FOR THE RECORD

Water Quality Data and Water Quality Report for 2007 (1)

The following is an excerpt from the 2007 Water Quality Report provided by Stanford in compliance with the requirements of the U.S. Environmental Protection Agency (US EPA) and the California Department of Public Health (CDPH). It is the policy of the Stanford Utilities Division to fully inform its consumers about the water quality standards and typical concentrations of constituents found in the water. Stanford University is in compliance with state and federal drinking water requirements.

DETECTED CONTAMINANTS CONSTITUENTS WITH PRIMARY STANDARDS	Unit	MCL	PHG or (MCLG)	Range or Result	Average or (Maximum)	Typical Sources in Drinking Water
TURBIDITY (2)						
Unfiltered Hetch Hetchy Water, max 5 NTU		TT	NS	0.22 - 0.48 (3)	(1.98) (4)	Soil run-off
Filtered Water - Sunol Valley WTP, max 1 NTU		TT	NS	NA	(0.54)	Soil run-off
95 percentage of time < 0.3 NTU		TT	NS	100% (5)	NA	Soil run-off
DISINFECTION BY-PRODUCTS						
Total Trihalomethanes (TTHMs)	ppb	80	NS	11 - 44	(32) (6)	By-product of drinking water chlorination
Total Haloacetic Acids (HAAs)	ppb	60	NS	3- 29	(18) (6)	By-product of drinking water chlorination
Total Organic Carbon (TOC) (7)	ppm	NS	NS	0.7 - 2.5	1.94	Various natural and man-made sources
DISINFECTION BY-PRODUCTS (Stanford Samples)						
Total Trihalomethanes (TTHMs)	ppb	80	NS	20 - 33.6	(31) (6)	By-product of drinking water chlorination
Total Haloacetic Acids (HAAs)	ppb	60	NS	5 - 22	(24) (6)	By-product of drinking water chlorination
MICROBIOLOGICAL (Stanford Samples)						
Total Coliform						
percentage of positives detected in any month	%	≤5	(0)	0	(0)	Naturally present in the environment
INORGANIC CHEMICALS						
Aluminum	ppb	1000	600	<50-71	<50	Erosion of natural deposits
Fluoride (8)	ppm	2	1	<0.1 - 0.2	0.13	Erosion of natural deposits
Total Chlorine (Stanford Samples)	ppm	MRDL=4	MRDLG=4	1.4 - 2.5	(2.0) (6)	Water disinfectant added for treatment)

CONSTITUENTS WITH SECONDARY STANDARDS	Unit	SMCL	PHG	Range	Average	Typical Sources in Drinking Water
Chloride	ppm	500	NS	<3 - 17	9	Runoff / leaching from natural deposits
Color	unit	15	NS	<5 - 6)	<5	Naturally occurring organic materials
Specific Conductance	µS/cm	1600	NS	32 - 320	185	Substances that form ions when in water
Sulfate	ppm	500	NS	0.8 - 37	17.6	Runoff/leaching from natural deposits
Total Dissolved Solids	ppm	1000	NS	25- 193	109	Runoff/leaching from natural deposits
Turbidity	NTU	5	NS	0.08 - 0.24	0.15	Soil runoff

LEAD AND COPPER RULE STUDY (Stanford Samples)	Unit	AL	PHG	Range	90th Percentile (9)	Typical Sources in Drinking Water
Copper (51 samples collected)	ppb	1300	170	<10 - 100	60 (10)	Corrosion of household plumbing systems
Lead (51 samples collected)	ppb	15	2	<2.0 - 2.1	2.0 (11)	Corrosion of household plumbing systems

OTHER WATER QUALITY PARAMETERS	Unit	NL	Range	Average
Alkalinity (as CaCO3)	ppm	NS	8 - 112	59
Calcium	ppm	NS	3 - 29	15.3
Hardness (as CaCO3)	ppm	NS	8 - 116	61
Magnesium	ppm	NS	<0.2 - 9.4	5.4
pH	unit	NS	8.7- 9.3	9.0
Potassium	ppm	NS	<0.3 - 1.5	0.9
Silica	ppm	NS	4.2 - 9.3	6.1
Sodium	ppm	NS	3 - 22	14

Key:		
</≤	=	less than / less than equal to
TT	=	Treatment Technique
AL	=	Action Level
NA	=	Not Applicable
NL	=	Notification Level
NS	=	No Standard
NTU	=	Nephelometric Turbidity Unit
ppb	=	parts per billion
ppm	=	parts per million
µS/cm	=	microSiemens/centimeter

(1) All results met State and Federal drinking water regulations. Sampling performed by SFPUC, unless otherwise specified.

(2) Turbidity is the water clarity indicator; it also indicates the quality of the water and the treatment system efficiency.

(3) Turbidity is measured every four hours. These are monthly average turbidity values.

(4) This is a single, maximum measurement. This elevated turbidity was caused by the startup of the Hetch Hetchy Aqueduct after shutdown for maintenance work. The turbid water was not served to customers.

(5) This is the minimum percentage of time that the filtered water turbidity is less than 0.3 NTU.

(6) This is the highest quarterly running annual average value.

(7) TOC is a precursor for disinfection by-product formation. Data are obtained from effluent monitoring at Sunol Valley Water Treatment Plant.

(8) The SFPUC adds fluoride to the naturally occurring level to help prevent dental caries in consumers. The fluoride levels in the treated water are maintained within a range of 0.8 - 1.5 ppm, as required by CDPH regulations.

(9) The 90th percentile levels of lead and copper must not be greater than the action levels.

(10) In 2006, no residences were over the copper Action Level at consumer taps. Customer tap sampling is required again in 2009.

(11) In 2006, no residences were over the lead Action Level at consumer taps. Customer tap sampling is required again in 2009.

DRINKING WATER SOURCES

Water supplied to Stanford by the San Francisco Public Utilities Commission (SFPUC) comes from three major sources: Hetch Hetchy Reservoir in the Sierra Nevada Mountains, and local watersheds in Alameda and San Mateo Counties.

Hetch Hetchy Reservoir

Hetch Hetchy Reservoir, which is the largest reservoir in the SFPUC system, is located in Yosemite National Park. It provided approximately 87 percent of the total water supply in 2007. Spring snowmelt flows down the Tuolumne River and fills the Hetch Hetchy reservoir. The high quality Hetch Hetchy water supply meets all federal and state criteria for watershed protection, disinfection treatment, bacteriological quality and operational standards. As a result, the US EPA and CDPH granted the Hetch Hetchy water source a filtration exemption. This exemption is contingent upon the Hetch Hetchy water quality continuing to meet all filtration avoidance criteria.

Alameda Watershed

The Alameda watershed, spans more than 35,000 acres in Alameda and Santa Clara Counties. Surface water from rainfall and runoff is collected in the Calaveras and San Antonio Reservoirs. Prior to distribution, water from the watershed is treated at the Sunol Valley Water Treatment Plant (SVWTP).

San Mateo Watershed

Surface water from rainfall and runoff captured in the 23,000-acre Peninsula Watershed, which is located in San Mateo County, is stored in four reservoirs: Crystal Springs (Lower and Upper), San Andreas, Pilarcitos and Stone Dam. This water source is treated at the Harry Tracy Water Treatment Plant prior to delivery to customers. The water delivered from the SFPUC to Stanford is both chloraminated and fluoridated.

Water System Management

The Utilities Division manages the storage, distribution, maintenance, and monitoring programs for Stanford's drinking water supply.

Stanford routinely collects water quality samples from various locations within the campus distribution system. The most frequently collected samples are analyzed for coliform bacteria, chlorine residual, and general physical parameters.

Supplementary water quality samples are collected to monitor for additional constituents in compliance with CDPH requirements. A certified laboratory analyzes all samples. Stanford submits monthly reports that include all monitoring results to the CDPH.

SFPUC also collects daily water quality samples from various locations within their transmission system. The samples are analyzed for primary standards that apply to the protection of public health and secondary standards that refer to the aesthetic qualities of water such as taste and odor.

The Stanford Utilities Division also maintains flushing, cross-connections, and backflow prevention programs to ensure a consistent high quality drinking water supply.

SFPUC & STANFORD'S 2007 SAMPLING

The adjoining data table summarizes the 2007 sampling results from laboratory analyses of parameters detected in SFPUC's source water supply and Stanford's distribution system. An extensive water sample collection and testing protocol is used at the various water sources throughout the SFPUC transmission system and in the campus distribution system. Both the SFPUC and Stanford monitor for many additional parameters, which were not detected.

The Water Quality Data table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (PHG), the average and range, and the typical sources of such contamination. Footnotes explaining the data and a key to units of measurement are also included.

Please review the 2007 Annual Water Quality Report in its entirety at: facilities.stanford.edu/environment.