary Survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities with partner agencies including the National Park Service and US Forest Service.

We also conduct sanitary surveys every five years to detect and track sanitary concerns for the approved standby water sources in the 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. The reports are available for review at the San Francisco District office of SWRCB (510) 620-3474.

## **Water Quality**

Our Water Quality Division (WQD) 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 2014, WQD staff conducted more than 5,676 drinking water tests for the upcountry portion of the San Francisco Regional Water System and 2,183 for the Moccasin Compound Water System. This monitoring effort is in addition to the extensive process control monitoring performed by our certified and knowledgeable stationary engineers and online instruments.

The source of tap and bottled drinking water include rivers, lakes, oceans, 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. 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 USEPA and SWRCB prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. SWRCB regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

## **Contaminants and Regulations**

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.

More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline 800-426-4791, or at [www.epa.gov/safewater](http://www.epa.gov/safewater).

## **Special Health Needs**

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](http://www.epa.gov/safewater).

### Water Quality Data for Year 2014

The table below lists all 2014 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits are not shown in accord with the SWRCB guidance. We also received from the SWRCB a monitoring waiver for some contaminants such that their monitoring frequencies are less than annual.

### Moccasin Compound - Water Quality Data for Year 2014 <sup>(1)</sup>

DETECTED CONTAMINANTS	Unit	MCL	PHG or (MCLG)	Range or Level Found	Maximum	Major Sources in Drinking Water
<b>TURBIDITY</b>						
Turbidity	NTU	5	N/A	0.2 - 0.6 <sup>(2)</sup>	1.7 <sup>(3)</sup>	Soil runoff
<b>DISINFECTION BYPRODUCTS</b>						
Total Trihalomethanes	ppb	80	N/A	47 - 94	75 <sup>(4)</sup>	Byproduct of drinking water chlorination
Haloacetic Acids	ppb	60	N/A	30 - 66	57 <sup>(4)</sup>	
<b>MICROBIOLOGICAL</b>						
Total Coliform	-	NoP ≤ 1 per month	(0)	0	0	Naturally present in the environment
<i>Giardia lamblia</i>	cyst/L	TT	(0)	<0.01 - 0.04	0.04 <sup>(5)</sup>	
<b>INORGANIC CHEMICALS</b>						
Chlorine	ppm	MRDL = 4.0	MRDLG = 4	0.35 - 1.63	1.39 <sup>(6)</sup>	Drinking water disinfectant added for treatment
<b>CONSTITUENTS WITH SECONDARY STANDARDS</b>						
	Unit	SMCL	PHG	Level Found	Average	Typical Sources of Contaminant
Chloride	ppm	500	N/A	3	3	Runoff / leaching from natural deposits
Specific Conductance	µS/cm	1600	N/A	43	43	Substances that form ions when in water
Sulfate	ppm	500	N/A	0.7	0.7	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20	<20	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	0.2	0.2	Soil runoff
<b>LEAD AND COPPER</b>						
	Unit	AL	PHG	Range	90th Percentile	Major Sources in Drinking Water
Copper	ppb	1300	300	16 - 345 <sup>(7)</sup>	125	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	< 1 - 10.9 <sup>(7)</sup>	7.7	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	Unit	ORL	Range or Level Found	Average
Alkalinity (as CaCO <sub>3</sub> )	ppm	N/A	16	16
Calcium (as Ca)	ppm	N/A	1	1
Chlorate <sup>(8)</sup>	ug/L	800 (NL)	360	360
Hardness (as CaCO <sub>3</sub> )	ppm	N/A	<3	<3
pH	-	N/A	7.5 – 8.8	8.3
Potassium	ppm	N/A	0.2	0.2
Silica	ppm	N/A	5	5
Sodium	ppm	N/A	7	7

KEY	
NoP	= Number of Coliform-Positive Sample
< / ≤	= less than / less than or equal to
AL	= Action Level
N/A	= Not Available
NL	= Notification Level
NTU	= Nephelometric Turbidity Unit
ORL	= Other Regulatory Level
ppb	= part per billion
ppm	= part per million
µS/cm	= microSiemens / centimeter

#### Notes:

- (1) All results met State and Federal drinking water health standards.
- (2) Turbidity is measured every four hours at Moccasin UV facility. These are monthly average turbidity values.
- (3) This is the highest turbidity recorded at Moccasin Tank inlet occurred on 2/27/2014.
- (4) This is the highest locational running annual average value.
- (5) The highest level of *Giardia lamblia* was measured in the raw water at Tesla Portal in June 2014.
- (6) This is the highest quarterly running annual average value.
- (7) The most recent Lead and Copper Rule monitoring was in 2013. No sample result exceeded the corresponding ALs.
- (8) The detected chlorate in the treated water is a degradation byproduct of sodium hypochlorite, the primary disinfectant we use for water disinfection.

*Cryptosporidium* is a parasitic microbe found in most surface water. The San Francisco Public Utilities Commission (SFPUC) regularly tests for this waterborne pathogen, and found it at very low levels in source water and treated water in 2014. 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.

#### Key Water Quality Terms

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

- **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 measures cloudiness of the water. High turbidity can hinder the effectiveness of disinfectants.

## Treatment Plant Improvements

Moccasin UV disinfection facility was completed in 2013 and permitted by SWRCB to operate in 2014. It was added to comply with the Long Term 2 Enhanced Surface Water Treatment Rule requirement for *Cryptosporidium* inactivation. The UV disinfection facility allows a reduction in chlorine levels and this reduced the formation of disinfection byproducts.

## Reducing Lead from Plumbing Fixtures

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There are no known lead service lines in your water distribution system. We are responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. It is possible that lead levels at your home may be higher than at others because of plumbing materials used in your property.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. 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 levels in your water, you may wish to have your water tested. Additional 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).

For more information about the contents of this report, contact Robert Clark (209-989-2131), [rclark@sflower.org](mailto:rclark@sflower.org).

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

Call the Plumbing Supervisor, Hetch Hetchy Water & Power Moccasin Field Office, at 209-989-2076 to report a water or sewer problem.

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.*