



Council Meeting: July 16, 2013

SUBJECT: Public Hearing, Discussion and Possible Action to Review and Receive Comments on *City of Sunnyvale Public Health Goal Report* (City's Water System) Prepared for the California Department of Health Services With Recommendation of No Further Action Required.

BACKGROUND

Section 116470(b) of the California Health and Safety Code (included in Attachment A) requires the preparation of a "Public Health Goal (PHG) Report" every three years if water quality monitoring results over the previous three calendar years indicate levels that exceed any California Public Health Goals (PHGs) and/or federal Maximum Contaminant Level Goals (MCLGs). The attached PHG report (Attachment A) covers the period of calendar years 2010-2012, and has been filed with the California Department of Public Health (CDPH).

State law (the California Health and Safety Code) does not require any action to be taken for mitigating contaminant levels that exceed the PHG but are lower than the Maximum Contaminant Level (MCL) set by the State of California or the US Environmental Protection Agency (USEPA). Review of the report and comments received on the report are for information and recommendation purposes only.

EXISTING POLICY

Goal EM-4 Adequate Water Quality: Ensure that all water meets state & federal standards for aesthetics, quality and health.

DISCUSSION

The report explains that PHGs are non-enforceable goals established by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA). MCLGs are goals that are adopted by USEPA, and only come into play if there are no California PHGs. PHGs may not be more lenient than MCLGs.

The report was prepared by HydroScience Engineers, Inc., a consultant employed by the City. Using an outside consultant helps to maintain objectivity in the analysis and preparation of the report.

During the three year period covered by the report there were no contaminants found in the water at a level higher than a California PHG, and only one contaminant that was detected in excess of a federal MCLG. The one contaminant found was coliform bacteria, a non-harmful constituent, in excess of the MCLG level of zero. Details about this result are included in the report, as well as the recommendation that no further steps be taken at this time.

FISCAL IMPACT

There is no fiscal impact in the review and consideration of the information included in the attached report, and there are no recommended actions that would require monetary expenditure.

PUBLIC CONTACT

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's Web site.

ALTERNATIVES

1. Accept and respond to public comments on Sunnyvale's 2013 Public Health Goals Report, approve the report, and direct staff to file with the California Department of Public Health.
2. Request additional follow-up information from the Environmental Services Department, in regards to information in the PHG report, and/or questions or issues raised during the public hearing.

RECOMMENDATION

Staff recommends Alternative #1: 1. Accept and respond to public comments on Sunnyvale's 2013 Public Health Goals Report, approve the report, and direct staff to file with the California Department of Public Health.

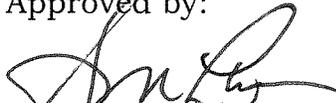
Reviewed by:



John Stufflebean, Director, Environmental Services Department

Prepared by: Mansour Nasser, Water & Sewer Systems Division Manager

Approved by:


Gary M. Luebbers
City Manager

Attachments

- A. City of Sunnyvale Public Health Goals Report

ATTACHMENT A

CITY OF SUNNYVALE – PUBLIC HEALTH GOALS REPORT

BACKGROUND

The California Health and Safety Code, section 116470(b) (see **Attachment 1**) requires public water systems serving more than 10,000 service connections to prepare a report by July 1, 2013 if water quality monitoring results over the past three years exceed any California Public Health Goals (PHGs) and/or federal Maximum Contaminant Level Goals (MCLGs). PHGs are non-enforceable goals established by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA). MCLGs are goals that are adopted by USEPA, and only come into play if there is no California PHG. PHGs may not be more lenient than MCLGs.

Only constituents that have a California primary drinking water standard and for which either a PHG or MCLG has been set are to be addressed in the Report. **Attachment 2** contains a list of the regulated constituents and their respective PHGs or MCLGs. Total coliform was the only constituent which minimally exceeded the MCLG, but still well below any action level. There is no PHG for total coliform.

If a constituent was detected by a water supplier between January 1, 2010 and December 31, 2012 at a level exceeding an applicable PHG or MCLG, the Report shall contain information required by the law. The required information includes:

- Numerical public health risk associated with the enforced Maximum Contaminant Level (MCL) and the PHG or MCLG;
- Category or type of risk to health that could be associated with each constituent;
- Best treatment technology available, if any, that could be used to remove or reduce the constituent to a level at or below the PHG; and
- Estimate of the cost to install that treatment and if it is appropriate and feasible, and
- Description of the actions, if any, the City intends to take to reduce the level of the constituent.

PHG/MCLG vs. MCL

PHGs are set by OEHHA (and MCLGs by USEPA) based solely on public health risk considerations. MCLs are set by USEPA or the California Department of Public Health (CDPH) as the contaminants maximum level which public water systems must not exceed. Violations of MCLs can result in fines, abatement orders, or closure of facilities. When the USEPA, or the CDPH, adopts an MCL, they take into account such factors as (1) analytical methodologies, (2) effectiveness of available treatment technologies, and (3) health benefits versus costs. PHGs (and MCLGs) are not enforceable and are not required to be met by any public water system.

Water Quality Data Review for this Report

Water quality data collected by the City of Sunnyvale during the calendar years of 2010, 2011 and 2012 for purposes of determining compliance with drinking water standards were reviewed in order to prepare this Report. This data was summarized in our 2010, 2011 and 2012 Annual Water Quality Reports, also known as Consumer Confidence Reports, which were distributed to all of our customers by July of the following year and is typically included in the summer issue of

the City's Quarterly Report (see **Attachment 3** for copies of the 2010, 2011, and 2012 City of Sunnyvale Consumer Confidence Reports).

Guidelines Followed for Preparation of this Report

The Association of California Water Agencies (ACWA) formed a workgroup which prepared guidelines for water utilities to use in preparing required PHG Reports. These guidelines, titled "Suggested Guidelines for Preparation of Required Reports on PUBLIC HEALTH GOALS (PHGs) to satisfy requirements of California Health and Safety Code Section 116470(b)" were used in the preparation of this Report.

Best Available Treatment Technology and Cost Estimates

Both USEPA and CDPH adopt Best Available Technologies (BATs), which are the best known methods of reducing contaminant levels below the MCL. This report also considers other commercially available BATs that may have the ability to further reduce constituent levels beyond the MCL to the PHG/MCLG level or below. While a BAT may identify a process that can reduce the presence of a constituent, the cost of implementation can be a major factor in deciding whether or not to adopt the process. For a system that is in compliance with MCL levels, striving to keep constituents below PHG/MCLG levels must be evaluated with costs in mind.

Costs were estimated for the implementation of BATs for each constituent exceeding PHGs or MCLGs. The PHGs/MCLGs are set much lower than the MCL, and it is not always possible or feasible to determine what treatment technology is able to further reduce a constituent to a level at or below the PHG/MCLG. In some cases, such as when the MCLG is set at zero, there may not be commercially available technology to reach that level. The issue is further complicated because it is often not possible to verify by analytical means that the constituent has been totally eliminated, as some laboratory analyses can detect constituents down to a CDPH approved level with certainty and are unable to definitively identify the constituent at lower levels. In some cases, installing treatment to try and further reduce very low levels of one constituent may have adverse effects on other aspects of water quality. This report presents the required cost estimates to implement the BATs to reduce the constituent to a level at or below the PHG/MCLG.

CONSTITUENTS DETECTED THAT EXCEED A PHG OR AN MCLG

In reviewing water quality monitoring data collected during 2010, 2011 and 2012, City of Sunnyvale staff have concluded that a PHG Report is required that addresses coliform bacteria.

The following section presents a discussion of the constituent that was detected in the drinking water distribution system at levels above the MCLG.

Coliform Bacteria

In 1989 EPA developed the Total Coliform Rule. The MCL for total coliforms is five percent (5%) positive samples of all samples collected in each month. The MCLG is zero (there is no PHG for coliform bacteria).

The reason for the coliform standard is to minimize the possibility for drinking water to contain pathogens. Pathogens are microorganisms that can cause disease if ingested. Coliform bacteria is an indicator organism that is not generally considered harmful, but is used to identify

the potential presence of pathogens in the water. It is not unusual for a system to have an occasional positive sample. A positive sample serves as a trigger to prompt further investigation into the presence of other organisms, requiring additional sampling to be done immediately after it is discovered.

The monitoring of a non-harmful constituent (coliform bacteria) to indicate the possible presence of harmful pathogens makes for an inexact, but generally conservative process. Therefore, it is not possible to state a specific numerical health risk associated with a given level of coliform bacteria. EPA normally sets MCLGs "at a level where no known or anticipated adverse effects on persons would occur." When EPA published the final Total Coliform Rule they stated that it was not possible to determine such a level with coliform sampling. The absence of coliform bacteria is therefore the goal, and when that goal is not achieved, follow-up testing verifies whether an actual pathogen is present.

Best Available Technology Identified in the Total Coliform Rule

CDPH identifies the best available technologies to meet the total coliform MCL in Title 22 of the California Code of Regulations Section 64447, which are as follows:

1. Protection of wells from coliform contamination by appropriate placement and construction;
2. Maintenance of a disinfectant residual throughout the distribution system;
3. Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, and continual maintenance of positive water pressure in all parts of the distribution system;
4. Filtration and/or disinfection of surface water as described in Subpart H, or disinfection of ground water using strong oxidants such as chlorine, chlorine dioxide, or ozone; or
5. The development and implementation of an EPA-approved State Wellhead Protection Program under section 1428 of the Safe Drinking Water Act.

The City of Sunnyvale has implemented all of the above actions or processes, or obtains water from suppliers who implement these processes (such as filtration and chloramination). There is one method that may further reduce or eliminate the presence of total coliform, which is to increase the amount of disinfectant residual in the distribution system; however, the tradeoff includes the increased potential for the presence of cancer-causing disinfection byproducts. In the interest of protecting the public's health, the City would prefer to continue to implement the current technologies and monitoring and maintenance program. As such, there is no estimated cost associated with additional treatment to reduce the incidence of coliform bacteria.

Sunnyvale Total Coliform Rule Monitoring Results

Each month the City collects at least 140 samples from sites located throughout the distribution system that are analyzed for the presence of coliform bacteria. If a positive coliform sample is found, follow-up sampling is done for more specific indicators of bacterial contamination.

Over the last three years, the monthly average of positive samples for coliform bacteria ranged from 0% to 0.71 %. All instances where a positive coliform sample was initially found, follow-up samples were negative for E. coli bacteria. The data indicated that these were isolated incidents, and the quality of the water in the distribution system was never compromised.

The City of Sunnyvale works closely with our regional water suppliers, the Santa Clara Valley Water District (SCVWD) and the San Francisco Public Utilities Commission (SFPUC). Both SCVWD and SFPUC provide water with a chloramine residual in accordance with the Total Coliform Rule.

Other measures and programs that the City implements to protect the microbiological quality of the drinking water served include:

- flushing of all distribution system dead-ends every year;
- flushing of all hydrants every two years;
- implementation of a cross-connection control program;
- monitoring of a disinfectant residual throughout the distribution system;
- ongoing microbiological monitoring and surveillance program of all groundwater sources and the distribution system;
- implementation of a tank cleaning program every five years; and
- maintenance of positive pressures throughout the distribution system at all times.

As stated above, monitoring for coliform bacteria to indicate the possible presence of harmful pathogens is a conservative, yet inexact process. As such, there is no specific numerical correlation to health risk. However, the City has implemented a vigilant monitoring and maintenance program that is intended to meet the requirements of the Total Coliform Rule and protect public health.

No additional actions are recommended at this time for coliform bacteria.

SUMMARY AND CONCLUSION

The drinking water for the City of Sunnyvale meets all standards established by CDPH and USEPA to protect public health. No additional treatment is recommended in an effort to decrease the incidence of total coliform in system water testing. The level of total coliform detected is well below the MCL, and elimination may be impossible. Therefore, no additional actions are proposed at this time for coliform bacteria. The City and its water suppliers will continue to implement the BATs as well as the monitoring and maintenance program.

Attachments:

1. Excerpt from California Health & Safety Code: Section 116470 (b)
2. Table of Regulated Constituents with MCLs, PHGs or MCLGs
3. Consumer Confidence Reports for 2010, 2011 and 2012.

ATTACHMENT No. 1

CALIFORNIA HEALTH AND SAFETY CODE

Section §116470. Public Health Goal Report

- (b) On or before July 1, 1998, and every three years thereafter, public water systems serving more than 10,000 service connections that detect one or more contaminants in drinking water that exceed the applicable public health goal, shall prepare a brief written report in plain language that does all of the following:
- (1) Identifies each contaminant detected in drinking water that exceeds the applicable public health goal.
 - (2) Discloses the numerical public health risk, determined by the office, associated with the maximum contaminant level for each contaminant identified in paragraph (1) and the numerical public health risk determined by the office associated with the public health goal for that contaminant.
 - (3) Identifies the category of risk to public health, including, but not limited to, carcinogenic, mutagenic, teratogenic, and acute toxicity, associated with exposure to the contaminant in drinking water, and includes a brief plainly worded description of these terms.
 - (4) Describes the best available technology, if any is then available on a commercial basis, to remove the contaminant or reduce the concentration of the contaminant. The public water system may, solely at its own discretion, briefly describe actions that have been taken on its own, or by other entities, to prevent the introduction of the contaminant into drinking water supplies.
 - (5) Estimates the aggregate cost and the cost per customer of utilizing the technology described in paragraph (4), if any, to reduce the concentration of that contaminant in drinking water to a level at or below the public health goal.
 - (6) Briefly describes what action, if any, the local water purveyor intends to take to reduce the concentration of the contaminant in public drinking water supplies and the basis for that decision.

ATTACHMENT No. 2

MCLs, DLRs and PHGs for Regulated Drinking Water Contaminants

Last Update: February 12, 2013

Prepared and provided by the Association of California Water Agencies (ACWA).

ATTACHMENT No. 2

2013 PHG Triennial Report: Calendar Years 2010-2011-2012				
MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants (Units are in milligrams per liter (mg/L), unless otherwise noted.)				
Last Update: February 12, 2013 (Reference: http://www.cdph.ca.gov/certlic/drinkingwater/Pages/MCLsandPHGs.aspx)				
This table includes:				
<ul style="list-style-type: none"> • CDPH's maximum contaminant levels (MCLs) • CDPH's detection limits for purposes of reporting (DLRs) • Public health goals (PHGs) from the Office of Environmental Health Hazard Assessment (OEHHA) • PHGs for NDMA and 1,2,3-Trichloropropane (1,2,3-TCP is unregulated) are at the bottom of this table • The federal MCLG for chemicals without a PHG, microbial contaminants, and the DLR for 1,2,3-TCP 				
Constituent	MCL	DLR	PHG or (MCLG)	Date of PHG
Chemicals with MCLs in 22 CCR §64431—Inorganic Chemicals				
Aluminum	1	0.05	0.6	2001
Antimony	0.006	0.006	0.02	1997
Arsenic	0.010	0.002	0.000004	2004
Asbestos (MFL = million fibers per liter; for fibers >10 microns long)	7 MFL	0.2 MFL	7 MFL	2003
Barium	1	0.1	2	2003
Beryllium	0.004	0.001	0.001	2003
Cadmium	0.005	0.001	0.00004	2006
Chromium, Total - OEHHA withdrew the 1999 0.0025 mg/L PHG in Nov 2001	0.05	0.01	(0.100)	
Chromium, Hexavalent (Chromium-6) - MCL to be established - currently regulated under the total chromium MCL	--	0.001	0.00002	2011
Cyanide	0.15	0.1	0.15	1997
Fluoride	2	0.1	1	1997
Mercury (inorganic)	0.002	0.001	0.0012	1999 (rev2005)*
Nickel	0.1	0.01	0.012	2001
Nitrate (as NO3)	45	2	45	1997
Nitrite (as N)	1 as N	0.4	1 as N	1997
Nitrate + Nitrite	10 as N	0.4	10 as N	1997
Perchlorate	0.006	0.004	0.006	2004
Selenium	0.05	0.005	0.03	2010
Thallium	0.002	0.001	0.0001	1999 (rev2004)
Copper and Lead, 22 CCR §64672.3				
<i>Values referred to as MCLs for lead and copper are not actually MCLs; instead, they are called "Action Levels" under the lead and copper rule</i>				
Copper	1.3	0.05	0.3	2008
Lead	0.015	0.005	0.0002	2009

ATTACHMENT No. 2

Constituent	MCL	DLR	PHG or (MCLG)	Date of PHG
Radionuclides with MCLs in 22 CCR §64441 and §64443—Radioactivity				
[units are picocuries per liter (pCi/L), unless otherwise stated; n/a = not applicable]				
Gross alpha particle activity - OEHHA concluded in 2003 that a PHG was not practical	15	3	(zero)	n/a
Gross beta particle activity - OEHHA concluded in 2003 that a PHG was not practical	4 mrem/yr	4	(zero)	n/a
Radium-226	--	1	0.05	2006
Radium-228	--	1	0.019	2006
Radium-226 + Radium-228	5	--	(zero)	--
Strontium-90	8	2	0.35	2006
Tritium	20,000	1,000	400	2006
Uranium	20	1	0.43	2001
Chemicals with MCLs in 22 CCR §64444—Organic Chemicals				
(a) Volatile Organic Chemicals (VOCs)				
Benzene	0.001	0.0005	0.00015	2001
Carbon tetrachloride	0.0005	0.0005	0.0001	2000
1,2-Dichlorobenzene	0.6	0.0005	0.6	1997 (rev2009)
1,4-Dichlorobenzene (p-DCB)	0.005	0.0005	0.006	1997
1,1-Dichloroethane (1,1-DCA)	0.005	0.0005	0.003	2003
1,2-Dichloroethane (1,2-DCA)	0.0005	0.0005	0.0004	1999 (rev2005)
1,1-Dichloroethylene (1,1-DCE)	0.006	0.0005	0.01	1999
cis-1,2-Dichloroethylene	0.006	0.0005	0.1	2006
trans-1,2-Dichloroethylene	0.01	0.0005	0.06	2006
Dichloromethane (Methylene chloride)	0.005	0.0005	0.004	2000
1,2-Dichloropropane	0.005	0.0005	0.0005	1999
1,3-Dichloropropene	0.0005	0.0005	0.0002	1999 (rev2006)
Ethylbenzene	0.3	0.0005	0.3	1997
Methyl tertiary butyl ether (MTBE)	0.013	0.003	0.013	1999
Monochlorobenzene	0.07	0.0005	0.2	2003
Styrene	0.1	0.0005	0.0005	2010
1,1,2,2-Tetrachloroethane	0.001	0.0005	0.0001	2003
Tetrachloroethylene (PCE)	0.005	0.0005	0.00006	2001
Toluene	0.15	0.0005	0.15	1999
1,2,4-Trichlorobenzene	0.005	0.0005	0.005	1999
1,1,1-Trichloroethane (1,1,1-TCA)	0.2	0.0005	1	2006
1,1,2-Trichloroethane (1,1,2-TCA)	0.005	0.0005	0.0003	2006
Trichloroethylene (TCE)	0.005	0.0005	0.0017	2009
Trichlorofluoromethane (Freon 11)	0.15	0.005	0.7	1997
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	1.2	0.01	4	1997 (rev2011)
Vinyl chloride	0.0005	0.0005	0.00005	2000
Xylenes	1.75	0.0005	1.8	1997

ATTACHMENT No. 2

Constituent	MCL	DLR	PHG or (MCLG)	Date of PHG
Chemicals with MCLs in 22 CCR §6444—Organic Chemicals				
(b) Non-Volatile Synthetic Organic Chemicals (SOCs)				
Alachlor	0.002	0.001	0.004	1997
Atrazine	0.001	0.0005	0.00015	1999
Bentazon	0.018	0.002	0.2	1999 (rev2009)
Benzo(a)pyrene	0.0002	0.0001	0.000007	2010
Carbofuran	0.018	0.005	0.0017	2000
Chlordane	0.0001	0.0001	0.00003	1997 (rev2006)
Dalapon	0.2	0.01	0.79	1997 (rev2009)
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0.00001	0.0000017	1999
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.07	0.01	0.02	2009
Di(2-ethylhexyl)adipate	0.4	0.005	0.2	2003
Di(2-ethylhexyl)phthalate (DEHP)	0.004	0.003	0.012	1997
Dinoseb	0.007	0.002	0.014	1997 (rev2010)
Diquat	0.02	0.004	0.015	2000
Endrin	0.002	0.0001	0.0018	1999 (rev2008)
Endothal	0.1	0.045	0.58	1997
Ethylene dibromide (EDB)	0.00005	0.00002	0.00001	2003
Glyphosate	0.7	0.025	0.9	2007
Heptachlor	0.00001	0.00001	0.000008	1999
Heptachlor epoxide	0.00001	0.00001	0.000006	1999
Hexachlorobenzene	0.001	0.0005	0.00003	2003
Hexachlorocyclopentadiene	0.05	0.001	0.05	1999
Lindane	0.0002	0.0002	0.000032	1999 (rev2005)
Methoxychlor	0.03	0.01	0.00009	2010
Molinate	0.02	0.002	0.001	2008
Oxamyl	0.05	0.02	0.026	2009
Pentachlorophenol	0.001	0.0002	0.0003	2009
Picloram	0.5	0.001	0.5	1997
Polychlorinated biphenyls (PCBs)	0.0005	0.0005	0.00009	2007
Simazine	0.004	0.001	0.004	2001
2,4,5-TP (Silvex)	0.05	0.001	0.025	2003
2,3,7,8-TCDD (dioxin)	3x10 ⁻⁸	5x10 ⁻⁹	5x10 ⁻¹¹	2010
Thiobencarb	0.07	0.001	0.07	2000
Toxaphene	0.003	0.001	0.00003	2003

ATTACHMENT No. 2

Constituent	MCL	DLR	PHG or (MCLG)	Date of PHG
Chemicals with MCLs in 22 CCR §64533—Disinfection Byproducts				
Total Trihalomethanes	0.080	--	--	--
Bromodichloromethane	--	0.0010	(zero)	--
Bromoform	--	0.0010	(zero)	--
Chloroform	--	0.0010	(0.07)	--
Dibromochloromethane	--	0.0010	(0.06)	--
Haloacetic Acids (five) (HAA5)	0.060	--	--	--
Monochloroacetic Acid	--	0.0020	(0.07)	--
Dichloroacetic Acid	--	0.0010	(zero)	--
Trichloroacetic Acid	--	0.0010	(0.02)	--
Monobromoacetic Acid	--	0.0010	--	--
Dibromoacetic Acid	--	0.0010	--	--
Bromate	0.010	0.0050 or 0.0010 ^a	0.0001	2009
Chlorite	1.0	0.020	0.05	2009
Microbiological Contaminants (TT = Treatment Technique)				
Coliform % positive samples	%	5	(zero)	
<i>Cryptosporidium</i> **		TT	(zero)	
<i>Giardia lamblia</i> **		TT	(zero)	
<i>Legionella</i> **		TT	(zero)	
Viruses**		TT	(zero)	
Chemicals with PHGs established in response to CDPH requests. These are <u>not</u> currently regulated drinking water contaminants.				
N-Nitrosodimethylamine (NDMA)	--	--	0.000003	2006
1,2,3-Trichloropropane	--	0.000005	0.000007	2009

Notes:

^a CDPH will maintain a 0.0050 mg/L DLR for bromate to accommodate laboratories that are using EPA Method 300.1. However, laboratories using EPA Methods 317.0 Revision 2.0, 321.8, or 326.0 must meet a 0.0010 mg/L MRL for bromate and should report results with a DLR of 0.0010 mg/L per Federal requirements.

*OEHHA's review of this chemical during the year indicated (rev20XX) resulted in no change in the PHG

** Surface water treatment = TT

ATTACHMENT No. 3

City of Sunnyvale Consumer Confidence Reports:

- 2010 Water Quality Report
- 2011 Water Quality Report
- 2012 Water Quality Report

IMPORTANT CONTACT INFORMATION

CITY CONTACTS

City of Sunnyvale
456 West Olive Avenue
Sunnyvale, CA 94086
Tel: (408) 730-7415
TDD: (408) 730-7501
Fax: (408) 730-7285
www.sunnyvale.ca.gov

Hours of Operation:
8 a.m. to 5 p.m., M-F

Field Services (Leaks, Breaks, and Water Quality Questions)
(408) 730-7510

Utility Division (Billing)
(408) 730-7400, Residential
(408) 730-7681, Commercial

Backflow and Cross Connection Control Program
(408) 730-7574

SCVWD Water Conservation Hotline
(408) 265-2607, ext. 2554

WEB RESOURCES

California Department of Public Health
www.cdph.ca.gov

US Environmental Protection Agency
www.water.epa.gov/drink

Department of Water Resources
www.dwr.water.ca.gov

Emergency Preparedness
www.ready.gov

Bay Area Water Supply and Conservation Agency
www.bawsc.org

American Water Works Association
www.awwa.gov
www.DrinkTap.org

TO GET INVOLVED

To provide input on decisions that affect drinking water quality, you are welcome to speak on any issue, specifically coming before the City Council at a regularly scheduled council meeting. You can also speak on any topic you wish to bring to the Council's attention during the "Citizens to be Heard" portion of the meeting agenda. Alternatively, you can send a letter in advance of a meeting.

City Council Meetings
City Hall Council Chambers
456 West Olive Avenue
Sunnyvale, CA 94086
Tuesdays, 7 p.m.

A list of City Council meetings, agenda items, and study issues can be obtained by calling the City Clerk's office at (408) 730-7483 or by visiting our website at www.sunnyvale.ca.gov.



HEALTH & EDUCATION INFORMATION

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 Safe Drinking Water Hotline.

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 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.

USEPA Safe Drinking Water Hotline ▶
(800) 426-4791

EPA Statement on Chromium-6 (Hexavalent Chromium) in Drinking Water

The presence of chromium-6 in drinking water and its potential health effects has been an issue of growing concern across the nation. There is currently very little evidence to suggest that chromium-6 present in low concentrations in drinking water can cause cancer or other adverse health effects in humans. To date, only a few animal studies have linked chromium-6 to cancer, and only when animals were given doses that were hundreds of times greater than the safety standards for human exposure.

In California, chromium-6 is regulated under the 50-parts per billion (ppb) MCL for total chromium. The Office of Environmental Health Hazard Assessment (OEHHA) within the California EPA, is currently in the process of finalizing a Public Health Goal (PHG) Level of 0.02 ppb. The PHG is a level of drinking water contaminant at which adverse health effects are not expected to occur from a lifetime of exposure.

The EPA has issued a statement on chromium-6, as well as other information, which can be found at <http://water.epa.gov/drink/info/chromium/index.cfm>.



CITY OF SUNNYVALE 2010 WATER QUALITY REPORT

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.

Mahalinga ang impormasyong ito. Mangyaring ipatalim ito.

Chí tiết này rất quan trọng. Xin nhờ người dịch cho quý vị.

此份有關飲用水報告，內有重要資料和訊息，請找他人為你翻譯及解釋清楚。

यह सूचना महत्वपूर्ण है।
कृपया इसके किसी से शिका अनुवाद कायम।

Last year your tap water met all state and federal drinking water health standards

The City of Sunnyvale aims to provide superior service while delivering a reliable, high quality drinking water supply to our customers. Last year, your tap water met all state and federal drinking water health standards. The City vigilantly safeguards its water supplies, and once again we are proud to report that our system has met and/or exceeded water quality standards.

WHAT'S INSIDE ▶

Important information about your water
Tips for saving water
Ways to contact the City

Protecting your water supply

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.

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.

Protection begins in the watersheds. Protecting the water supply is important to ensure that water is safe from contamination and aesthetically pleasing for use. Contamination requires treatment, which increases the cost to deliver water to your tap. Here are ways that you can help protect our watershed:

- Eliminate excess use of lawn and garden fertilizers and pesticides
- Pick up after your pets
- Take used motor oil and other recyclables to the SMaRT Station
- Dispose of pharmaceuticals at any Sunnyvale fire station. Medications should not be flushed down drains or put in the garbage.
- Dispose of cleaners, chemicals, and paints at a Household Hazardous Waste Drop-off Event
- Volunteer in your community. The Creek Connections Action Group works to protect the County's waterways. Visit www.cleancreek.org.
- Participate in public meetings and forums. It allows decision-makers to hear your perspective and you to be involved in protecting your water supply.

More information about disposal and recycling ▶
Call (408) 730-7262.

SMaRT® Station
301 Carl Road, Sunnyvale, CA 94089
Open daily, 8 a.m. to 5 p.m., Tel: (408) 752-8530

Household Hazardous Waste Drop-off
164 Carl Road, Sunnyvale, CA 94089
Every 3rd Saturday, 8 a.m. to 1 p.m.



Where your water comes from

The City of Sunnyvale has three different sources of drinking water supply: local groundwater, treated surface water from the Santa Clara Valley Water District (SCVWD), and treated surface water from the San Francisco Public Utilities Commission (SFPUC). There are pockets of Sunnyvale Customers that receive water from the California Water Service Company (Cal Water); questions regarding the source and delivery of water provided by Cal Water can be directed to its local office at (650) 917-0152.

Local Groundwater

The City owns, operates, and maintains eight deep wells. The wells are used to help supplement the imported water supplies during peak demands in the summer months and emergency situations. The City is always working to increase flexibility in local groundwater supplies, enhance water quality, reduce operating costs, and increase reliability. Recent groundwater improvements include water well connections, electrical upgrades, and installation of an emergency generator. Groundwater pumped from these wells is taxed by SCVWD.

The City completed a Drinking Water Source Assessment Program (DWSAP) in January 2003 for these groundwater sources. The City's groundwater sources are considered most vulnerable to

contamination by leaky underground fuel tanks, dry cleaning chemicals, sewer collection systems, old septic systems, and machine shops.

SFPUC Supply

The City purchases a blend of Hetch Hetchy water and treated water from SFPUC to serve the northern part of the City. Filled water turbidity from SFPUC met the standard of 0.3 NTU or less, 95% of the time.

The Hetch Hetchy Watershed provides most of the SFPUC water supply, supplemented by the Alameda watershed. The major water source originates from spring snowmelt flowing down the Tuolumne River and is stored in the Hetch Hetchy Reservoir. Since this water source meets all federal and state standards for watershed protection, disinfection treatment practices, bacteriological quality monitoring,

and operations, the State has granted this water source a filtration exemption.

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, the water from these reservoirs is treated. Fluoridation, chloramination, and corrosion control treatment are provided for the combined Hetch Hetchy and treated water. Fluoride is added to the naturally occurring level to help protect against tooth decay in consumers. The fluoride levels in the treated water are maintained within a range of 0.8-1.5 mg/L as required by CDPH.

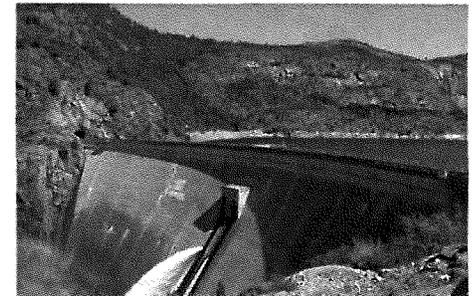
The SFPUC aggressively protects the natural water resources entrusted to its care. Its annual Hetch Hetchy Watershed survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities by the SFPUC and its

partner agencies, including the National Park Service, to reduce or eliminate contamination sources. The SFPUC also conducts sanitary surveys of the local Alameda and Peninsula watersheds every five years. These surveys identified wildlife and human activity as potential contamination sources. The reports are available for review at the CDPH San Francisco District office.

More information on SFPUC ▶
Visit <http://sfpuc.org>, or call CDPH (619) 620-3474

SCVWD Supply

The City purchases treated surface water from SCVWD and delivers it to the southern portion of the City. SCVWD imports more than half of its supply from the South Bay Aqueduct, Lake Del Valle, and San Luis Reservoir, which all draw water from the Sacramento-San Joaquin Delta Watershed. SCVWD local surface water sources include Anderson and Calero Reservoirs.



SCVWD source waters are vulnerable to potential contamination from a variety of land use practices, such as agricultural and urban runoff, recreational activities, livestock grazing, and residential and industrial development. Imported sources are vulnerable to wastewater treatment plant discharges, seawater intrusion, and wildfires in watershed areas. Local sources are also vulnerable

to contamination from commercial stables and historic mining practices. No contaminant associated with any of these activities has been detected in SCVWD treated water. Water treatment plants provide multiple barriers for physical removal and disinfection of contaminants.

More information on SCVWD ▶
Visit www.valleywater.org

WATER CONSERVATION TIPS



SCVWD Water Conservation ▶
Hotline (408) 265-2637, ext. 2554

The City works cooperatively with our water wholesalers to provide residents with advice, assistance, and access to programs. The following water-saving tips are simple ways to conserve water both indoors and out, and are provided jointly by the City and SCVWD.

Steps to Save Water Indoors

- Turn off the faucet while you brush your teeth.
- Take shorter showers. You will save 2.5 gallons of water each minute.
- Install water-efficient faucet aerators and showerheads in your kitchen and bathrooms.
- Check toilets and faucets for leaks. Running toilets can waste 2 gallons a minute while leaky faucets can waste thousands of gallons.
- Do not use the toilet as a wastebasket. Only toilet paper goes in the toilet.
- Only wash full loads of laundry and dishes.

- Rinse fruits and vegetables in a pan instead of using running water.
- Keep a pitcher of drinking water in the refrigerator. Running tap water to cool it off for drinking is wasteful.
- Replace your old front-loading clothes washer with a high-efficiency model. For information about rebates call the water conservation hotline.
- If your toilet uses over 3.5 gallons per flush replace it with a high-efficiency toilet. New models use 70% less water. For information about rebates call the water conservation hotline.

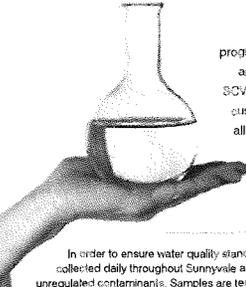
Steps to Save Water Outdoors

- Plant native or drought-tolerant plants that require less watering. Native plants promote healthier local ecosystems.
- Use a broom to sweep off pavement. Using a hose to wash sidewalks, driveways and patios wastes money and water.
- Apply organic mulch around plants to reduce moisture loss, keep weed-growth down, and promote a healthier soil environment.
- Deep soak your lawn to ensure moisture reaches the roots. Light sprinkle watering evaporates quickly and encourages shallow root systems that need more

- frequent watering.
- Check for leaks in pipes, sprinkler heads, and valves.
- Water during cool parts of the day. Early morning is the best time since it helps prevent growth of fungus.
- Water your lawn only when it needs it. You can test it by stepping on it and see if it springs back up. If it does, it does not need watering.
- Avoid watering on windy days.
- Use drip irrigation in larger gardens with weather based irrigation control. For information about rebates call the water conservation hotline.

2010 WATER QUALITY TEST RESULTS

The City of Sunnyvale has instituted a comprehensive water quality monitoring program that encompasses City-owned wells and all water purchased from SFPUC and SCWWD. This program ensures that all of our customers receive water that complies with all regulatory criteria and that no maximum contaminant levels (MCLs) or maximum contaminant level goals (MCLGs) for regulated chemicals, bacteria, or pollutants are exceeded.



In order to ensure water quality standards are met, drinking water samples are collected daily throughout Sunnyvale and analyzed for a variety of regulated and unregulated contaminants. Samples are tested by the City's certified laboratory and an independent certified laboratory using the latest testing procedures and equipment. We collect more samples than required by the CDPH to provide you with the highest quality of water at all times. In addition, the City's wholesalers, SCWWD and SFPUC, conduct their own testing before delivering water to the City. Such measures help us to continue meeting established water quality standards.

The table to the right shows the results of the distribution system and source water analyses conducted by the City, SCWWD, and SFPUC. Water quality data is grouped by water source. Last year we conducted more than 20,000 tests for more than 100 parameters. We detected only 11 of these parameters, and none were found at levels higher than CDPH allows.

Only the parameters detected are shown. Other constituents were analyzed but are not listed because they were not detected. Additionally, unregulated parameters are shown to provide you with supplemental information.

Some data – although representative – was collected prior to 2010, as the CDPH requires monitoring for some constituents less than once per year since the concentrations of these constituents do not vary frequently or significantly.



More information ▶
For a complete list of all the chemicals analyzed, or to ask questions about this report or the City's water quality monitoring program, please contact:

Wai Chong
City of Sunnyvale
Water Operations Manager
Tel: (408) 730-7510
TDD: (408) 730-7511
wchong@ci.sunnyvale.ca.us

PRIMARY DRINKING WATER STANDARDS (PUBLIC HEALTH RELATED STANDARDS)

Parameter	Unit	MCL (MCLG) or MRDL	PHG (MCLG) or (MRDLG)	Groundwater Well		SCWWD		SFPUC		Typical Sources *
				Average or (Max)	Range	Average or (Max)	Range	Average or (Max)	Range	
INORGANIC CHEMICALS (SOURCE WATER SAMPLING)										
Aluminum	ppm	1	0.6	ND	ND	ND	ND-0.061	ND	ND	2, 4
Barium	ppm	1	2	0.11	0.09-0.12	ND	ND	ND	ND	3
Fluoride	ppm	2	1	0.15	0.13-0.19	ND	ND-0.2	0.3	ND-0.7	3, 5, 6
Turbidity	NTU	TT	NA	0.13	0.05-0.0	0.08	0.07-0.09	(4.9)	0.2-0.6	2
Nitrate as NO ₃	ppm	45	45	15.8	9.3-27.2	2	ND-5	ND	ND	3, 7, 8
DISINFECTION BYPRODUCTS AND PRECURSORS (SOURCE WATER SAMPLING)										
Total Trihalomethanes	ppb	80	NA			57	40-89	40	14-92	9
Total Haloacetic Acids	ppb	60	NA			17	3-35	25	7-65	9
TOC (precursor control)	ppm	TT	NA			2.19	1.80-2.92	2.7	2.4-3.2	10
LEAD AND COPPER (SUNNYVALE 2007 AT-THE-TAP SAMPLING)										
Lead	ppb	(15)	0.2		ND			0 out of 51		3, 17, 19
Copper	ppm	(1.3)	0.3		0.163			0 out of 51		3, 17, 16
DISINFECTION RESIDUALS AND BYPRODUCTS (DISTRIBUTION SYSTEM SAMPLING)										
Disinfectant Residual as Cl ₂	ppm	(4)	(4)		1.99			ND-3.4		20
Total Trihalomethanes	ppb	80	NA		52.3			11.7-71.9		9
Total Haloacetic Acids	ppb	60	NA		23.4			8.9-35		9
MICROBIOLOGICAL										
Total Coliform Bacteria	200c/month	5.0%	(0)		Average			Range		
					0.11			0.0-0.71		1

SECONDARY DRINKING WATER STANDARDS (AESTHETIC STANDARDS)

Parameter	Unit	MCL	Average	Range	Average	Range	Average	Range	Sources *
Aluminum	ppb	200	ND	ND	ND	ND-61	ND	ND	3, 4
Chloride	ppm	600	46	35-72	74	52-101	9.5	3-16	11, 12, 14
Color	CU	15	1.29	0-27	ND	ND	ND	ND-8	13
Iron	ppb	300	ND	ND	ND	ND	ND	ND	12, 15
Manganese	ppb	50	0.65	ND-3.9	ND	ND	ND	ND	12
Odor – Threshold	T.O.N	3	ND	ND	1	1-1	ND	ND	13
Specific Conductance	µS/cm	1600	890	610-700	548	447-669	179	33-316	14, 16
Sulfate	ppm	500	34	27-36	64.5	58.0-70.4	19.2	1.6-35.7	11, 12, 15
Total Dissolved Solids	ppm	1000	405	360-450	305	240-359	99	27-174	11, 12

UNREGULATED PARAMETERS

Parameter	Unit	MCL	Average	Range	Average	Range	Average	Range
Boron	ppb	1000	183	110-230	173	130-221	NA	NA
Chromium VI (Hexavalent Chromium)	ppb	NA	1.4	ND-3.1	ND	ND	NA	NA
Vanadium	ppb	50	6.7	4.3-22	ND	ND-3	NA	NA

OTHER WATER QUALITY PARAMETERS

Parameter	Unit	MCL	Average	Range	Average	Range	Average	Range
Hardness (as CaCO ₃)	ppm	NS	299	270-320	113	68-137	53	4-104
pH	units	NS	8.2	7.9-9.5	7.6	7.6-7.9	6.8	6.2-9.7
Sodium	ppm	NS	28	12-40	64	50-84	13	3-22
Temperature	°C	NS	17	0-22	19	12-22	NA	NA

HOW TO READ THIS CHART

DEFINITIONS OF KEY TERMS

Maximum Contaminant Level (MCL) The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHG (or MCLG) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water. MCLs are established by USEPA and CDPH.

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 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.

Notification Level (NL) Notification levels are health-based advisory levels established by CDPH for chemicals in drinking water that lack MCLs. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.

Primary Drinking Water Standard (PDWS) MCLs and MRDLs for contaminants that affect health, and water treatment requirements.

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 Office of Environmental Health Hazard Assessment.

Regulatory Action Level (AL) 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.

Total Organic Carbon (TOC) TOC has no health effects. However, TOC provides a measure for the formation of disinfection byproducts including trihalomethanes and haloacetic acids. Drinking water containing disinfection byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer.

Turbidity Turbidity has no health effects. It is a measure of the clarity of the water and is monitored because it is a good indicator of water quality and the effectiveness of the filtration system. The MCL for turbidity is based on the TT. For unfiltered water, the MCL is 5.0 NTU. For filtered water, the MCL is 0.3 NTU 95% of the time.

Variance and Exemptions CDPH permission to exceed an MCL or not comply with a treatment technique under certain conditions.

Water State permission to decrease the monitoring frequency for a particular contaminant.

ABBREVIATIONS

°C	Degrees Celsius
CDPH	California Department of Public Health
CU	Color unit
DLR	Detection limit for reporting purposes
Max	Maximum
NA	Not available
ND	Not detected
NS	No standard
NTU	Nephelometric turbidity unit
ppb	parts per billion (micrograms per liter)
ppm	parts per million (milligrams per liter)
µS/cm	microSiemens per centimeter
% pos	% positive
SCWWD	Santa Clara Valley Water District
SFPUC	San Francisco Public Utilities Commission
TOC	Total organic carbon
T.O.N.	Threshold odor number
USEPA	United States Environmental Protection Agency

Notes
* This is the single-highest sample result in 2010.
* These values represent the range of monthly averages.
* This value represents the highest running annual average.

* TYPICAL SOURCES IN DRINKING WATER

- Naturally present in the environment
- Soil runoff
- Erosion of natural deposits
- Residue from some surface water treatment processes
- Water additive that promotes strong leach
- Discharge from fertilizer and aluminum factories
- Runoff and leaching from fertilizer use
- Leaching from septic tanks and seepage
- By-product of drinking water disinfection
- Natural natural and man-made sources
- Runoff from natural deposits
- Leaching from natural deposits
- Naturally-occurring organic materials
- Seawater influence
- Industrial wastes
- Substances that form ions when in water
- Internal corrosion of household plumbing systems
- Leaching from wood preservatives
- Discharges from industrial manufacturers
- Drinking water disinfectant added for treatment

Important information about your water quality

Fluoride

The SFPUC completed construction on the new, system-wide fluoridation facility in 2005. Beginning November 2005, all water from the SFPUC is fluoridated. However, the City's other wholesale water provider (SCWWD) has no plans to fluoridate its water, and the City does not fluoridate well water. As a result, some areas of Sunnyvale receive fluoridated water, other areas receive non-fluoridated water, and some areas receive a mixture of fluoridated and non-fluoridated water. A map showing the different areas is included below. If you would like more information please contact the City at (408) 730-7510.

Lead

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. The City 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 or at www.epa.gov/safewater/lead.

Nitrate

Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. 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 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 are pregnant, you should ask for advice from your health care provider.

Disinfection

Sunnyvale residents should know that the Sunnyvale system distributes water treated with chlorine and well water that is treated but not chlorinated. Chloramine, a combination of chlorine and ammonia, is more stable than chlorine and offers a number of health benefits. Chloramine lasts longer in water to provide more protection against pathogens such as bacteria and viruses, and produces lower levels of disinfection byproducts such as trihalomethanes. State and federal regulations effective January 2002 lowered the allowable level of exposure to disinfection byproducts. The water provided by SFPUC and SCWWD is disinfected with chloramines, which can affect dialysis treatment. The City maintains contact with dialysis treatment centers in the service area. Residents on home dialysis should consult their physicians to discuss the impact on their treatment. The Transpaclic Network for Dialysis, at (415) 331-1545, can provide more information about chloramines and dialysis. Fish and aquarium owners should check with their local pet stores to make sure they are using the correct equipment for chlorine removal of any concentration.

Hardness

Hardness consists mainly of calcium and magnesium salts. Although it does not pose a health risk, it may be considered undesirable for other reasons. Some benefits of water softening are reductions in soap usage, longer life for water heaters, and a decrease in encrustation of pipes. Some disadvantages of water softening are an increase in sodium intake (depending on type of water softener used), an increase in maintenance/leaking requirements, and potential adverse effects on self-sensitive plants and landscaping. To convert hardness from ppm to grains-per-gallon, divide by 17.1. A hardness scale is provided below for your reference.

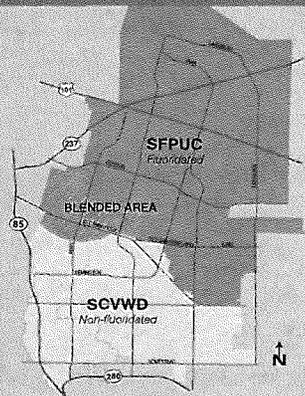
Classification	Grains-per-Gallon	mg/L or ppm
Soft	Less than 7.0	Less than 125
Slightly hard	7.1-8.5	125-150
Moderately hard	8.6-10.0	150-175
Hard	10.1-12.5	175-210
Very hard	Over 12.5	Over 210

SOURCE MAP

The adjacent map indicates which areas of the City are supplied by SFPUC, SCWWD, or a mixture of the two. The colored regions correspond to the colored columns in the table above.

Groundwater wells, which are not shown on this map, are located throughout the City. Local groundwater is blended with surface water supplies from SFPUC and SCWWD.

SFPUC water is fluoridated but SCWWD and groundwater supplies are not.



IMPORTANT CONTACT INFORMATION

CITY CONTACTS

City of Sunnyvale

456 West Olive Avenue
Sunnyvale, CA 94086
Tel: (408) 730-7415
TDD: (408) 730-7501
Fax: (408) 730-7286
sunnyvale.ca.gov

Hours of Operation:
8 a.m. to 5 p.m., M-F

Environmental Services Department (Leaks, Breaks, Water Quality Questions)
(408) 730-7400

Utility Division (Billing)
(408) 730-7400, Residential
(408) 730-7681, Commercial

Backflow and Cross-Connection Control Program
(408) 730-7574

SCVWD Water Conservation Hotline
(408) 265-2607, ext. 2554

SCVWD Pollution Hotline
(888) 510-5151 (24 Hours)

WEB RESOURCES

California Department of Public Health
cdph.ca.gov

US Environmental Protection Agency
water.epa.gov/drink

Department of Water Resources
dwr.water.ca.gov

Emergency Preparedness
ready.gov

Bay Area Water Supply and Conservation Agency
bawasca.org

American Water Works Association
awwa.org
DrinkTap.org

TO GET INVOLVED

To provide input on decisions that affect drinking water quality, you are welcome to speak on any issue, specifically coming before the City Council at a regularly scheduled council meeting. You can also speak on any topic you wish to bring to the Council's attention during the "Public Comments" portion of the meeting agenda. Alternatively, you can send a letter in advance of a meeting.

City Council Meetings
City Hall Council Chambers
456 West Olive Avenue
Sunnyvale, CA 94086
Tuesdays, 7 p.m.

A list of City Council meetings, agenda items, and study issues can be obtained by calling the City Clerk's office at (408) 730-7483 or by visiting our website at sunnyvale.ca.gov.



HEALTH & EDUCATION INFORMATION

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 Safe Drinking Water Hotline.

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 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.

USEPA Safe Drinking Water Hotline ▶
(800) 426-4791

EPA Statement on Chromium-6 (Hexavalent Chromium) in Drinking Water

The presence of chromium-6 in drinking water and its potential health effects has been an issue of growing concern across the nation. There is currently very little evidence to suggest that chromium-6 present in low concentrations in drinking water can cause cancer or other adverse health effects in humans. To date, only a few animal studies have linked chromium-6 to cancer, and only when animals were given doses that were hundreds of times greater than the safety standards for human exposure.

In California, chromium-6 is regulated under the 50-parts per billion (ppb) MCL for total chromium. The Office of Environmental Health Hazard Assessment (OEHHA) within the California EPA is currently in the process of finalizing a Public Health Goal (PHG) Level of 0.02 ppb. The PHG is a level of drinking water contaminant at which adverse health effects are not expected to occur from a lifetime of exposure.

The EPA has issued a statement on chromium-6, as well as other information, which can be found at water.epa.gov/drink/info/chromium/index.cfm.



CITY OF SUNNYVALE 2011 WATER QUALITY REPORT

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.

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

Chi báo này rất quan trọng. Xin nhờ người dịch cho quý vị.

此份有關飲水報告，內有重要資料和訊息，請轉譯他人為您翻譯及解釋清楚。

この情報は重要です。翻訳を依頼してください。

이 소개장에는 식수수질 보고자의 매우 중요한 당신의 수돗물에 관한 중요한 정보가 포함되어 있습니다. 이 정보를 이해하실 수 있는 문해자 번역을 부탁드립니다.

यह सूचना महत्वपूर्ण है।
कृपया इसके किमी से सक्का अनुवाद कराएँ।

Last year your tap water met all state and federal drinking water health standards

The City of Sunnyvale aims to provide superior service while delivering a reliable, high-quality drinking water supply to our customers. Last year, your tap water met all state and federal drinking water health standards. The City vigilantly safeguards its water supplies, and once again we are proud to report that our system has met or exceeded water quality standards.

WHAT'S INSIDE ▶

Important information about your water

Tips for saving water

Ways to contact the City

Protecting your water supply

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.

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.

Protection begins in the watersheds. Protecting the water supply is important to ensure that water is safe from contamination and aesthetically pleasing for use. Contamination requires treatment, which increases the cost to deliver water to your tap. Here are ways that you can help protect our watershed:

- Eliminate excess use of lawn and garden fertilizers and pesticides
- Pick up after your pets
- Take used motor oil and other recyclables to the SMaRT Station ®
- Dispose of pharmaceuticals at any Sunnyvale fire station. Medications should not be flushed down drains or put in the garbage.
- Dispose of cleaners, chemicals and paints at a Household Hazardous Waste Drop-off Event
- Volunteer in your community. The Creek Connections Action Group works to protect the County's waterways. Visit creekconnections.org.
- Participate in public meetings and forums. It allows decision-makers to hear your perspective and you to be involved in protecting your water supply.

More information about disposal and recycling ▶
Call (408) 730-7262.

SMaRT Station ®
301 Carl Road, Sunnyvale, CA 94089
Open daily, 8 a.m. to 5 p.m., Tel: (408) 752-8530

Household Hazardous Waste Drop-off
164 Carl Road, Sunnyvale, CA 94089
Every 3rd Saturday, 8 a.m. to 1 p.m.



Where your water comes from

The City of Sunnyvale has three different sources of drinking water supply: local groundwater, treated surface water from the Santa Clara Valley Water District (SCVWD), and treated surface water from the San Francisco Public Utilities Commission (SFPUC). There are pockets of Sunnyvale customers who receive water from the California Water Service Company (Cal Water); questions regarding the source and delivery of water provided by Cal Water can be directed to its local office at (650) 917-0152.

Local Groundwater

The City owns, operates and maintains eight deep wells. The wells are used to help supplement the imported water supplies during peak demands in the summer months and emergency situations. The City is always working to increase flexibility in local groundwater supplies, enhance water quality, reduce operating costs, and increase reliability. Recent groundwater improvements include water well connections, electrical upgrades and installation of an emergency generator. Groundwater pumped from these wells is taxed by SCVWD.

The City completed a Drinking Water Source Assessment Program (DWSAP) in January 2003 for these groundwater sources. The City's groundwater sources are considered most vulnerable to

contamination by leaky underground fuel tanks, dry cleaning chemicals, sewer collection systems, old septic systems, and machine shops.

SFPUC Supply

The City purchases a blend of Hetch Hetchy water and treated water from SFPUC to serve the northern part of the City. Filtered water turbidity from SFPUC met the standard of 0.3 NTU or less, 95% of the time.

The Hetch Hetchy Watershed provides most of the SFPUC water supply, supplemented by the Alameda watershed. The major water source originates from spring snowmelt flowing down the Tuolumne River and is stored in the Hetch Hetchy Reservoir. Since this water source meets all federal and state standards for watershed protection, disinfection treatment practices, bacteriological quality monitoring,

and operations, the State has granted this water source a filtration exemption.

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, the water from these reservoirs is treated. Fluoridation, chloramination, and corrosion control treatment are provided for the combined Hetch Hetchy and treated water. Fluoride is added to the naturally occurring level to help protect against tooth decay in consumers. The fluoride levels in the treated water are maintained within a range of 0.8–1.5 mg/L as required by CDPH.

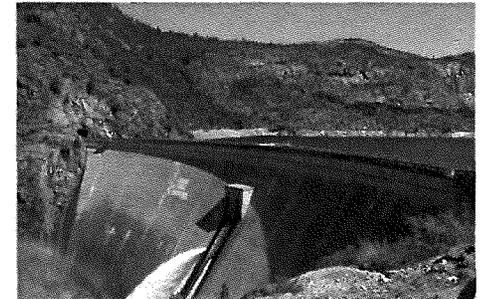
The SFPUC aggressively protects the natural water resources entrusted to its care. Its annual Hetch Hetchy Watershed survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities by the SFPUC and its

partner agencies, including the National Park Service, to reduce or eliminate contamination sources. The SFPUC also conducts sanitary surveys of the local Alameda and Peninsula watersheds every five years. These surveys identified wildlife and human activity as potential contamination sources. The reports are available for review at the CDPH San Francisco District office.

More information on SFPUC ▶
Visit sfwater.org, or call CDPH (510) 620-3474

SCVWD Supply

The City purchases treated surface water from SCVWD and delivers it to the southern portion of the City. SCVWD imports more than half of its supply from the South Bay Aqueduct, Lake Del Valle, and San Luis Reservoir, which all draw water from the Sacramento-San Joaquin Delta Watershed. SCVWD local surface water sources include Anderson and Calero Reservoirs.



SCVWD source waters are vulnerable to potential contamination from a variety of land use practices such as agricultural and urban runoff, recreational activities, livestock grazing, and residential and industrial development. Imported sources are vulnerable to wastewater treatment plant discharges, seawater intrusion, and wildfires in watershed areas. Local sources are also vulnerable

to contamination from commercial stables and historic mining practices. No contaminant associated with any of these activities has been detected in SCVWD treated water. Water treatment plants provide multiple barriers for physical removal and disinfection of contaminants.

More information on SCVWD ▶
Visit water.org

WATER CONSERVATION TIPS



SCVWD Water Conservation ▶
Hotline: (408) 265-2607 ext. 2554

The City works cooperatively with our water wholesalers to provide residents with advice, assistance, and access to programs. The following water-saving tips are simple ways to conserve water both indoors and out, and are provided jointly by the City and SCVWD.

Steps to Save Water Indoors

- Turn off the faucet while you brush your teeth.
- Take shorter showers. You will save 2.5 gallons of water each minute.
- Install water-efficient faucet aerators and showerheads in your kitchen and bathrooms.
- Check toilets and faucets for leaks. Running toilets can waste two gallons a minute while leaky faucets can waste thousands of gallons.
- Do not use the toilet as a wastebasket. Only toilet paper goes in the toilet.
- Only wash full loads of laundry and dishes.

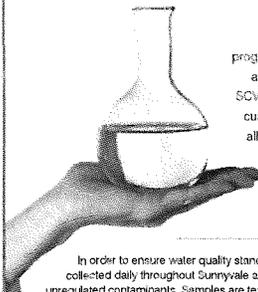
- Rinse fruits and vegetables in a pan instead of using running water.
- Keep a pitcher of drinking water in the refrigerator. Running tap water to cool it off for drinking is wasteful.
- Replace your old front-loading clothes washer with a high-efficiency model. For information about rebates call the Water Conservation Hotline.
- If your toilet uses more than 3.5 gallons per flush, replace it with a high-efficiency toilet. New models use 70 percent less water. For information about rebates call the Water Conservation Hotline.

Steps to Save Water Outdoors

- Plant native or drought-tolerant plants that require less watering. Native plants promote healthier local ecosystems.
- Use a broom to sweep off pavement. Using a hose to wash sidewalks, driveways and patios wastes money and water.
- Apply organic mulch around plants to reduce moisture loss, keep weed-growth down, and promote a healthier soil environment.
- Deep soak your lawn to ensure moisture reaches the roots. Light sprinkle watering evaporates quickly and encourages shallow root systems that need more frequent watering.

- Check for leaks in pipes, sprinkler heads, and valves.
- Water during cool parts of the day. Early morning is the best time since it helps prevent growth of fungus.
- Water your lawn only when it needs it. You can test it by stepping on it and see if it springs back up. If it does, it does not need watering.
- Avoid watering on windy days.
- Use drip irrigation in larger gardens with weather based irrigation control. For information about rebates call the Water Conservation Hotline.

2011 WATER QUALITY TEST RESULTS



The City of Sunnyvale has instituted a comprehensive water quality monitoring program that encompasses City-owned wells and all water purchased from SFPUC and SCVWD. This program ensures that all of our customers receive water that complies with all regulatory criteria and that no maximum contaminant levels (MCLs) or maximum contaminant level goals (MCLGs) for regulated chemicals, bacteria, or pollutants are exceeded.

In order to ensure water quality standards are met, drinking water samples are collected daily throughout Sunnyvale and analyzed for a variety of regulated and unregulated contaminants. Samples are tested by the City's certified laboratory and an independent certified laboratory using the latest testing procedures and equipment. We collect more samples than required by the CDPH to provide you with the highest quality of water at all times. In addition, the City's wholesalers, SCVWD and SFPUC, conduct their own testing before delivering water to the City. Such measures help us to continue meeting established water quality standards.

The table to the right shows the results of the distribution system and source water analyses conducted by the City, SCVWD and SFPUC. Water quality data is grouped by water source. Last year we conducted more than 20,000 tests for more than 40 parameters. We detected only 12 of these parameters, and none were found at levels higher than CDPH allows.

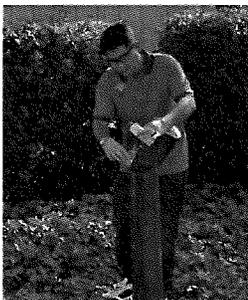
Only the parameters detected are shown. Other constituents were analyzed but are not listed because they were not detected. Additionally, unregulated parameters are shown to provide you with supplemental information.

Some data—although representative—was collected prior to 2011, as the CDPH requires monitoring for some constituents less than once per year since the concentrations of these constituents do not vary frequently or significantly.

More information ▶

For a complete list of all the chemicals analyzed, or to ask questions about this report or the City's water quality monitoring program, please contact:

Wol Conzel
City of Sunnyvale
Water Operations Manager
Tel: (408) 730-7510
TDD: (408) 730-7501
wconzel@cityofsunnyvale.org



PRIMARY DRINKING WATER STANDARDS (PUBLIC HEALTH RELATED STANDARDS)

Parameter	Unit	MCL (MCLs or MRDLs)	PHG (MCLGs or MPELs)	Groundwater/Well		SCVWD		SFPUC		Typical Sources
				Average or (Max)	Range	Average or (Max)	Range	Average or (Max)	Range	
INORGANIC CHEMICALS (SOURCE WATER SAMPLING)										
Aluminum	ppm	1000	0.6	ND	ND	ND	ND-0.068	<0.05	ND-0.053	3, 4
Barium	ppm	1	2	0.11	0.03-0.12	ND	ND	ND	ND	3
Fluoride	ppm	2	1	0.15	0.13-0.19	ND	ND-0.1	0.3	ND-0.8	3, 5, 6
Turbidity	NTU	TT	NA	0.11	0.05-0.40	0.07	0.07-0.08	[2.1]	0.2-0.7	2
Nitrate as NO ₃	ppm	45	45	15.6	9.3-27.0	ND	ND-2	NA	NA	3, 7, 8
RADIOLOGICAL										
Radium 226	pCi/L	NS	0.05	ND	ND	ND	ND	<1	ND-1.2	3
DISINFECTION BYPRODUCTS AND PRECURSORS (SOURCE WATER SAMPLING)										
Total Trihalomethanes	ppb	80	NA			[53]	20-67	[65]	10-84	9
Total Haloacetic Acids	ppb	60	NA			[22]	7-50	[33]	4-59	9
TOC (precursor control)	ppm	TT	NA			2.05	1.65-2.80	2.7	2.5-3.0	10
LEAD AND COPPER (SUNNYVALE 2007 AT-THE-TAP SAMPLING)										
				90th Percentile			# of Samples Above AL			
Lead	ppb	(15)	0.2	<1			0 out of 51			3, 17, 19
Copper	ppm	(1.3)	0.3	0.163			0 out of 51			3, 17, 18
DISINFECTION RESIDUALS AND BYPRODUCTS (DISTRIBUTION SYSTEM SAMPLING)										
Disinfectant Residual as Cl ₂	ppm	(4)	(4)	1.94			0.05-3.50			20
Total Trihalomethanes	ppb	80	NA	47.5			20.8-50.8			9
Total Haloacetic Acids	ppb	60	NA	31.7			4.5-47.0			9
MICROBIOLOGICAL										
Total Coliform Bacteria	1/100 mL	5,045	(0)	0.16			0.0-0.11			1

SECONDARY DRINKING WATER STANDARDS (AESTHETIC STANDARDS)

Parameter	Unit	MCL	Average	Range	Average	Range	Average	Range	Source
Aluminum	ppb	200	ND	ND	ND	ND-68	<50	ND-53	3, 4
Chloride	ppm	500	46	35-72	38	14-54	11	3-20	11, 12, 14
Color	Units	15	0.99	0-5	<2.5	<2.5-2.5	<5	<5-9	13
Iron	ppb	300	ND	ND	ND	ND	NA	NA	12, 15
Manganese	ppb	50	0.65	ND-3.9	ND	ND	NA	NA	12
Odor — Threshold	TCN	3	ND	ND	1	1-1	NA	NA	13
Specific Conductance	µS/cm	1600	690	610-790	372	346-404	181	39-289	14, 16
Sulfate	ppm	500	34	27-39	49.5	41.8-59.1	16	1.5-36	11, 12, 15
Total Dissolved Solids	ppm	1000	406	380-450	210	180-228	152	85-194	11, 12

UNREGULATED PARAMETERS

Parameter	Unit	MCL	Average	Range	Average	Range	Average	Range	Source
Boron	ppb	1000	160	110-230	ND	ND-132	NA	NA	
Chromium VI (Hexavalent Chromium)	ppb	NA	1.4	ND-3.1	ND	ND	NA	NA	
Vanadium	ppb	50	6.7	4.3-22	ND	ND	NA	NA	

OTHER WATER QUALITY PARAMETERS

Parameter	Unit	MCL	Average	Range	Average	Range	Average	Range	Source
Hardness (as CaCO ₃)	ppm	NS	284	270-320	88	69-117	53	10-98	
pH	units	NS	8.2	7.3-9.5	7.7	7.7-7.8	8.6	6.7-9.7	
Sodium	ppm	NS	28	22-40	39	29-45	13.5	3-20	
Temperature	°C	NS	18	15-22.2	17	13-22	NA	NA	

Important information about your water quality

Fluoride

The SFPUC completed construction on the new, system-wide fluoridation facility in 2005. Beginning November 2005, all water from the SFPUC is fluoridated. However, the City's other wholesale water provider (SCVWD) has no plans to fluoridate its water, and the City does not fluoridate well water. As a result, some areas of Sunnyvale receive fluoridated water, other areas receive non-fluoridated water, and some areas receive a mixture of fluoridated and non-fluoridated water. A map showing the different areas is included below. If you would like more information please contact the City at (408) 730-7510.

Lead

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. The City 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 two 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 or at www.epa.gov/lead.

Nitrate

Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. Nitrate in drinking water at levels above 45 mg/L is a health risk for infants younger 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 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 for advice from your health care provider.

Disinfection

Sunnyvale residents should know that the Sunnyvale system distributes water treated with chloramine and well water that is tested but not treated. Chloramine, a combination of chlorine and ammonia, is more stable than chlorine and offers a number of health benefits. Chloramine lasts longer in water to provide more protection against pathogens such as bacteria and viruses, and produces lower levels of disinfection byproducts such as trihalomethanes. State and federal regulations effective January 2002 lowered the allowable level of exposure to disinfection byproducts. The water provided by SFPUC and SCVWD is disinfected with chloramine, which can affect dialysis treatment. The City maintains contact with dialysis treatment centers in the service area. Residents on home dialysis should contact their physicians to discuss the impact on their treatment. The Western Pacific Renal Network, at (415) 897-2400, can provide more information about chloramines and dialysis. Fish and aquarium owners should check with their local pet stores to make sure they are using the correct equipment for chloramine removal of any concentration.

Hardness

Hardness consists mainly of calcium and magnesium salts. Although it does not pose a health risk, it may be considered undesirable for other reasons. Some benefits of water softening are reductions in soap usage, longer life for water heaters and a decrease in encrustation of pipes. Some disadvantages of water softening are an increase in sodium intake (depending on type of water softener used), an increase in maintenance/servicing requirements and potential adverse effects on salt-sensitive plants and landscaping. To convert hardness from ppm to grains per gallon, divide by 17.1. A hardness scale is provided below for your reference.

Classification	Grains per Gallon	mg/L (ppm)
Soft	Less than 3.5	Less than 17.5
Slightly hard	3.5-7.0	17.5-35
Modestly hard	7.0-10.5	35-50
Hard	10.5-14.0	50-75
Very hard	Over 14.0	Over 75

HOW TO READ THIS CHART

DEFINITIONS OF KEY TERMS

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. MCLs are established by USEPA and CDPH.

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 Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that adding 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.

Notification Level (NL): Notification levels are health-based advisory levels established by CDPH for chemicals in drinking water that lack MCLs. When chemicals are not monitored, notification levels greater than their notification levels, certain requirements and recommendations apply.

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

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 Office of Environmental Health Hazard Assessment.

Regulatory Action Level (AL): 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.

Total Organic Carbon (TOC): TOC has no health effects. However, TOC provides a medium for the formation of disinfection byproducts including trihalomethanes and haloacetic acids. Drinking water containing disinfection byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer.

Turbidity: Turbidity has no health effects. It is a measure of the dirt, of the water and is monitored because it is a good indicator of water quality and the effectiveness of a filtration system. The MCL for turbidity is based on the TT. For unfiltered water, the MCL is 5.0 NTU. For filtered water, the MCL is 3.0 NTU 95% of the time.

Waiver: State permission to decrease the monitoring frequency for a particular contaminant.

ABBREVIATIONS

°C	Degree Celsius
CDPH	California Department of Public Health
CU	Cubic unit
DLR	Detection limit for reporting purposes
Max	Maximum
NA	Not available
ND	Not detected
NS	No standard
NTU	Nephelometric turbidity unit
ppb	parts per billion (micrograms per liter)
ppm	parts per million (milligrams per liter)
µS/cm	microSiemens per centimeter
% pos	% positive
SCVWD	Santa Clara Valley Water District
SFPUC	San Francisco Public Utilities Commission
TOC	Total organic carbon
TCN	Threshold color number
USEPA	United States Environmental Protection Agency

Notes

- This is the single-highest sample result in 2011.
- These values represent the range of monthly averages.
- This value represents the highest running annual average.

* TYPICAL SOURCES IN DRINKING WATER

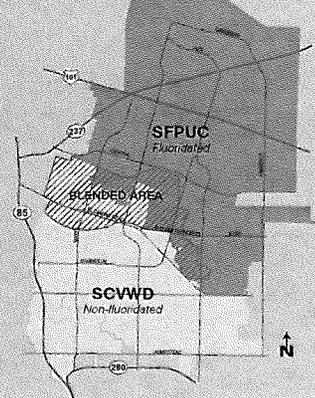
- Naturally present in the environment
- Soil runoff
- Erosion of natural deposits
- Residue from some surface water treatment processes
- Water additive that promotes strong teeth
- Discharge from fertilizer and aluminum factories
- Runoff and leaching from fertilizer use
- Leaching from septic tanks and sewage
- By-product of drinking water disinfection
- Various natural and man-made sources
- Runoff from natural deposits
- Leaching from natural deposits
- Naturally-occurring organic materials
- Seawater influence
- Industrial wastes
- Substances that form ions when in water
- Internal corrosion of household plumbing systems
- Leaching from wood preservatives
- Discharges from industrial manufacturers
- Drinking water disinfectant added for treatment

SOURCE MAP

The adjacent map indicates which areas of the City are supplied by SFPUC, SCVWD or a mixture of the two. The colored regions correspond to the colored columns in the table above.

Groundwater wells, which are not shown on this map, are located throughout the City. Local groundwater is blended with surface water supplies from SFPUC and SCVWD.

SFPUC water is fluoridated but SCVWD and groundwater supplies are not.



IMPORTANT CONTACT INFORMATION

CITY CONTACTS

City of Sunnyvale
456 West Olive Ave.
Sunnyvale, CA 94086
Tel: (408) 730-7415
TDD: (408) 730-7501
Fax: (408) 730-7286
sunnyvale.ca.gov

Hours of Operation:
8 a.m. to 5 p.m., M-F

Environmental Services Department (Leaks, Breaks, Water Quality Questions)
(408) 730-7400

Utility Division (Billing)
(408) 730-7400, Residential
(408) 730-7681, Commercial

Backflow and Cross-Connection Control Program
(408) 730-7574

SCVWD Water Conservation Hotline
(408) 630-2554

SCVWD Pollution Hotline
(888) 510-5151 (24 Hours)

WEB RESOURCES

California Department of Public Health
cdph.ca.gov

US Environmental Protection Agency
water.epa.gov/drink

Department of Water Resources
www.dwr.water.ca.gov

Emergency Preparedness
ready.gov

Bay Area Water Supply and Conservation Agency
bawsca.org

American Water Works Association
awwa.org
DrinkTap.org

TO GET INVOLVED

To provide input on decisions that affect drinking water quality, you are welcome to speak on any issue specifically coming before the City Council at a regularly scheduled council meeting. You can also speak on any topic you wish to bring to the Council's attention during the "Public Comments" portion of the meeting agenda. Alternatively, you can send a letter in advance of a meeting.

City Council Meetings
City Hall Council Chambers
456 West Olive Ave.
Sunnyvale, CA 94086
Tuesdays, 7 p.m.

A list of City Council meetings, agenda items, and study issues can be obtained by calling the City Clerk's office or by visiting our website.
(408) 730-7483
sunnyvale.ca.gov



HEALTH & EDUCATION INFORMATION

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 Safe Drinking Water Hotline.

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 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.

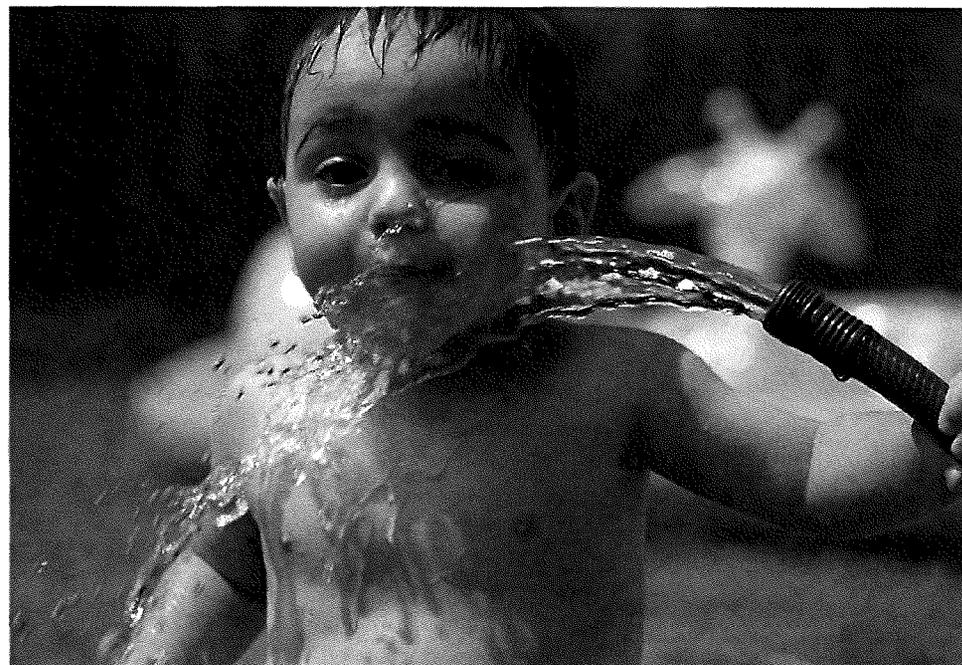
USEPA Safe Drinking Water Hotline ▶
(800) 426-4791

EPA Statement on Chromium-6 (Hexavalent Chromium) in Drinking Water

The presence of chromium-6 in drinking water and its potential health effects has been an issue of growing concern across the nation. There is currently very little evidence to suggest that chromium-6 present in low concentrations in drinking water can cause cancer or other adverse health effects in humans. To date, only a few animal studies have linked chromium-6 to cancer, and only when animals were given doses that were hundreds of times greater than the safety standards for human exposure.

In California, chromium-6 is regulated under the 50-parts per billion (ppb) MCL for total chromium. The Office of Environmental Health Hazard Assessment (OEHHA) within the California EPA has recently set the Public Health Goal (PHG) Level of 0.02 ppb. The PHG is a level of drinking water contaminant at which adverse health effects are not expected to occur from a lifetime of exposure.

The EPA has issued a statement on chromium-6, as well as other information, which can be found at water.epa.gov/drink/info/chromium/index.cfm



CITY OF SUNNYVALE 2012 WATER QUALITY REPORT

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.

Mahalaqang impormasyong ito. Mangyaring ipasalin ito. Chini chet nay chhet quan trong. Xin nho người dịch cho quý vị. 此份有關飲水的供水報告。內有重要資料和訊息。請於他人為您翻譯及解釋清楚。

この情報は重要です。翻訳を依頼してください。

이 소책자는 상수원 보호의 최우선 요건을 달성하기 수돗물에 관한 중요한 정보가 적혀져 있습니다. 이 정보를 이해하실수 있는 분에게 번역을 부탁하십시오.

मह सूचना महत्वपूर्ण है।
कृपया इसके विषय में शका अनुवाद कायम है।

Last year your tap water met all state and federal drinking water health standards

The City of Sunnyvale aims to provide superior service while delivering a reliable, high-quality drinking water supply to our customers. Last year, your tap water met all state and federal drinking water health standards. The City vigilantly safeguards its water supplies, and once again, we are proud to report that our system has met or exceeded water quality standards.

WHAT'S INSIDE ▶

Important information about your water
Tips for saving water
Ways to contact the City

Protecting your water supply

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.

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.

Protection begins in the watersheds. Protecting the water supply is important to ensure that water is safe from contamination and aesthetically pleasing for use. Contamination requires treatment, which increases the cost to deliver water to your tap. Here are ways that you can help protect our watershed:

- Eliminate excess use of lawn and garden fertilizers and pesticides
- Pick up after your pets
- Take used motor oil and other recyclables to the SMaRT Station @
- Dispose of pharmaceuticals at any Sunnyvale fire station. Medications should not be flushed down drains or put in the garbage.
- Dispose of cleaners, chemicals and paints at a Household Hazardous Waste Drop-off Event
- Volunteer in your community. The Creek Connections Action Group works to protect the County's waterways. Visit cleanactees.org.
- Participate in public meetings and forums. It allows decision-makers to hear your perspective and you to be involved in protecting your water supply.

More information about disposal and recycling ▶
Call (408) 730-7262

SMaRT Station @
301 Carl Road, Sunnyvale, CA 94089
Open daily, 8 a.m. to 5 p.m., Tel: (408) 752-8530

Household Hazardous Waste Drop-off
164 Carl Road, Sunnyvale, CA 94089
Every 3rd Saturday, 8 a.m. to 1 p.m.



Where your water comes from

The City of Sunnyvale has three different sources of drinking water supply: local groundwater, treated surface water from the Santa Clara Valley Water District (SCVWD), and treated surface water from the San Francisco Public Utilities Commission (SFPUC). There are also pockets of Sunnyvale customers who receive water from the California Water Service Company (Cal Water); questions regarding the source and delivery of water provided by Cal Water can be directed to its local office at (650) 917-0152.

Local Groundwater

The City owns, operates and maintains eight deep wells. The wells are used to help supplement the imported water supplies during peak demands in the summer months and emergency situations. The City is always working to increase flexibility in local groundwater supplies, enhance water quality, reduce operating costs, and increase reliability. Recent groundwater improvements include water well connections, electrical upgrades and installation of an emergency generator. Groundwater pumped from these wells is taxed by SCVWD.

The City completed a Drinking Water Source Assessment Program (DWSAP) in January 2003 for these groundwater sources. The City's groundwater sources are considered most vulnerable to

contamination by leaky underground fuel tanks, dry cleaning chemicals, sewer collection systems, old septic systems, and machine shops.

SFPUC Supply

The City purchases a blend of Hetch Hetchy water and treated water from SFPUC to serve the northern part of the city. Filtered water turbidity from SFPUC met the standard of 0.3 NTU or less, 95% of the time.

The Hetch Hetchy Watershed provides most of the SFPUC water supply, supplemented by the Alameda watershed. The major water source originates from spring snowmelt flowing down the Tuolumne River and is stored in the Hetch Hetchy Reservoir. Since this water source meets all federal and state standards for watershed protection, disinfection treatment practices, bacteriological quality monitoring,

and operations, the State has granted this water source a filtration exemption.

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, the water from these reservoirs is treated. Fluoridation, chloramination, and corrosion control treatment are provided for the combined Hetch Hetchy and treated water. Fluoride is added to the naturally occurring level to help protect against tooth decay in consumers. The average fluoride levels in the treated water are maintained within a range of 0.8–1.5 mg/L, as required by CDPH.

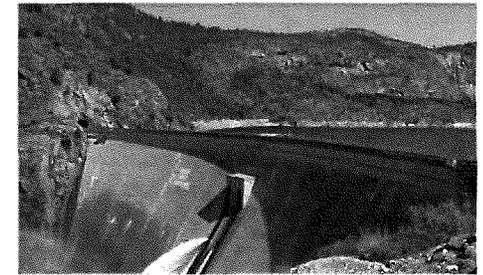
The SFPUC actively protects the water resources entrusted to its care. Its annual update of the Hetch Hetchy Watershed Sanitary Survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities with partner

agencies (such as the National Park Service and US 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 water sources in 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. They are available for review at the CDPH San Francisco District office.

More information on SFPUC ▶
Visit water.org, or call CDPH (510) 620-3474

SCVWD Supply

The City purchases treated surface water from SCVWD and delivers it to the southern portion of the city. SCVWD imports more than half of its supply from the South Bay Aqueduct, Lake Del Valle, and San Luis Reservoir, which all draw



water from the Sacramento-San Joaquin Delta Watershed. SCVWD local surface water sources include Anderson and Calero Reservoirs. SCVWD source waters are vulnerable to potential contamination from a variety of land use practices such as agricultural and urban runoff, recreational activities, livestock grazing, and residential and industrial development. Imported sources are vulnerable to wastewater treatment plant discharges, seawater intrusion,

and wildfires in watershed areas. Local sources are also vulnerable to contamination from commercial stables and historic mining practices. No contaminant associated with any of these activities has been detected in SCVWD treated water. Water treatment plants provide multiple barriers for physical removal and disinfection of contaminants.

More information on SCVWD ▶
Visit valleywater.org

WATER CONSERVATION TIPS



Water Conservation Hotline ▶
SCVWD (408) 630-2534

The City works cooperatively with our water wholesalers to provide residents with advice, assistance, and access to programs. The following water-saving tips are simple ways to conserve water both indoors and out, and are provided jointly by the City and SCVWD.

Steps to Save Water Indoors

- Turn off the faucet while you brush your teeth.
- Take shorter showers. You will save 2.5 gallons of water each minute.
- Install water-efficient faucet aerators and showerheads in your kitchen and bathrooms.
- Check toilets and faucets for leaks. Running toilets can waste two gallons a minute while leaky faucets can waste thousands of gallons.
- Do not use the toilet as a wastebasket. Only toilet paper goes in the toilet.
- Only wash full loads of laundry and dishes.

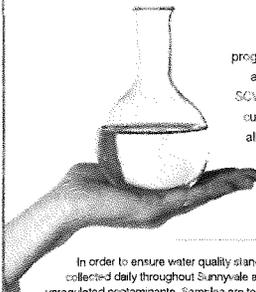
- Rinse fruits and vegetables in a pan instead of using running water.
- Keep a pitcher of drinking water in the refrigerator. Running tap water to cool it off for drinking is wasteful.
- Replace your old front-loading clothes washer with a high-efficiency model. For information about rebates call the Water Conservation Hotline.
- If your toilet uses more than 3.5 gallons per flush, replace it with a high-efficiency toilet. New models use 70 percent less water. For information about rebates, call the Water Conservation Hotline.

Steps to Save Water Outdoors

- Plant native or drought-tolerant plants that require less watering. Native plants promote healthier local ecosystems.
- Use a broom to sweep off pavement. Using a hose to wash sidewalks, driveways and patios wastes money and water.
- Apply organic mulch around plants to reduce moisture loss, keep weed-growth down, and promote a healthier soil.
- Deeply soak your lawn to ensure moisture reaches the roots. Light sprinkle watering evaporates quickly and encourages shallow root systems that need more frequent watering.

- Check for leaks in pipes, sprinkler heads, and valves.
- Water during cool parts of the day. Early morning is the best time because it helps prevent growth of fungus.
- Water your lawn only when it needs it. If the grass springs back up after stepping on it, it does not need watering.
- Avoid watering on windy days.
- Use drip irrigation in larger gardens with weather-based irrigation control. For information about rebates call the Water Conservation Hotline.

2012 WATER QUALITY TEST RESULTS



The City of Sunnyvale has instituted a comprehensive water quality monitoring program that encompasses City-owned wells and all water purchased from SFPUC and SCVWD. This program ensures that all of our customers receive water that complies with all regulatory criteria and that no maximum contaminant levels (MCLs) or maximum contaminant level goals (MCLGs) for regulated chemicals, bacteria, or pollutants are exceeded.

In order to ensure water quality standards are met, drinking water samples are collected daily throughout Sunnyvale and analyzed for a variety of regulated and unregulated contaminants. Samples are tested by the City's certified laboratory and an independent certified laboratory using the latest testing procedures and equipment. We collect more samples than required by the CDPH to provide you with the highest quality of water at all times. In addition, the City's wholesalers, SCVWD and SFPUC, conduct their own testing before delivering water to the City. Such measures help us to continue meeting established water quality standards.

The table to the right shows the results of the distribution system and source water analyses conducted by the City, SCVWD and SFPUC. Water quality data are grouped by water source. Last year we conducted more than 20,000 tests for more than 80 parameters. We detected only 14 of these parameters, and none were found at levels higher than CDPH allows.

Only the parameters detected are shown. Other constituents were analyzed but are not listed because they were not detected. Additionally, unregulated parameters are shown to provide you with supplemental information.

Some data—although representative—were collected prior to 2012, as the CDPH requires monitoring for some constituents less than once per year since the concentrations of these constituents do not vary frequently or significantly.

More information ▶

For more information about this report or the City's water quality monitoring program, please contact:

Kevin Woodworth
City of Sunnyvale
Water Distribution Supervisor
Tel: (408) 730-7510
TDD: (408) 730-7501
kwoodworth@cityofsunnyvale.ca.gov



PARAMETER	Unit	MCL (AL) or (MRDL)	PHG (RAC) (G) or (BRDLG)	Groundwater Well		SCVWD		SFPUC		Typical Sources*
				Average or (Max)	Range	Average or (Max)	Range	Average or (Max)	Range	
SOURCE WATER SAMPLING										
INORGANIC CHEMICALS										
Aluminum	ppm	1	0.6	ND	ND	ND	ND-0.065	ND	ND-0.09	3, 4
Barium	ppm	1	2	0.11	0.10-0.13	ND	ND	ND	ND	3
Fluoride	ppm	2	1	0.21	0.19-0.24	ND	ND	0.3	ND-0.8	3, 5, 6
Turbidity	NTU	TT	NA	0.04	ND-0.19	[0.11]	0.05-0.07	[2.8]	0.2-0.5	2
Nitrate	ppm	45	45	14.3	10-26	ND	ND-3	ND	ND	9, 7, 8
DISINFECTION BYPRODUCTS AND PRECURSORS										
Total Trihalomethanes	ppb	80	NA			[44] ₄	31-55	[45] ₄	18-63	9
Halooxo Acids	ppb	60	NA			[18] ₄	10-23	[36] ₄	8-45	9
TOC (precursor control)	ppm	TT	NA			1.96	1.67-2.34	2.7	2.3-3.7	10
MICROBIOLOGICAL										
Giardia Lamblia	CFU/L	TT	(0)			ND	ND	ND	ND-0.06	1
DISTRIBUTION SYSTEM SAMPLING										
LEAD AND COPPER (SUNNYVALE 2010 ACTHE-TAP SAMPLING)										
				90th Percentile				# of Samples Above AL		
Lead	ppb	(15)	0.3	ND				0 out of 51		3, 17, 19
Copper	ppm	(1.3)	0.3	0.163				0 out of 51		3, 17, 18
DISINFECTION RESIDUALS AND BYPRODUCTS										
Disinfectant Residual as Chlorine	ppm	[4]	[4]	2.04				0.01-3.8		20
Total Trihalomethanes	ppb	80	NA	36.6 ₄				82.6-93.5		9
Halooxo Acids	ppb	60	NA	27.9 ₄				7.4-45		9
MICROBIOLOGICAL										
Total Coliform Bacteria	% pos / month	5.0%	(0)	0.1				0.0-0.6		1
SECONDARY DRINKING WATER STANDARDS (AESTHETIC STANDARDS)										
PARAMETER	Unit	MCL	Average	Range	Average	Range	Average	Range	Source*	
Aluminum	ppb	200	ND	ND	ND	ND-65	ND	ND-90	3, 4	
Chloride	ppm	500	40	34-62	71	51-81	12.3	2-20	11, 12, 14	
Color	CU	15	ND	ND	ND	ND	ND	ND-7	13	
Copper	ppm	1	0.303	ND-0.011	ND	ND	ND	ND	12	
Iron	ppb	300	13	ND-4	ND	ND	ND	ND	12, 15	
Odor — Threshold	TON	3	ND	ND	1	1-1	ND	ND	13	
Specific Conductance	µS/cm	1600	640	490-890	513	422-593	202	31-344	14, 16	
Sulfate	ppm	500	34	23-35	57.0	48.7-63.7	26	0.9-40	11, 12, 15	
Total Dissolved Solids	ppm	1000	566	330-390	299	232-344	108	ND-195	11, 12	
UNREGULATED PARAMETERS										
PARAMETER	Unit	NI	Average	Range	Average	Range	Average	Range	Source*	
Boron	ppb	1000	163	110-230	144	107-171	NA	NA		
Chromium VI (Hexavalent Chromium)	ppb	NS	1.4	ND-3.1	ND	ND	NA	NA		
Vanadium	ppb	50	6.7	4.3-22	ND	ND	NA	NA		
OTHER WATER QUALITY PARAMETERS										
PARAMETER	Unit	NI	Average	Range	Average	Range	Average	Range	Source*	
Hardness (as Calcium Carbonate)	ppm	NS	510	290-330	100	82-118	62	8-114		
pH	Units	NS	8.5	7.15-9.52	7.6	7.4-7.7	8.5	6.7-9.7		
Sodium	ppm	NS	27	22-41	59	49-66	15.7	3-25		
Temperature	°C	NS	17	16.6-26.1	20	14-24	NA	NA		

Important information about your water quality

Fluoride

Currently, all water from the SFPUC is fluoridated while water from the City's other wholesale water provider (SCVWD) is not. The City also does not fluoridate well water. As a result, some areas of Sunnyvale receive fluoridated water, other areas receive non-fluoridated water, and some areas receive a mixture of both. A map showing the areas is found below.

According to the Centers for Disease Control and Prevention, if a child under the age of six months is exclusively consuming infant formula reconstituted with fluoridated water, there may be an increased chance of dental fluorosis. Consult your child's health care provider for more information.

Lead

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. The City 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 two 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 or at water.epa.gov/drink/info/lead

Hardness
Water hardness is determined mainly by the presence of calcium and magnesium salts. Although hard water does not pose a health risk, it may be considered undesirable for other reasons. Some benefits of water softening are reductions in soap usage, longer life for water heaters and a decrease in encrustation of pipes. Some disadvantages of water softening are an increase in sodium intake (depending on type of water softener used), an increase in maintenance and servicing requirements and potential adverse effects on salt-sensitive plants and landscaping. To convert hardness from ppm to grains per gallon, divide by 17.1. A hardness scale is provided below for your reference.

Nitrate

Nitrate in drinking water at levels above 45 mg/L is a health risk: for infants younger 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 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 for advice from your health care provider.

Disinfection

Sunnyvale residents should know that the Sunnyvale system distributes water treated with chlorine and well water that is tested but not treated. Chloramine, a combination of chlorine and ammonia, is more stable than chlorine and offers a number of health benefits. Chloramine lasts longer in water to provide more protection against pathogens such as bacteria and viruses, and produces lower levels of disinfection byproducts such as trihalomethanes. State and federal regulations effective January 2002 lowered the allowable level of exposure to disinfection byproducts. The water provided by SFPUC and SCVWD is disinfected with chloramines, which can affect dialysis treatment. The City maintains contact with dialysis treatment centers in the service area. Residents on home dialysis should contact their physicians to discuss the impact on their treatment. The Western Pacific Renal Network, at (415) 897-2400, can provide more information about chloramines and dialysis. Fish and aquarium owners should check with their local pet stores to make sure they are using the correct equipment for chloramine removal of any concentration.

Hardness

Water hardness is determined mainly by the presence of calcium and magnesium salts. Although hard water does not pose a health risk, it may be considered undesirable for other reasons. Some benefits of water softening are reductions in soap usage, longer life for water heaters and a decrease in encrustation of pipes. Some disadvantages of water softening are an increase in sodium intake (depending on type of water softener used), an increase in maintenance and servicing requirements and potential adverse effects on salt-sensitive plants and landscaping. To convert hardness from ppm to grains per gallon, divide by 17.1. A hardness scale is provided below for your reference.

Hardness Classification	Grains per Gallon	mg/L or ppm
Soft	0-3.5	0-60
Slightly hard	3.5-7	60-120
Moderately hard	7-10.5	120-180
Hard	10.5-14	180-240
Very hard	over 14.5	over 240

HOW TO READ THIS CHART

DEFINITIONS OF KEY TERMS

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 color, taste, and appearance of drinking water. MCLs are established by USEPA and CDPH.

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 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.

Notification Level (NL) Notification levels are health-based advisory levels established by CDPH for chemicals in drinking water that lack MCLs. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.

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

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 Office of Environmental Health Hazard Assessment.

Regulatory Action Level (AL) 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.

Total Organic Carbon (TOC) TOC has no health effects. However, TOC provides a medium for the formation of disinfection byproducts including trihalomethanes and haloacetic acids. Drinking water containing disinfection byproducts in excess of the MCL may lead to adverse health effects: liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer.

Turbidity Turbidity has no health effects, it is a measure of the clarity of the water and is monitored because it is a good indicator of water quality and the effectiveness of a filtration system. The MCL for turbidity is based on the T₁ For unfiltered water, the MCL is 5.0 NTU. For filtered water, the MCL is <5.0 NTU 95% of the time.

Waiver State permission to decrease the monitoring frequency for a particular contaminant.

ABBREVIATIONS

°C	Degrees Celsius
CDPH	California Department of Public Health
CU	Color unit
Max	Maximum
NA	Not available
ND	Not detected
NS	No standard
NTU	Nephelometric turbidity unit
ppb	parts per billion (micrograms per liter)
ppm	parts per million (milligrams per liter)
µS/cm	microSiemens per centimeter
% pos	% positive
RAA	Running annual average
SCVWD	Santa Clara Valley Water District
SFPUC	San Francisco Public Utilities Commission
TOC	Total organic carbon
TON	Threshold odor number
USEPA	United States Environmental Protection Agency

NOTES

- 1. Single-highest sample test result in 2012.
- 2. Range of monthly averages.
- 3. Sampling location highest RAA.
- 4. System-wide RAA for the 1st quarter of 2012.
- 5. Levels in the distribution system.

* TYPICAL SOURCES IN DRINKING WATER

1. Naturally present in the environment
2. Soil runoff
3. Erosion of natural deposits
4. Residue from some surface water treatment processes
5. Water additive that promotes strong teeth
6. Discharge from fertilizer and aluminum factories
7. Runoff and leaching from fertilizer use
8. Leaching from septic tanks and sewage
9. Byproduct of drinking water disinfection
10. Various natural and man-made sources
11. Runoff from natural deposits
12. Leaching from natural deposits
13. Naturally-occurring organic materials
14. Seawater influence
15. Industrial wastes
16. Substances that form ions when in water
17. Internal corrosion of household plumbing systems
18. Leaching from wood preservatives
19. Discharges from industrial manufacturers
20. Drinking water disinfectant added for treatment

SOURCE MAP

The adjacent map indicates which areas of the City are supplied by SFPUC, SCVWD or a mixture of the two. The colored regions correspond to the colored columns in the table above.

Groundwater wells, which are not shown on this map, are located throughout the City. Local groundwater is blended with surface water supplies from SFPUC and SCVWD.

SFPUC water is fluoridated but SCVWD and groundwater supplies are not.

