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***PURISSIMA PIPELINE***

**WATER QUALITY REPORT**

Purissima Hills Water District (PHWD) is pleased to present the 2012 edition of the Water Quality Report (Consumer Confidence Report). PHWD receives 100% of its water from the San Francisco Public Utilities Commission's (SFPUC) Hetch Hetchy regional system. This report is prepared in conjunction with the SFPUC as a public service to provide information about the physical and chemical elements of our water supplies. This state-mandated annual report contains important information on the quality of your drinking water. This is in response to the National Primary Drinking Water Regulation and California Code of Regulation, Title 22, Section 116470, Regulations, which requires all public water supply agencies to issue an Annual Water Quality Report to their customers by July 1.

We want our customers to know where their drinking water comes from, how it is treated to make it safe and healthy, and the results of water quality monitoring performed by the SFPUC on a daily basis. Customers can make health decisions concerning water use for themselves and their families with the information in this report. During 2012, the SFPUC monitored water quality, both source and treated water supplies, and met the maximum contaminant levels (MCLs) and treatment standards. The PHWD and the SFPUC continue their commitment to consistently provide safe and high quality drinking water.

**ADDITIONAL INFORMATION**

Additional information about the contents of this report can be obtained by calling the District office at (650) 948-1217. Decisions about water issues are made in public meetings. The Board of Directors meets the second Wednesday of each month at 6:30 p.m. in the District office at 26375 Fremont Road, Los Altos Hills. Call the District Secretary at (650) 948-1217 regarding any inquiries about these meetings.

Patrick Walter  
General Manager  
July 2013

**PURISSIMA HILLS WATER DISTRICT  
2012 ANNUAL WATER QUALITY REPORT  
(CONSUMER CONFIDENCE REPORT)**

**SFPUC DRINKING WATER SOURCES**

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, oceans, ponds, reservoirs, springs, and wells. For the San Francisco Public Utilities Commission (SFPUC) 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 water source is located in the well-protected Sierra region and meets all Federal and State criteria for watershed protection. The SFPUC maintains stringent disinfection treatment practices, extensive bacteriological-quality monitoring, and high operational standards. As a result, the California Department of Public Health (CDPH) and United States Environmental Protection Agency (USEPA) have granted the Hetch Hetchy water source a filtration exemption. In other words, the source is so clean and protected that filtration of water from the Hetch Hetchy Reservoir is not required.

Hetch Hetchy water is supplemented with surface water sources from two local watersheds. Rainfall and runoff collected from the **Alameda Watershed**, within the greater 128,424-acre Southern Alameda Creek Watershed and spanning more than 35,000 acres in Alameda and Santa Clara Counties, are captured in the Calaveras and San Antonio Reservoirs and treated at the Sunol Valley Water Treatment Plant, where filtration and disinfection are provided.

Rainfall and runoff captured in the 23,000-acre **Peninsula Watershed**, located in San Mateo County, are stored in four reservoirs—Crystal Springs (Lower and Upper), San Andreas and Pilarcitos- and treated at the Harry Tracy Water Treatment Plant. Similar treatment processes to Sunol plant are used for treating this local source. In 2012, the Hetch Hetchy Watershed provided most of the total water supply, with the remainder contributed by the two local watersheds.

**THE HIGHEST QUALITY WATER**

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure that the water meets or exceeds federal and state drinking water standards. In 2012, WQD staff conducted 60,640 drinking water tests in the transmission and distribution systems. This monitoring effort is in addition to the extensive treatment process control monitoring performed by the SFPUC certified and knowledgeable treatment plant staff. The SFPUC also has online instruments providing continuous water quality monitoring data at numerous locations.

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 the water poses a health risk.

In order to ensure that tap water is safe to drink, the USEPA and the 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 must 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 at (800) 426-4791.

**SFPUC PROTECTS THE WATERSHED**

The SFPUC actively and aggressively protects the natural water resources entrusted to its care. The Hetch Hetchy Watershed Sanitary Survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities conducted by the SFPUC and its partner agencies (including the National Park Service and the U.S. Forest Service).

The SFPUC also conducts sanitary surveys every five years to detect and track sanitary concerns for the Bay Area watersheds and the approved standby sources in the Early Intake Watershed, which includes Cherry Lake and Lake Eleanor. The latest 5-year surveys were completed in 2011 for the period of 2006-2010. These surveys identified

wildlife, stock, and human activities as potential contamination sources. These reports are available for review at the CDPH's San Francisco District office by calling (510) 620-3474.

### **WATER QUALITY DATA FOR 2012**

The adjacent table lists drinking water contaminants detected in 2012 and the information about their typical sources. Contaminants below detection limits are not shown, in accordance with CDPH guidance. The CDPH allows the SFPUC to monitor for some contaminants less than once per year because their concentrations do not change frequently. The SFPUC received a monitoring waiver from the CDPH for some contaminants that were absent in the water. Some contaminants, such as radionuclides, synthetic organics and those having notification levels are monitored once every nine years due to their historical absence in our water sources.

#### **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, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive Contaminants** can be naturally occurring or be the result of oil and gas production and mining activities.
- **Pesticides and Herbicides** that may come from a variety of sources such as agricultural, urban storm water runoff, and residential uses.

### **KEY WATER QUALITY TERMS**

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

**Public Health Goal (PHG):** The level of a contaminant in drinking water for 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 for 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 and MCLGs as is economically or technologically feasible. Secondary MCLs (SMCLs) are set to protect 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 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, reporting, 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 in the water is also used to indicate the effectiveness of the filtration systems. High turbidity can hinder the effectiveness of disinfectants.

### **CRYPTOSPORIDIUM**

*Cryptosporidium* is a parasitic microbe found in most surface water supplies and can pose a potential health threat. The SFPUC regularly tests for this waterborne pathogen and found it at very low levels in both source and treated water supplies in 2012. 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.

**Purissima Hills Water District (PHWD)**  
**2012 Water Quality Data <sup>(1)</sup>**  
**Hetch Hetchy and Sunol Valley Water Treatment Plant**

DETECTED CONTAMINANTS	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
<b>TURBIDITY</b>						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.2 - 0.5 <sup>(2)</sup>	[2.8] <sup>(3)</sup>	Soil runoff
	NTU	1 <sup>(4)</sup>	N/A	-	[0.26]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	-	min 95% of samples ≤ 0.3 NTU <sup>(4)</sup>	N/A	100%	-	Soil runoff

<b>DISINFECTION BYPRODUCTS AND PRECURSOR (SFPUC Regional System) - for information only</b>						
Total Trihalomethanes	ppb	80	N/A	10 - 63	[46] <sup>(5)</sup>	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	4 - 45	[36] <sup>(5)</sup>	Byproduct of drinking water disinfection
Total Organic Carbon <sup>(6)</sup>	ppm	TT	N/A	2.3 - 3.7	2.7	Various natural and man-made sources

<b>DISINFECTION BYPRODUCTS AND PRECURSOR</b>						
Total Trihalomethanes	ppb	80	N/A	27.3 - 45.5	[42.5] <sup>(5)</sup>	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	33.2 - 40.2	[38.0] <sup>(5)</sup>	Byproduct of drinking water disinfection
Total Organic Carbon <sup>(6)</sup>	ppm	N/A	N/A	1.07 - 1.57	1.28	Various natural and man-made sources

<b>MICROBIOLOGICAL</b>						
Total Coliform <sup>(7)</sup>	-	≤ 5.0% of monthly samples	(0)	-	[0]	Naturally present in the environment
<i>Giardia lamblia</i>	cyst/L	TT	(0)	<0.01 - 0.06	<0.01	Naturally present in the environment

<b>INORGANICS</b>						
Fluoride (source water) <sup>(8)</sup>	ppm	2.0	1	ND - 0.8	0.3 <sup>(9)</sup>	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	0.60-2.80	[2.31] <sup>(10)</sup>	Drinking water disinfectant added for treatment

CONSTITUENTS WITH SECONDARY STANDARDS	Unit	SMCL	PHG	Range	Average	Typical Sources of Contaminant
Aluminum <sup>(11)</sup>	ppb	200	600	ND - 90	ND	Erosion of natural deposits; some water treatment residue
Chloride	ppm	500	N/A	2 - 20	12.3	Runoff / leaching from natural deposits
Color	unit	15	N/A	<5 - 7	<5	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	N/A	31 - 344	181	Substances that form ions when in water
Sulfate	ppm	500	N/A	0.9 - 40	20	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 195	108	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	0.1 - 0.2	0.1	Soil runoff

LEAD AND COPPER	Unit	AL	PHG	Range	90th Percentile	Typical Sources in Drinking Water
Copper	ppb	1300	300	16-250 <sup>(12)</sup>	140	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	<1.0-5.1 <sup>(13)</sup>	4.0	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	Unit	ORL	Range	Average
Alkalinity (as CaCO <sub>3</sub> )	ppm	N/A	10 - 111	61
Bromide	ppb	N/A	<10 - 24	<10
Calcium (as Ca)	ppm	N/A	3 - 28	15
Chlorate <sup>(14)</sup>	ppb	(800) NL	53 - 399	221
Hardness (as CaCO <sub>3</sub> )	ppm	N/A	8 - 114	62
Magnesium	ppm	N/A	0.2 - 10.8	6.1
pH	-	N/A	6.7 - 9.7	8.5
Silica	ppm	N/A	3.2 - 5.3	4.1
Sodium	ppm	N/A	3 - 25	15.7

KEY:
< / ≤ = 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

Notes:

- (1) All results met State and Federal drinking water health standards.
- (2) Turbidity is measured every four hours. These are monthly average turbidity values.
- (3) The highest turbidity of the unfiltered water in 2012 was 2.9 NTU but the water was not served to customers. The brief turbidity spike indicated in the table was not observed upstream in San Joaquin Pipelines.
- (4) There is no turbidity MCL for filtered water. The limits are based on the TT requirements in the State drinking water regulations.
- (5) This is the highest quarterly running annual average value.
- (6) Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only.
- (7) The SFPUC adds 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.
- (8) The SFPUC adds fluoride to an optimum level of 1.0 ppm to help prevent dental caries in consumers. The CDPH specifies the fluoride levels in the treated water to be maintained within a range of 0.8 ppm - 1.5 ppm. In 2012, the range and average of the fluoride levels were 0.4 ppm - 1.3 ppm and 1.0 ppm, respectively.
- (9) The fluoride levels in the Hetch Hetchy and SVWTP raw water were ND and 0.2 ppm, respectively.
- (10) This is the highest quarterly running annual average value.
- (11) Aluminum also has an MCL of 1000 ppb.
- (12) The most recent Lead and Copper Rule monitoring was in September, 2010. 0 of 22 water samples collected at consumer taps had COPPER concentrations above the Action Level.
- (13) The most recent Lead and Copper Rule monitoring was in September, 2010. 0 of 22 water samples collected at consumer taps had LEAD concentrations above the Action Level.
- (14) The detected chlorate in treated water is a degradation byproduct of sodium hypochlorite, the primary disinfectant used by SFPUC for water disinfection.

## **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 USEPA Safe Drinking Water Hotline (800) 426-4791 or on the USEPA website [www.epa.gov/safewater](http://www.epa.gov/safewater).

## **EMERGING CONTAMINANT MONITORING**

Unregulated microorganisms and synthetic or naturally-occurring chemicals that are not commonly monitored by the water utilities are termed contaminants of emerging concern (CEC). More than 100,000 chemicals are registered in the US. New chemicals are registered and new microorganisms are identified everyday. Some of these contaminants can be detected at extremely low levels in the environment by ever-improving laboratory methods. The health significance of these trace contaminants is typically unknown. The WQD has been proactive in addressing CEC through participation in national research projects and conducting independent monitoring of our source waters. To help focus the resources, WQD developed its own approach to organize and prioritize work on the CECs in drinking water and enhance public engagement in CEC issues. Evaluation is conducted every three years and reviewed by the San Francisco Department of Public Health, SFPUC Citizens' Advisory Committee and the Commission. By virtue of its pristine drinking water sources, the SFPUC water has not been vulnerable to many CECs that may concern other water suppliers; e.g., pesticides and pharmaceutical products. Periodic review will allow WQD to adjust priorities based on new information and conditions; e.g., new information on the health significance, occurrence and treatment of CECs. See the link below for SFPUC's CEC approach <http://sfwater.org/modules/showdocument.aspx?documentid=1691>.

## **REDUCING LEAD FROM PLUMBING FIXTURES**

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The PHWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in households or building plumbing components. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. 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).

## **PURISSIMA HILLS WATER DISTRICT OPERATION AND MAINTENANCE**

The PHWD, serving two-thirds of Los Altos Hills, operates the distribution system to ensure that the treated water maintains residual chloramine to prevent the re-growth of microorganisms during the storage and transmission of water. Water is kept fresh by flushing mains and cycling storage tanks, as well as maintaining an active backflow, or cross-connection control, program to help prevent the intrusion of potentially harmful materials into the drinking water system.

## **STORING EMERGENCY WATER SUPPLIES**

Although the PHWD strives to ensure a reliable supply of water for our customers, a natural disaster, such as a major earthquake, could interrupt water delivery. Residents are encouraged to store drinking water in case of an emergency. We recommend storing a minimum of three days' worth of water (one gallon of water per person, per day, including pets) in food-grade plastic containers, such as two-liter soda bottles, and replacing supplies every six months. To learn more about emergency preparedness for yourself and your family, visit [www.72hours.org](http://www.72hours.org).

## **TO LEARN MORE**

Visit the CDPH website at [www.cdph.ca.gov](http://www.cdph.ca.gov) or the USEPA website at [www.epa.gov/safewater](http://www.epa.gov/safewater) if you want to learn more about drinking water regulations.

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