2019

REPORT ON THE CITY'S WATER QUALITY PROGRAM RELATIVE TO PUBLIC HEALTH GOALS

City of Santa Clara Water and Sewer Utilities

City of Santa Clara

1500 Warburton Avenue

Santa Clara, California 95050

Table of Contents

2019 Public Health Goals Report on Water Quality

1. BACKGROUND:

The California Safe Drinking Water Act specifies that larger water utilities (>10,000 service connections) must prepare and complete a report every 3 years if any water quality measurements have exceeded a Public Health Goal (PHG). The last PHG Report for Santa Clara was completed in 2016. PHGs are non-enforceable goals established by the state Office of Environmental Health Hazard Assessment (OEHHA). Where OEHHA has not adopted a PHG for a particular constituent, the Safe Drinking Water Act directs water suppliers to use federal Maximum Contaminant Level Goals (MCLGs) previously adopted by the United States Environmental Protection Agency (USEPA), if available. The report is to address constituents which have a California primary drinking water standard Maximum Contaminant Level (MCL) and for which either a PHG or MCLG has been set and exceeded.

Pursuant to the Safe Drinking Water Act, this report lists all constituents detected in the City's water supply from 2016 through 2018 at levels exceeding an applicable PHG or MCLG. Included in the report are the following:

- The numerical public health risk associated with the MCL and PHG or MCLG,
- The category or type of risk to health that could be associated with each constituent,
- The best treatment technology available that could be used to reduce the constituent level, and
- An estimate of the cost to install that treatment if it is appropriate and feasible.

1.1 What are MCLs, PHGs, and MCLGs?

The USEPA and the State Water Resources Control Board (SWRCB) establish MCLs at very conservative levels to provide protection to consumers against all risks, excluding very low to negligible risks. In other words, MCLs are the regulatory definition of what is "safe."

MCLGs (set by USEPA) and PHGs (set by OEHHA) are often set at very low levels depending on the established health risk. Determination of health risks at these low levels are frequently theoretical, based on risk assessments with multiple assumptions and mathematical extrapolations. The USEPA sometimes sets MCLGs at zero, while recognizing that zero is an unattainable goal and cannot be measured practically by the available analytical methods. None of the realistic risk-management factors that are considered by the USEPA, or the SWRCB, in setting drinking water standards (MCLs) are considered in setting PHGs. These practical risk management factors include analytical detection capability,

treatment technology available, benefits, and costs. The PHGs and MCLGs are not enforceable.

1.2 Water Quality Data Considered:

All of the water quality data collected by the City of Santa Clara's Water Utility from 2016 through 2018, for purposes of determining compliance with drinking water standards, have been considered in this report. These data have also been summarized in our Consumer Confidence Reports (CCRs) 2017, 2018, and 2019. The CCR is mailed as a newspaper insert annually to all of our utility billing customers during the month of June and represents water quality data collected from January to December of the previous year.

The Association of California Water Agencies (ACWA) formed a workgroup which prepared guidelines for water utilities to use in preparing required PHG reports. The ACWA guidelines were used in the preparation of this report. No guidance was available from state regulatory agencies.

1.3 Best Available Treatment (BAT) Technology and Cost Estimates:

Both the USEPA and the SWRCB have adopted what are known as Best Available Technologies (BATs), which are the best available methods of reducing contaminant concentrations to permissible MCLs. However, neither USEPA nor SWRCB have adopted or defined BATs to reach extremely low levels established by the PHGs and MCLGs, and such technologies may not realistically be available.

Accurate cost estimates are difficult if not impossible and are highly speculative and theoretical. Therefore, they have limited value and may not warrant a significant investment of agency time and money. Moreover, 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.

2. CONSTITUENTS DETECTED THAT EXCEED A PHG OR MCLG:

The following are discussions of the constituents coliform bacteria, arsenic, and lead and copper. The City detected these constituents in the distribution system, the source water for the distribution system, or at a consumer's tap (for lead and copper rule compliance), at levels above the applicable PHG or MCLG. The report would include any PHG or MCLG that was exceeded in one or more of our drinking water sources, if that had occurred.

2.1 Coliform:

The MCLG for coliform bacteria is set at zero by USEPA; there is no PHG for coliform. The current MCL for total coliform is set at five percent (5%) of all samples collected in a calendar month. The City's distribution system is in full compliance with this limit.

Coliform Monitoring

MCL	5%
MCLG	0%
Range of Results	ND - 4.1%

Coliform bacteria are indicator organisms and are not considered harmful, but are used to identify the potential presence of pathogens in water. The City monitors for total coliform bacteria on a weekly basis and the analysis simply indicates the presence or absence of coliform bacteria. When a sample result is positive, it triggers further investigation into the presence of other organisms. The monitoring for coliform bacteria is conservative as it does not necessarily indicate the presence of more harmful organisms, but rather provides as an indicator of whether or not additional organisms may be present in the water.

The identified BAT methods for achieving MCL compliance for total coliform are as follows:

- Protection of wells from coliform contamination by appropriate placement and construction;
- Maintenance of a disinfectant residual throughout the distribution system;
- 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; and
- Filtration and/or disinfection of surface water or disinfection of ground water

The City has implemented all of the above actions or processes, or obtains water from suppliers who implement these processes (such as filtration and chloramination). One method that may reduce or eliminate the presence of total coliform is to increase the amount of disinfectant residual in the distribution system. However, this method increases the potential presence of cancer-causing disinfection byproducts.

In the interest of protecting the public's health and because the City is in compliance with the state and federal limit for total coliform, the City plans to continue to implement the current technologies and monitoring and maintenance program and does not plan to install additional treatment. As such, there is no estimated cost associated with additional treatment to reduce the incidence of coliform bacteria. Coliform results are included in the table of data for the City's CCRs 2017, 2018, and 2019 as documentation of compliance with the Safe Drinking Water Act.

2.2 Arsenic:

The PHG for arsenic is set at 0.004 parts per billion (ppb) by OEHHA. The PHG is set at a level that is lower than the 2.0 ppb detection limit currently achievable for that analysis. The current MCL for Arsenic is set at 10.0 ppb. Arsenic is a carcinogen and the risk of getting cancer from drinking water for a lifetime at the PHG level is one person in one million, whereas the risk of getting cancer from drinking water for a lifetime at the MCL level is 2.5 people per one thousand (or 5 people per two thousand). All of the City's water sources are in full compliance with this limit.

Arsenic Monitoring

MCL	10 ppb
PHG	0.004 ppb
Range of Results	ND – 4 ppb

The identified BAT methods for removing arsenic from drinking water include activated alumina, coagulation/filtration, ion exchange, lime softening, reverse osmosis (RO), electrodialysis and oxidation/filtration. For the purpose of evaluating the cost implications for treatment of arsenic, RO was selected as the proposed treatment. Reverse Osmosis (RO) is also identified as the BAT for a number of other inorganic chemicals and can provide treatment for a number of constituents in addition to arsenic.

Reverse osmosis (RO) is an effective and commonly used treatment system in drinking water and wastewater applications. The RO process uses a membrane filter that requires high water pressure to allow water molecules to pass through and other chemicals to remain producing two streams: the treated water and the concentrated wastewater stream. The cost to provide RO treatment for the groundwater supplies ranges from $0.86 to $7.33 per 1,000 gallons of water treated according to the ACWA guidance. This cost does not include the cost for design, planning, permitting, and waste disposal, which can increase total costs substantially. In 2018, the City used approximately 10,671 acre-feet of groundwater. This translates to approximately 9.5 million gallons per day. At this rate, the cost to provide RO treatment for all groundwater used by the City would range from $3.0 million to $25.5 million annually. Therefore, it may be reasonable to assume the higher cost, as each groundwater well will require a separate treatment unit. Many smaller units would be much more costly than a single large unit. Assuming that all groundwater wells would be treated, the $25.5 million would represent a worst-case estimate. Based on these assumptions, and the 2018 population of 129,604, the annual cost implication per person would be approximately $197 annually.

This treatment option produces wastewater and treatment byproducts which must be disposed of properly. In addition, this treatment option may not be capable of meeting the PHG though it is identified as a BAT for the purpose of meeting the MCL. The MCL of 10 ppb

for arsenic is a significantly higher than the PHG of 0.004 ppb for arsenic. The MCL is what has been determined as 'safe' from a regulatory standpoint, and which is enforceable. Also, since current analytical technology is not capable of measuring concentrations as low as the PHG, it would be impossible to verify that compliance with the PHG was achieved even if treatment was installed.

Since the City is in compliance with both the State and Federal limit for arsenic, there is no plan to install additional treatment. Arsenic results are included in the table of data for the City's CCRs 2017, 2018, and 2019 as documentation of compliance with the Safe Drinking Water Act.

2.3 Lead and Copper:

The City monitors both the groundwater wells and tap water at consumer households every three years for lead and copper. The purpose behind collecting lead and copper samples at household taps is to determine whether lead and copper from household plumbing is leaching into the drinking water. The presence of lead and copper is a function of the materials used in household plumbing, the condition of household plumbing, and the corrosive characteristics of the water being supplied by the City to the homes.

There is no MCL for either lead or copper, instead both constituents have action levels (ALs) set by the SWRCB. The 90th percentile value of all samples from household taps cannot exceed an AL of 15 ppb for lead and 1.3 ppm for copper. The PHG for lead is 0.2 ppb and the PHG for copper is 0.3 ppm. Lead is a carcinogen and the risk of getting cancer from drinking water for a lifetime at the PHG level is three people in one hundred million and the risk of getting cancer from drinking water for a lifetime at the MCL level is two people per one million. Copper is not a carcinogen but can cause digestive toxicity if consumed in large doses (greater than the MCL) over short periods or at the MCL for a lifetime. All of the City of Santa Clara's groundwater samples for both lead and copper in 2016, 2017, and 2018 were less than the PHG.

Household tap samples taken in 2016 had a 90th percentile value of 3.2 ppb of lead and a 90th percentile value of 0.38 ppm of copper as reflected in the table below. Both lead and copper parameters are well below the ALs set by the SWRCB.

Lead Monitoring

AL	15 ppb
PHG	0.2 ppb
Range of Results	ND – 5.9 ppb
90th Percentile	3.2 ppb

Copper Monitoring

AL	1.3 ppm
PHG	0.3 ppm
Range of Results	ND – 0.92 ppm
90th Percentile	0.38 ppm

Effective January 2018, State law required water suppliers to sample all schools on public land by mid-2019. Below are the results for school lead testing in 2018:

School Lead Testing

AL	15 ppb
PHG	0.2 ppb
Range of Results	ND – 26 ppb
90th Percentile	2.1 ppb

All samples, with the exception of one sample taken at John Sutter Elementary School were well below the EPA action level for lead. The fixture was immediately taken out of service and replaced by Santa Clara Unified School District staff. Resampling at the site resulted in a non-detect for lead.

The City of Santa Clara's water system is in full compliance with both the state and federal Lead and Copper Rule. Therefore, the system is considered to have "optimized corrosion control" by the SWRCB. In general, optimizing corrosion control is considered to be the BAT to deal with corrosion issues associated with any lead or copper findings at household taps. Water quality parameters that relate to corrosivity, such as pH, hardness, alkalinity, and total dissolved solids are monitored on an ongoing basis.

Since the City of Santa Clara is meeting the "optimized corrosion control" requirements, it is not prudent to initiate additional corrosion control treatment as it involves the addition of other chemicals that can affect water quality. The household lead and copper results are included in the table of data for the City's CCRs 2017, 2018, and 2019 as documentation of compliance with the Safe Drinking Water Act.

2.4 Recommendations for Further Actions:

The drinking water quality of the City of Santa Clara's water supply meets all SWRCB and USEPA drinking water standards set to protect public health. To further reduce the levels of the constituents identified in this report below the level that the state has already determined to meet the regulatory definition of "safe drinking water" would require very costly treatment processes. The large financial outlay required for additional treatment processes and the effectiveness of the treatment processes to provide any significant reductions in constituent levels at these already low values is uncertain and would merely mean that the already safe drinking water is slightly safer, however the health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed at this time.

ATTACHMENT 1

Table 1: PHGs, DLRs, and MCLs

Constituent	MCL or (AL)	DLR	PHG or (MCLG)
Coliform (% positive)	5%	0.50%	(0%)
Arsenic (ppb)	10	2	0.004
Copper (ppm)	(1.3)	0.05	0.3
Lead (ppb)	(15)	5	0.2

MCL = Maximum Contaminant Level

AL = Action Level

DLR = Detection Limit for the Purpose of Reporting

PHG = Public Health Goal

MCLG = Maximum Contaminant Level Goal

ATTACHMENT 2

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 3

MCLs, DLRs and PHGs for Regulated Drinking Water Contaminants

Source: California State Water Resources Control Board: Comparison of MCLs and PHGs for Regulated Contaminants in Drinking Water

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/MCLsandPHGs.html

Last Update: March 13, 2019

MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants

(Units are in milligrams per liter (mg/L), unless otherwise noted.)

Last Update: March 13, 2019

This table includes:

California's maximum contaminant levels (MCLs)

Detection limits for purposes of reporting (DLRs)

Public health goals (PHGs) from the Office of Environmental Health Hazard Assessment (OEHHA)

Also, the PHG for NDMA (which is not yet regulated) is included at the bottom of this table.

For comparison:

Federal MCLs and Maximum Contaminant Level Goals (MCLGs) (US EPA)

Regulated Contaminant	MCL	DLR	PHG	Date of PHG	MCL	MCLG
Chemicals with MCLs in 22 CCR §64431—Inorganic Chemicals						
Aluminum	1	0.05	0.6	2001	--	--
Antimony	0.006	0.006	0.001	2016	0.006	0,006
Arsenic	0.010	0.002	0.000004	2004	0.010	zero
Asbestos (MFL = million fibers per liter; for fibers >10 microns long)	7 MFL	0.2 MFL	7 MFL	2003	7 MFL	7 MFL
Barium	1	0.1	2	2003	2	2
Beryllium	0.004	0.001	0.001	2003	0.004	0.004
Cadmium	0.005	0.001	0.00004	2006	0.005	0.005
Chromium, Total - OEHHA withdrew the 0.0025-mg/L PHG	0.05	0.01	withdrawn Nov. 2001	1999	0.1	0.1
Chromium, Hexavalent - 0.01-mg/L MCL & 0.001-mg/L DLR repealed September 2017	--	--	0.00002	2011	--	--
Cyanide	0.15	0.1	0.15	1997	0.2	0.2
Fluoride	2	0.1	1	1997	4.0	4.0
Mercury (inorganic)	0.002	0.001	0.0012	1999 (rev2005)*	0.002	0.002
Nickel	0.1	0.01	0.012	2001	--	--
Nitrate (as nitrogen, N)	10 as N	0.4	45 as NO3 (=10 as N)	2018	10	10
Nitrite (as N)	1 as N	0.4	1 as N	2018	1	1
Nitrate + Nitrite (as N)	10 as N	--	10 as N	2018	--	--
Perchlorate	0.006	0.004	0.001	2015	--	--
Selenium	0.05	0.005	0.03	2010	0.05	0.05
Thallium	0.002	0.001	0.0001	1999 (rev2004)	0.002	0.0005
Copper and Lead, 22 CCR §64672.3						
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						
Copper	1.3	0.05	0.3	2008	1.3	1.3
Lead	0.015	0.005	0.0002	2009	0.015	zero

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	none	n/a	15	zero
Gross beta particle activity - OEHHA concluded in 2003 that a PHG was not practical	4 mrem/yr	4	none	n/a	4 mrem/yr	zero
Radium-226	--	1	0.05	2006		
Radium-228	--	1	0.019	2006		
Radium-226 + Radium-228	5	--	--	--	5	zero
Strontium-90	8	2	0.35	2006	--	--
Tritium	20,000	1,000	400	2006	--	--
Uranium	20	1	0.43	2001	30 µg/L	zero
Chemicals with MCLs in 22 CCR §64444—Organic Chemicals						
(a) Volatile Organic Chemicals (VOCs)						
Benzene	0.001	0.0005	0.00015	2001	0.005	zero
Carbon tetrachloride	0.0005	0.0005	0.0001	2000	0.005	zero
1,2-Dichlorobenzene	0.6	0.0005	0.6	1997 (rev2009)	0.6	0.6
1,4-Dichlorobenzene (p-DCB)	0.005	0.0005	0.006	1997	0.075	0.075
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)	0.005	zero
1,1-Dichloroethylene (1,1-DCE)	0.006	0.0005	0.01	1999	0.007	0.007
cis-1,2-Dichloroethylene	0.006	0.0005	0.013	2018	0.07	0.07
trans-1,2-Dichloroethylene	0.01	0.0005	0.05	2018	0.1	0.1
Dichloromethane (Methylene chloride)	0.005	0.0005	0.004	2000	0.005	zero
1,2-Dichloropropane	0.005	0.0005	0.0005	1999	0.005	zero
1,3-Dichloropropene	0.0005	0.0005	0.0002	1999 (rev2006)	--	--
Ethylbenzene	0.3	0.0005	0.3	1997	0.7	0.7
Methyl tertiary butyl ether (MTBE)	0.013	0.003	0.013	1999	--	--
Monochlorobenzene	0.07	0.0005	0.07	2014	0.1	0.1
Styrene	0.1	0.0005	0.0005	2010	0.1	0.1
1,1,2,2-Tetrachloroethane	0.001	0.0005	0.0001	2003	0.1	0.1
Tetrachloroethylene (PCE)	0.005	0.0005	0.00006	2001	0.005	zero
Toluene	0.15	0.0005	0.15	1999	1	1
1,2,4-Trichlorobenzene	0.005	0.0005	0.005	1999	0.07	0.07
1,1,1-Trichloroethane (1,1,1-TCA)	0.200	0.0005	1	2006	0.2	0.2
1,1,2-Trichloroethane (1,1,2-TCA)	0.005	0.0005	0.0003	2006	0.005	0.003
Trichloroethylene (TCE)	0.005	0.0005	0.0017	2009	0.005	zero
Trichlorofluoromethane (Freon 11)	0.15	0.005	1.3	2014	--	--
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	0.002	zero
Xylenes	1.750	0.0005	1.8	1997	10	10

(b) Non-Volatile Synthetic Organic Chemicals (SOCs)						
Alachlor	0.002	0.001	0.004	1997	0.002	zero
Atrazine	0.001	0.0005	0.00015	1999	0.003	0.003
Bentazon	0.018	0.002	0.2	1999 (rev2009)	--	--
Benzo(a)pyrene	0.0002	0.0001	0.000007	2010	0.0002	zero
Carbofuran	0.018	0.005	0.0007	2016	0.04	0.04
Chlordane	0.0001	0.0001	0.00003	1997 (rev2006)	0.002	zero
Dalapon	0.2	0.01	0.79	1997 (rev2009)	0.2	0.2
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0.00001	0.0000017	1999	0.0002	zero
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.07	0.01	0.02	2009	0.07	0.07
Di(2-ethylhexyl)adipate	0.4	0.005	0.2	2003	0.4	0.4
Di(2-ethylhexyl)phthalate (DEHP)	0.004	0.003	0.012	1997	0.006	zero
Dinoseb	0.007	0.002	0.014	1997 (rev2010)	0.007	0.007
Diquat	0.02	0.004	0.006	2016	0.02	0.02
Endothal	0.1	0.045	0.094	2014	0.1	0.1
Endrin	0.002	0.0001	0.0003	2016	0.002	0.002
Ethylene dibromide (EDB)	0.00005	0.00002	0.00001	2003	0.00005	zero
Glyphosate	0.7	0.025	0.9	2007	0.7	0.7
Heptachlor	0.00001	0.00001	0.000008	1999	0.0004	zero
Heptachlor epoxide	0.00001	0.00001	0.000006	1999	0.0002	zero
Hexachlorobenzene	0.001	0.0005	0.00003	2003	0.001	zero
Hexachlorocyclopentadiene	0.05	0.001	0.002	2014	0.05	0.05
Lindane	0.0002	0.0002	0.000032	1999 (rev2005)	0.0002	0.0002
Methoxychlor	0.03	0.01	0.00009	2010	0.04	0.04
Molinate	0.02	0.002	0.001	2008	--	--
Oxamyl	0.05	0.02	0.026	2009	0.2	0.2
Pentachlorophenol	0.001	0.0002	0.0003	2009	0.001	zero
Picloram	0.5	0.001	0.166	2016	0.5	0.5
Polychlorinated biphenyls (PCBs)	0.0005	0.0005	0.00009	2007	0.0005	zero
Simazine	0.004	0.001	0.004	2001	0.004	0.004
Thiobencarb	0.07	0.001	0.042	2016	--	--
Toxaphene	0.003	0.001	0.00003	2003	0.003	zero
1,2,3-Trichloropropane	0.000005	0.000005	0.0000007	2009	--	--
2,3,7,8-TCDD (dioxin)	$3x10^{-8}$	$5x10^{-9}$	$5x10^{-11}$	2010	$3x10^{-8}$	zero
2,4,5-TP (Silvex)	0.05	0.001	0.003	2014	0.05	0.05

Chemicals with MCLs in 22 CCR §64533—Disinfection Byproducts						
Total Trihalomethanes	0.080	--	--	--	0.080	--
Bromodichloromethane	--	0.0010	0.00006	2018 draft	--	zero
Bromoform	--	0.0010	0.0005	2018 draft	--	zero
Chloroform	--	0.0010	0.0004	2018 draft	--	0.07
Dibromochloromethane	--	0.0010	0.0001	2018 draft	--	0.06
Haloacetic Acids (five) (HAA5)	0.060	--	--	--	0.060	--
Monochloroacetic Acid	--	0.0020	--	--	--	0.07
Dichloroacetic Adic	--	0.0010	--	--	--	zero
Trichloroacetic Acid	--	0.0010	--	--	--	0.02
Monobromoacetic Acid	--	0.0010	--	--	--	--
Dibromoacetic Acid	--	0.0010	--	--	--	--
Bromate	0.010	0.0050**	0.0001	2009	0.01	zero
Chlorite	1.0	0.020	0.05	2009	1	0.8
Chemicals with PHGs established in response to DDW requests. These are not currently regulated drinking water contaminants.						
N-Nitrosodimethylamine (NDMA)	--	--	0.000003	2006	--	--
*OEHHA's review of this chemical during the year indicated (rev20XX) resulted in no change in the PHG.						
**The DLR for Bromate is 0.0010 mg/L for analysis performed using EPA Method 317.0 Revision 2.0, 321.8, or 326.0.						

ATTACHMENT 4

City of Santa Clara Consumer Confidence Reports:

- Consumer Confidence Report 2017
- Consumer Confidence Report 2018
- Consumer Confidence Report 2019

WATER QUALITY

CONSUMER CONFIDENCE REPORT 2017

City of Santa Clara
The Center of What's Possible

Report contains water quality monitoring results

The City of Santa Clara is committed to providing you, the water consumer, with a safe and reliable supply of high quality drinking water. Each year we publish an annual water quality report known as the Consumer Confidence Report. This is our 29th annual report on water quality. It contains the latest water quality monitoring results obtained through the end of calendar year 2016. It answers some of the most common water quality questions asked by our customers. We hope it will provide the facts and perspectives you need to make an informed evaluation of your tap water.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

This report has been prepared in accordance with the requirements of the Safe Drinking Water Act and State regulations. Although the water you receive is tested for over 100 potential contaminants and 48 other parameters, the majority of the potential contaminants are never detected. To simplify the report, only the constituents that were detected in at least one water source appear in the water quality table. We are also required by the State to provide additional information about certain constituents that appear on the water quality table even though the water meets all applicable drinking water standards. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

Santa Clara water comes from three sources

The City of Santa Clara has three separate sources of drinking water. Often, these sources are used interchangeably or are blended together. Altogether these sources provide an average of 18 million gallons of water per day to the homes, businesses, industries and institutions of Santa Clara. In 2016, about 41% of our water was treated surface water purchased from the Santa Clara Valley Water District, imported from the Sacramento-San Joaquin Delta, and from the San Francisco Public Utility Commission's (SFPUC) Hetch-Hetchy System, imported from the Sierra Nevada Mountains.

See map of water sources on page 2

District water serves primarily the southwesterly portion of the City. SFPUC Hetch-Hetchy water typically serves the area north of Highway 101. The remaining 59% is pumped from the City's system of 26 deep wells serving the rest of Santa Clara.

Information and guidance for people with compromised immune systems

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 about drinking water from their health care providers. USEPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

Drinking water must meet standards

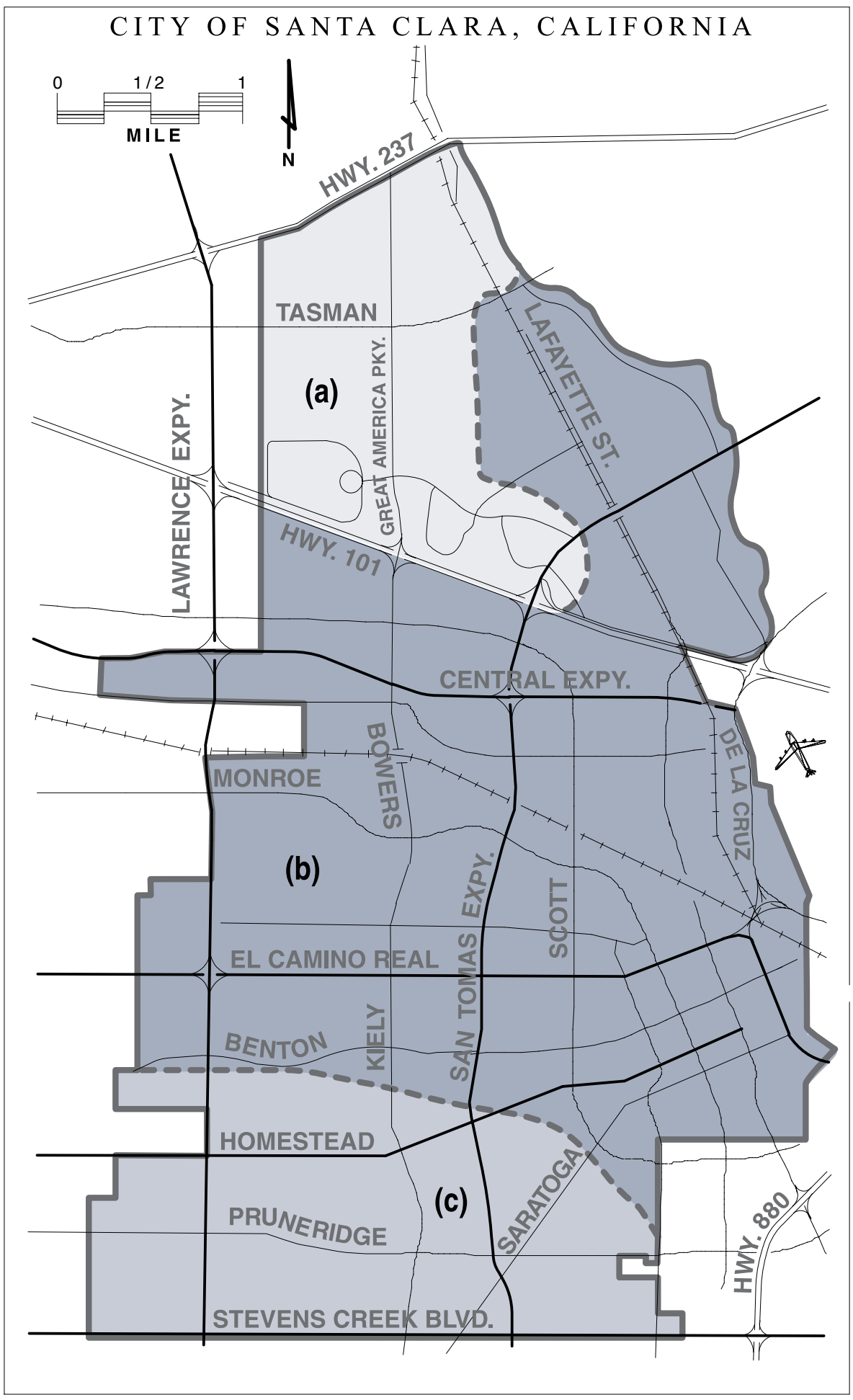
The quality of drinking water is carefully regulated by the federal government. In 1974, Congress passed the Safe Drinking Water Act, requiring the USEPA to establish uniform standards for drinking water. The Safe Drinking Water Act was further amended in 1986 and 1996, adding even more stringent standards. In California, these standards are enforced by the State Water Resources Control Board Division of Drinking Water.

There are two types of drinking water standards. **PRIMARY STANDARDS** are designed to protect public health. These standards specify the limits, called "Maximum Contaminant Levels" for substances in water that may be harmful to humans or affect their health if consumed in large quantities. **SECONDARY STANDARDS** are based on aesthetic qualities of water such as color, taste and odor. These standards specify limits for substances that may affect consumer acceptance of the water. Both Primary and Secondary Standards are listed in this report.

> We take great pride in delivering the safest and highest quality water available.

It is important to the City of Santa Clara that you, the water consumer, have current and factual information about your water supply. In this latest issue of our report, we hope to further your understanding and strengthen your confidence in the quality and integrity of the water supplied to you by the City of Santa Clara.

If you have any questions about information in this report, or if you want to participate in water quality related issues, call Mike Vasquez at the Water Utility at 408-615-2000 or email MVasquez@SantaClaraCA.gov.



(a) - SFPUC Hetch Hetchy System
(b) - City of Santa Clara Groundwater
(c) - SCVWD Treated Surface Water

Some Santa Clara water is fluoridated

Fluoride is nature's cavity fighter. Fluoridation adjusts the naturally occurring fluoride in drinking water to the ideal level for protecting your teeth. Fluoridated drinking water benefits people of all ages by preventing tooth decay.

In November of 2005, the SFPUC Hetch Hetchy system completed construction of a fluoridation facility in the east bay. The water purchased by the City from the SFPUC is fluoridated, while water from the Santa Clara Valley Water District is not fluoridated. If your zip code is 95054, you are in the area receiving fluoridated water. However, this area is also served by well water that has not been fluoridated. Refer to the map above that shows the area supplied with water from both the Hetch-Hetchy system and the City's wells. The majority of Santa Clara will continue to receive water without added fluoride.

State law requires the addition of fluoride to all water systems in California serving 10,000 customers or more. Fluoridation of the remaining water sources in the City would require installation of fluoride injecting equipment at each of the City's 26 active wells and at its treated water connection from the Santa Clara Valley Water District. The law includes a provision for state funds to finance this fluoridation equipment, however it may be some time before the State can provide funding to move forward with a fluoridation program for the remainder of the City.

Contact your health provider if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the Centers for Disease Control website CDC.gov/fluoridation or the State Water Resources Control Board website Waterboards.CA.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml.

City wells

The majority of water consumed in the City of Santa Clara is pumped from the City's system of deep wells. Well water is pulled up from groundwater – water that is located in aquifers (water-filled spaces between sand, gravel, silt and clay) deep in the ground. Aquifers are replenished by rainwater that infiltrates down from the land surface.

Hetch Hetchy system

The City purchases water from the SFPUC Hetch Hetchy System. The SFPUC conducts watershed sanitary surveys for the Hetch Hetchy source annually and local water sources every five years. The last local sanitary survey was done in 2016. The SFPUC conducted a special watershed sanitary survey for Upcountry Non-Hetch Hetchy Sources in 2015 as part of its drought response plan efforts. These surveys evaluate the sanitary condition, water quality, potential contamination sources and the results of watershed management activities, and were completed with support from partner agencies including National Park Service and U.S. Forest Service. These surveys identified wildlife, stock, and human activities as potential contamination sources. You may contact the San Francisco District office of the State Water Resources Control Board at 510-620-3474 for the review of these reports.

Santa Clara Valley Water District

The Santa Clara Valley Water District provides treated surface water to the Silicon Valley from three water treatment plants. District surface water is mainly imported from the South Bay Aqueduct, Dyer Reservoir, Lake Del Valle, and San Luis Reservoir, which all draw water from the Sacramento - San Joaquin Delta watershed. The District's local water sources include Anderson and Calero Reservoirs.

The District's 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. The imported sources are also vulnerable to wastewater treatment plant discharges, seawater intrusion, and wild fires in open space areas. In addition, local sources are also vulnerable to potential contamination from commercial stables and historic mining practices. No contaminant associated with any of these activities has been detected in the District's treated water. The water treatment plants provide multiple barriers for physical removal of contaminants and disinfection of pathogens. For more information, visit the District website at ValleyWater.org.

City of Santa Clara Water Quality Table

	UNIT	MCL	State PHG/ Fed (MCLG)	analysis for City SC Well Water range	analysis for City SC Well Water average	analysis for SCVWater District range	analysis for SCVWater District average	analysis for HETCH HETCHY range	analysis for HETCH HETCHY average or [max]	Common Sources of:
PRIMARY STANDARDS FOR SOURCE WATER SAMPLING:										
MICROBIOLOGICAL										
giardia lamblia	cyst/L	TT	0	NA	NA	NA	NA	0-0.11	0.03	naturally present in environment
RADIOACTIVITY										
Gross Alpha	pCi/L	15	(0)	ND	ND	ND	ND	ND	ND	erosion of natural deposits
INORGANIC CHEMICAL										
Aluminum	PPM	1	0.6	0-0.029	ND	ND - 0.076	ND	ND	ND	natural deposits/treatment process
Arsenic	PPB	10	0.004	ND-1.1	0.11	ND	ND	ND	ND	erosion of nat'l deposit/runoff
Barium	PPM	1	2	0.085 - 0.12	0.1	ND	ND	ND	ND	erosion of nat'l deposit/oil drilling
Chromium	PPB	50	(100)	ND - 2.4	0.97	ND	ND	ND	ND	erosion of nat'l deposit/plating
Fluoride	PPM	2	1	0.11 - 0.18	0.15	ND	ND	ND - 0.8	0.3	water additive/erosion of nat'l deposits
Hexavalent Chromium	PPB	10	0.02	0-0.72	0.72	ND	ND	ND	ND	erosion of natural deposits
Nitrate (as Nitrogen)	PPM	10	10	0.39 - 6.1	3.3	ND - 1.1	ND	ND	ND	erosion of nat'l deposit/runoff/leaching
SECONDARY STANDARDS: "CONSUMER ACCEPTANCE CONTAMINENT LEVELS"										
Aluminum	PPB	200	NA	0-29	2.9	ND	ND	ND-55	ND	natural deposits/treatment process
Chloride	PPM	500	NA	27 - 69	49.9	59 - 96	76	< 3 - 16	8.8	runoff/leaching nat'l deposits/seawater
Color	UNITS	15	NA	ND	ND	ND	ND	<5-11	<5	naturally occuring organic material
Copper	PPM	1	NA	ND	ND	ND	ND	ND	ND	erosion of nat'l deposit/leaching
Iron	PPB	300	NA	ND-0.03	0.003	ND	ND	ND	ND	leaching from nat'l deposits/ind. waste
Manganese	PPB	50	NA	ND - 25	2.5	ND	ND	ND	ND	leaching from natural deposits
Odor	UNITS	3	NA	ND - 2	1.1	1	1	ND	ND	naturally occuring organic material
Sp. Conductance	uS/cm	1600	NA	540 - 760	656	401 - 581	510	31 - 218	146	subst.forming ions/seawater intrusion
Sulfate	PPM	500	NA	31 - 48	38.5	38.7 - 64.6	49.7	1 - 30	16	runoff/leaching nat'l deposits/ind. waste
Tot.Dissolved Solids	PPM	1000	NA	330 - 460	400	222 - 344	282	< 20 - 95	63	runoff/leaching from natural deposits
Turbidity	NTU	5	NA	ND - 1.4	0.17	0.06 - 0.08	0.07	0.3 - 0.5 [1]	[3.2][2]	soil runoff
CONSUMER INFORMATION										
pH	UNITS	NS	NS	7.8 - 8.2	8.0	7.5 - 8.0	7.7	8.2 - 9.8	9.4	
Alkalinity (as CaCO3)	PPM	NS	NS	180 - 240	205	54 - 72	64	7 - 112	39	
Hardness	PPM	NS	NS	170 - 320	268	71 - 115	95	8 - 76	44	
Calcium (as Ca)	PPM	NS	NS	46 - 89	75	14 - 20	18	2-18	10	
Magnesium	PPM	NS	NS	14 - 24	19.7	9 - 13	11	0.2 - 6	3.6	
Sodium	PPM	NS	NS	24 - 49	30.9	47- 72	56	2.6 - 17	11	
Potassium	PPM	NS	NS	1.2 - 1.4	1.3	2.2 - 3.5	3	0.2 - 1	0.6	
PRIMARY STANDARDS AS MEASURED IN CITY OF SANTA CLARA DISTRIBUTION SYSTEM:										
MICROBIOLOGICAL										
Total Coliform	% pos (+)	5.00%	(0)	0 - 1.4%	< 5%					naturally present in environment
DISINFECTION BYPRODUCTS, RESIDUALS, PRECURSORS										
Trihalomethanes	PPB	80	NA	0 - 75	[66.5]					byproduct of drinking water disinfection
Haloacetic Acids	PPB	60	NA	0 - 52	[44.5]					byproduct of drinking water disinfection
Chlorine residual	PPM	4	4	0.0 - 3.0	0.78					drinking water disinfectant
INORGANIC CHEMICAL as measured at 50 Residential Taps in 2016:										
Copper	PPM	AL = 1.3	0.3	90th percentile = 0.380ppm		Number Exceeded = 0				corrosion of plumbing systems
Lead	PPB	AL = 15	0.2	90th percentile = 3.2 ppb		Number Exceeded = 0				corrosion of plumbing systems

UNREGULATED CONTAMINANTS AS MEASURED IN CITY OF SANTA CLARA DISTRIBUTION SYSTEM:

		NOTIFICATION LEVEL		
Chlorodifluoromethane	PPB	NA	0 - .58	0.17
Chlorate	PPB	800	0 - 98	38.2
Chromium	PPB	NA	0 - 4.9	1.6
Hexavalent Chromium	PPB	NA	0.03 - 4.1	1.5
Molybdenum	PPB	NA	0 - 3.7	2.0
Strontium	PPB	NA	260 - 430	315
Vanadium	PPB	50	2.8 - 5.3	4.1

[1] Turbidity is measured every four hours. These are monthly average turbidity values.
[2] The highest turbidity of the unfiltered Hetch Hetchy water in 2016 was 3.2 NTU.

Definitions and Notes:

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

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.

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 U.S. Environmental Protection Agency.

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.

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

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.

UNREGULATED CONTAMINANTS = Unregulated contaminant monitoring helps EPA and State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

pCi/L = picocuries per liter (a measure of radioactivity)

PPM = Parts Per Million

PPB = Parts Per Billion

P = Present

A = Absent

<DLR = less than Detection Limit for Reporting

DISTRIBUTION SYSTEM = drinking water delivery system

RESIDENTIAL TAPS = household faucets used for lead and copper sampling

DISINFECTION BYPRODUCTS = chemical by products of disinfection

SECONDARY STANDARDS = secondary MCLs are set to protect the aesthetics of drinking water

NTU = Nephelometric Turbidity Unit. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.

uS/cm = microSiemens per centimeter

NA = not applicable or available

ND = not detected

NS = no standard

Copper and Lead Tap Monitoring was performed in August 2016.

VANADIUM = the babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals

HARDNESS = the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.

SODIUM = refers to the salt present in the water and is generally naturally occurring.

ATTENTION

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

Chi tiết này thật quan trọng.
Xin nhờ người dịch cho quý vị.

Attencion: Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

此份有關你的食水報告,內有重要資料和訊息,請找他人為你翻譯及解釋清楚。

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시요.

यह सूचना महत्वपूर्ण है ।
कृपा करके किसी से :सका अनुवाद करायें ।

ਇਹ ਸੂਚਨਾ ਮਹਤੱਵਪੂਰਣ ਹੈ।
ਕ੍ਰਿਪਾ ਕਰਕੇ ਕਿਸੀ ਤੇ ਇਸ ਦਾ ਅਨੁਵਾਦ ਕਰਾਉ।

この報告書には上水道に関する重要な情報が記されております。翻訳を御依頼なされるか、内容をご理解なさっておられる方にお尋ね下さい。

Water Quality Monitoring

The City completed a Drinking Water Source Assessment and Protection Program for the groundwater sources in August 2002 and submitted it to the State Board in December 2002. A copy of the program is available at the City's Water Utility offices at 1500 Warburton Ave. You may request a summary of the individual assessments by contacting the Water Utility at 408-615-2000 or by email at water@SantaClaraCA.gov.

The City's groundwater sources are considered most vulnerable to contamination by: leaking underground tanks containing fuel or dry-cleaning chemicals; old, unrecorded septic systems; storm drain dry wells located at various places around the City; many old, shallow, private wells, abandoned and not properly destroyed; and possibly some contaminants from a small landfill dump left over from the early years of the 20th century.

Lead

There have been no exceedances of the ACTION LEVEL for lead in the City of Santa Clara groundwater sources or supplies purchased from other agencies. It is possible for lead levels in your home to be higher than other homes in the community because of plumbing materials used in the original construction of your home. 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 of Santa Clara 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 1-800-426-4791 or at EPA.gov/lead.

Nitrates

Nitrate in drinking water at levels above 10 mg/L is a health risk for infants less than six months old. 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 10 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.

Cryptosporidium and Giardia

Cryptosporidiosis is a disease of the intestinal tract brought on by a parasitic microbe (a protozoan) called Cryptosporidium. The disease is transmitted through contaminated water, food or direct contact with human or animal waste. If you are healthy with a normal immune system, the flu-like symptoms usually last about two weeks. Symptoms include diarrhea, stomach cramps, upset stomach and slight fever. However, immuno-compromised people, infants, small children, and the elderly are at greater risk of developing life-threatening illness.

The water purchased by the City from the SFPUC Hetch Hetchy system has been tested for Cryptosporidium and Giardia. The source waters and treated waters are tested at least monthly and occasionally show very low levels of Cryptosporidium in the waters serving the East Bay, South Bay and San Francisco Peninsula. Giardia, another parasitic organism causing similar symptoms, is monitored with the same frequency and very low levels are occasionally detected in the same source waters.

The general public is at very low risk and there have been no reported cases of Cryptosporidiosis and Giardiasis attributed to the City's public water supply. This advisory applies to water received from the Hetch Hetchy system in the area of the City north of Highway 101. The CDPH issues guidance for people with serious immune system problems. Currently, available guidance from the state and county health agencies recommends that people with such conditions consult with their doctor or primary health care provider about preventing Cryptosporidium and Giardia infection from all potential sources. Water consumers may choose to boil their drinking water at a rolling boil for at least one minute as an extra precaution.

For information about Cryptosporidiosis and Giardiasis, or copies of available guidance, contact the Santa Clara County Department of Environmental Health at 408-918-3400. You may also contact the USEPA Drinking Water Hotline at 1-800-426-4791.

What are the sources of tap water?

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over 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 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 resulting 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

In order to ensure that tap water is safe to drink, the U.S Environmental Protection Agency and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

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's Safe Drinking Water Hotline at 1-800-426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this public notice in a public place or distributing copies by hand or mail.

IMPORTANT CONTACT INFORMATION

City of Santa Clara
1500 Warburton Ave.
Santa Clara, CA 95050
408-615-2200
SantaClaraCA.gov

Water Utility
1500 Warburton Ave.
Santa Clara, CA 95050
Office hours: 8 a.m. – 5 p.m.,
Monday-Friday
408-615-2000

Water Billing Questions
408-615-2300

Water Quality Report Questions
Mike Vasquez
408-615-2000
mvasquez@santaclaraca.gov

Water Emergencies
408-615-2000 Monday-Friday,
8 a.m.-5 p.m.
408-615-5640 other days
and times

Water Conservation
Save20gallons.org
408-630-2554 – Water Conservation Hotline and Rebate Information

Sign up for a free Water-Wise House Call from Santa Clara Valley Water District by calling 1-800-548-1882

Web Resources
If you would like to learn more about drinking water quality, treatment and regulation, contact these organizations:

American Water Works Association
awwa.org

State Water Resources Control Board, Division of Drinking Water waterboards.ca.gov/drinking_water/programs/index.shtml

United States Environmental Protection Agency
water.epa.gov/drink/index.cfm

San Francisco Public Utilities Commission, Water Quality Bureau
sfwater.org/index.aspx?page=163

Santa Clara Valley Water District
valleywater.org

Water Education Foundation
watereducation.org

Water Quality Information Center
wquic.nal.usda.gov

Public Input
To provide input on decisions that affect drinking water quality, you are welcome to provide input to the Santa Clara City Council at a Council meeting or in advance via mail, email or phone contact. A list of all City Council meetings, agenda items and study sessions can be viewed on the City website SantaClaraCa.gov.

eNotify
Sign up to receive news from the Water Utility
SantaClaraCA.gov

WATER QUALITY

CONSUMER CONFIDENCE REPORT 2018

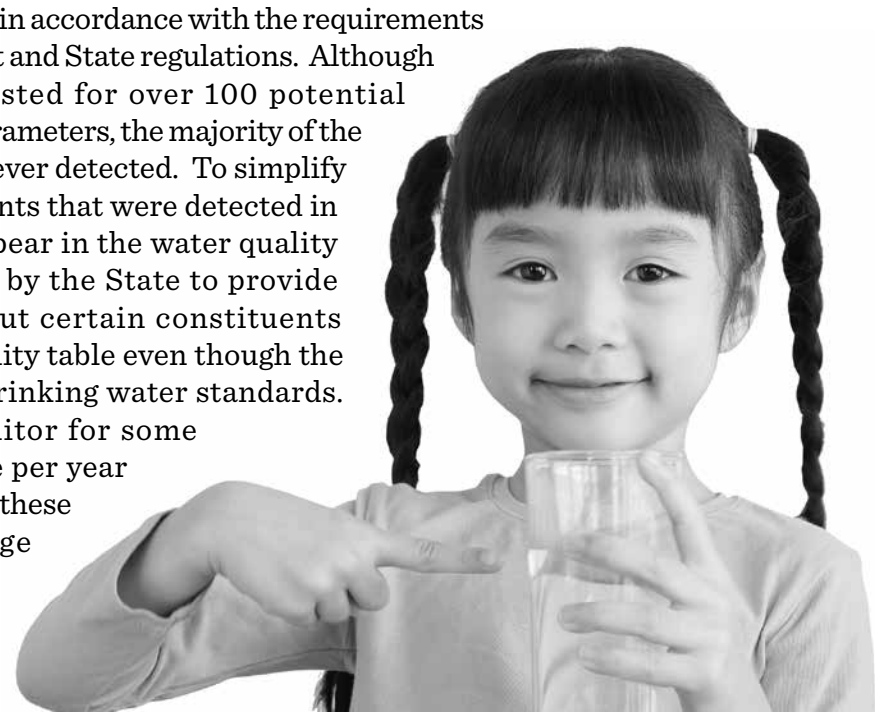
City of Santa Clara
The Center of What's Possible

Report contains water quality monitoring results

The City of Santa Clara is committed to providing you, the water consumer, with a safe and reliable supply of high quality drinking water. Each year we publish an annual water quality report known as the Consumer Confidence Report. This is our 30th annual report on water quality. It contains the latest water quality monitoring results obtained through the end of calendar year 2017. It answers some of the most common water quality questions asked by our customers. We hope it will provide the facts and perspectives you need to make an informed evaluation of your tap water.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

This report has been prepared in accordance with the requirements of the Safe Drinking Water Act and State regulations. Although the water you receive is tested for over 100 potential contaminants and 48 other parameters, the majority of the potential contaminants are never detected. To simplify the report, only the constituents that were detected in at least one water source appear in the water quality table. We are also required by the State to provide additional information about certain constituents that appear on the water quality table even though the water meets all applicable drinking water standards. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.



Santa Clara water comes from three sources

The City of Santa Clara has three separate sources of drinking water. Often, these sources are used interchangeably or are blended together. Altogether these sources provide an average of 18 million gallons of water per day to the homes, businesses, industries and institutions of Santa Clara. In 2017, about 35% of our water was treated surface water purchased from the Santa Clara Valley Water District, imported from the Sacramento-San Joaquin Delta, and from the San Francisco Public Utility Commission's (SFPUC) Hetch-Hetchy System, imported from the Sierra Nevada Mountains.

See map of water sources on page 2

District water serves primarily the southwesterly portion of the City. SFPUC Hetch-Hetchy water typically serves the area north of Highway 101. The remaining 65% is pumped from the City's system of 24 deep wells serving the rest of Santa Clara.

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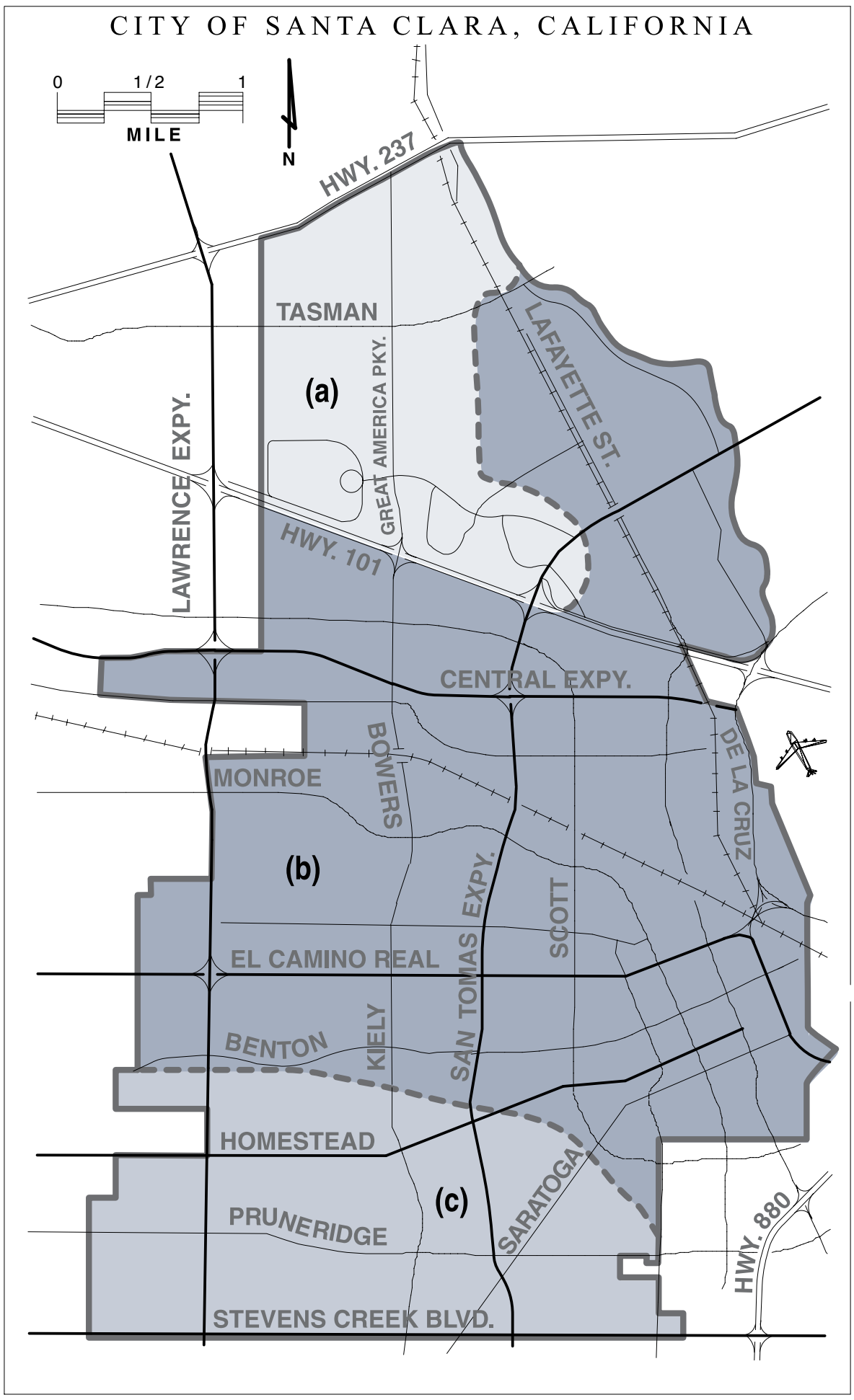
If you have any questions about the information in this report, or if you want to participate in water quality related issues, call the Water Utility at 408-615-2000. You may also attend City Council meetings at 7 p.m. in the Council Chambers of City Hall, 1500 Warburton Ave. For the latest Council meeting information, visit the City website SantaClaraCA.gov/councilmeetings.



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Fluoride is nature's cavity fighter. Fluoridation adjusts the naturally occurring fluoride in drinking water to the ideal level for protecting your teeth. Fluoridated drinking water benefits people of all ages by preventing tooth decay.

In November of 2005, the SFPUC Hetch Hetchy system completed construction of a fluoridation facility in the east bay. The water purchased by the City from the SFPUC is fluoridated, while water from the Santa Clara Valley Water District is not fluoridated. If your zip code is 95054, you are in the area receiving fluoridated water. However, this area is also served by well water that has not been fluoridated. Refer to the map above that shows the area supplied with water from both the Hetch-Hetchy system and the City's wells. The majority of Santa Clara will continue to receive water without added fluoride.

State law requires the addition of fluoride to all water systems in California serving 10,000 customers or more. In 2020, the Santa Clara Valley Water District plans to add fluoridation to the Rinconada Water Treatment Plant which serves the southern portion of Santa Clara. Fluoridation of the remaining water sources in the City would require installation of fluoride injecting equipment at each of the City's 24 active wells. The law includes a provision for state funds to finance this fluoridation equipment, however it may be some time before the State can provide funding to move forward with a fluoridation program for the remainder of the City.

Contact your health provider if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the Centers for Disease Control website CDC.gov/fluoridation or the State Water Resources Control Board website Waterboards.CA.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml.

City wells

The majority of water consumed in the City of Santa Clara is pumped from the City's system of deep wells. Well water is pulled up from groundwater – water that is located in aquifers (water-filled spaces between sand, gravel, silt and clay) deep in the ground. Aquifers are replenished by rainwater that infiltrates down from the land surface.

Hetch Hetchy system

The City purchases water from the SFPUC Hetch Hetchy System. SFPUC conducts watershed sanitary surveys for the Hetch Hetchy source annually and local water sources every five years. The latest local sanitary survey was completed in 2016 for the period of 2011-2015. The SFPUC conducted a watershed sanitary survey for Upcountry Non-Hetch Hetchy Sources in 2015 as part of its drought response plan efforts. These surveys evaluate the sanitary conditions, water quality, potential contamination sources and the results of watershed management activities, and were completed with support from partner agencies including National Park Service and US Forest Service. These surveys identified wildlife, stock, and human activities as potential contamination sources. You may contact the San Francisco District office of SWRCB-DDW at 510-620-3474 for the review of these reports.

Santa Clara Valley Water District

The Santa Clara Valley Water District provides treated surface water to the Silicon Valley from three water treatment plants. District surface water is mainly imported from the South Bay Aqueduct, Dyer Reservoir, Lake Del Valle, and San Luis Reservoir, which all draw water from the Sacramento - San Joaquin Delta watershed. The District's local water sources include Anderson and Calero Reservoirs.

The District's 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. The imported sources are also vulnerable to wastewater treatment plant discharges, seawater intrusion, and wild fires in open space areas. In addition, local sources are also vulnerable to potential contamination from commercial stables and historic mining practices. No contaminant associated with any of these activities has been detected in the District's treated water. The water treatment plants provide multiple barriers for physical removal of contaminants and disinfection of pathogens. For more information, visit the District website ValleyWater.org.

City of Santa Clara Water Quality Table

	UNIT	MCL	State PHG/ Fed (MCLG)	analysis for City SC Well Water range	analysis for City SC Well Water average	analysis for SCVWater District range	analysis for SCVWater District average	analysis for HETCH HETCHY range	analysis for HETCH HETCHY average or [max]	Common Sources of:
PRIMARY STANDARDS FOR SOURCE WATER SAMPLING:										
MICROBIOLOGICAL										
giardia lamblia	cyst/L	TT	0	NA	NA	NA	NA	0 - 0.22	0.05	naturally present in environment
RADIOACTIVITY										
Gross Alpha	pCi/L	15	(0)	ND	ND	ND	ND	ND	ND	erosion of natural deposits
INORGANIC CHEMICAL										
Arsenic	PPB	10	0.004	ND - 4	1.34	ND	ND	ND	ND	erosion of nat'l deposit/runoff
Barium	PPM	1	2	.082 - .15	0.11	ND	ND	ND	ND	erosion of nat'l deposit/oil drilling
Chromium	PPB	50	(100)	ND - 2.2	1.26	ND	ND	ND	ND	erosion of nat'l deposit/plating
Fluoride	PPM	2	1	.11 - .19	0.12	ND	ND	ND - 0.6	0.2	water additive/erosion of nat'l deposits
Nitrate (as Nitrogen)	PPM	10	10	.37 - 5.8	3.54	ND - 0.6	ND	ND	ND	erosion of nat'l deposit/runoff/leaching
SECONDARY STANDARDS: "CONSUMER ACCEPTANCE CONTAMINENT LEVELS"										
Aluminum	PPB	200	NA	ND	ND	ND	ND	ND - 99	ND	natural deposits/treatment process
Chloride	PPM	500	NA	26 - 55	41.8	24 - 77	46	< 3 - 17	9	runoff/leaching nat'l deposits/seawater
Color	UNITS	15	NA	ND	ND	< 2.5 - 3	1	< 5 - 13	< 5	naturally occuring organic material
Iron	PPB	300	NA	ND - .035	0.013	ND	ND	ND	ND	leaching from nat'l deposits/ind. waste
Manganese	PPB	50	NA	ND - 11	2.2	ND	ND	ND	ND	leaching from natural deposits
Odor	UNITS	3	NA	ND - 1	0.4	1	1	ND	ND	naturally occuring organic material
Sp. Conductance	uS/cm	1600	NA	520 - 700	610	360 - 530	426	29 - 256	168	subst.forming ions/seawater intrusion
Sulfate	PPM	500	NA	37 - 50	44	50.7 - 59	54.9	.9 - 34	17	runoff/leaching nat'l deposits/ind. waste
Tot.Dissolved Solids	PPM	1000	NA	320 - 440	376	202 - 272	231	< 20 - 122	76	runoff/leaching from natural deposits
Turbidity	NTU	5	NA	ND - .75	0.18	ND - 0.27	ND	0.3 - 1.1 [1]	[2.7][2]	soil runoff
CONSUMER INFORMATION										
pH	UNITS	NS	NS	6.7 - 7.5	7.0	7.7 - 7.8	7.8	7.4 - 9.8	9.2	
Alkalinity (as CaCO3)	PPM	NS	NS	180 - 220	194	48 - 89	69	6 - 131	52	
Ammonia	PPM	NS	NS	NA	NA	0.44 - 0.62	0.5	NA	NA	
Bicarbonate Alkalinity (as HCO3)	PPM	NS	NS	220 - 270	236	58 - 109	84	6 - 131	52	
Boron	PPB	NS	NS	ND	ND	ND - 123	ND	ND - 203	ND	
Bromide	PPM	NS	NS	ND	ND	<0.05 - 0.07	< 0.05	< 5 - 30	13	
Calcium (as Ca)	PPM	NS	NS	38 - 78	63	13 - 25	20	2 - 31	16	
Carbonate (as CO3)	PPM	NS	NS	ND - 2	0.4	ND	ND	ND	ND	
Chlorate	PPB	NS	NS	ND	ND	71 - 130	91	51 - 180	86	
Hardness	PPM	NS	NS	140 - 310	236	68 - 114	96	7 - 82	51	
Hexavalent Chromium	PPB	NS[3]	0.02	.035 - 2.3	1.18	ND	ND	ND	ND	
Lithium	PPB	NS	NS	NA	NA	< 5 - 6.2	< 5	NA	NA	
Magnesium	PPM	NS	NS	11 - 32	19.6	8 - 13	11	0.2 - 11	6.2	
Molybdenum	PPB	NS	NS	NA	NA	< 1 - 1	< 1	NA	NA	
Potassium	PPM	NS	NS	ND - 1..2	0.5	2.2 - 3.4	2.7	0.2 - 2	1	
Silica	PPM	NS	NS	ND	ND	10 - 13	11	4.6 - 12	7.6	
Sodium	PPM	NS	NS	21 - 57	30.2	29 - 57	43	2.3 - 31	18	
Strontium	PPB	NS	NS	NA	NA	NA	NA	12 - 234	111	

PRIMARY STANDARDS AS MEASURED IN CITY OF SANTA CLARA DISTRIBUTION SYSTEM:							
MICROBIOLOGICAL							
Total Coliform	% pos (+)	5.00%	(0)	0 - 4.1%	< 5%		naturally present in environment
DISINFECTION BYPRODUCTS, RESIDUALS, PRECURSORS							
Trihalomethanes	PPB	80	NA	0 - 51	[50.3]		byproduct of drinking water disinfection
Haloacetic Acids	PPB	60	NA	0 - 48	[36]		byproduct of drinking water disinfection
Chlorine residual	PPM	4	4	0.0 - 3.3	0.76		drinking water disinfectant
INORGANIC CHEMICAL as measured at 50 Residential Taps in 2016:							
Copper	PPM	AL = 1.3	0.3	90th percentile = 0.380ppm		Number Exceeded = 0	corrosion of plumbing systems
Lead	PPB	AL = 15	0.2	90th percentile = 3.2 ppb		Number Exceeded = 0	corrosion of plumbing systems
SCHOOLS REQUESTING LEAD TESTING IN 2017: 0[4]							
Lead	PPB	AL = 15	0.2	NA	NA		corrosion of plumbing systems

UNREGULATED CONTAMINANTS AS MEASURED IN CITY OF SANTA CLARA DISTRIBUTION SYSTEM:

		NOTIFICATION LEVEL		
Chlorodifluoromethane	PPB	NA	0 - 0.58	0.17
Chlorate	PPB	800	0 - 98	38.2
Chromium	PPB	NA	0 - 4.9	1.6
Hexavalent Chromium	PPB	NA	0.03 - 4.1	1.5
Molybdenum	PPB	NA	0 - 3.7	2.0
Strontium	PPB	NA	260 - 430	315
Vanadium	PPB	50	2.8 - 5.3	4.1

[1] Turbidity is measured every four hours. These are monthly average turbidity values.
[2] The highest turbidity of the unfiltered Hetch Hetchy water in 2017 was 2.7 NTU.
[3] There is currently no MCL for hexavalent chromium. The previous MCL of 10 mg/L was withdrawn on September 11, 2017.
[4] While no schools made requests in 2017, many schools are planning for 2018 lead testing

Definitions and Notes:

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

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.

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 U.S. Environmental Protection Agency.

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.

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

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.

UNREGULATED CONTAMINANTS = Unregulated contaminant monitoring helps EPA and State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

pCi/L = picocuries per liter (a measure of radioactivity)

PPM = Parts Per Million

PPB = Parts Per Billion

P = Present

A = Absent

<DLR = less than Detection Limit for Reporting

DISTRIBUTION SYSTEM = drinking water delivery system

RESIDENTIAL TAPS = household faucets used for lead and copper sampling

DISINFECTION BYPRODUCTS = chemical by products of disinfection

SECONDARY STANDARDS = secondary MCLs are set to protect the aesthetics of drinking water

NTU = Nephelometric Turbidity Unit. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.

uS/cm = microSiemens per centimeter

NA = not applicable or available

ND = not detected

NS = no standard

Copper and Lead Tap Monitoring was performed in August 2016.

VANADIUM = the babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals

HARDNESS = the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.

SODIUM = refers to the salt present in the water and is generally naturally occurring.

ATTENTION

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

Chi tiết này thật quan trọng.
Xin nhờ người dịch cho quý vị.

Attencion: Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

此份有關你的食水報告,內有重要資料和訊息,請找他人為你翻譯及解釋清楚。

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시요.

यह सूचना महत्वपूर्ण है ।
कृपा करके किसी से :सका अनुवाद करायें ।

ਇਹ ਸੂਚਨਾ ਮਹਤੱਵਪੂਰਣ ਹੈ।
ਕ੍ਰਿਪਾ ਕਰਕੇ ਕਿਸੀ ਤੋ ਇਸ ਦਾ ਅਨੁਵਾਦ ਕਰਾਉ।

この報告書には上水道に関する重要な情報が記されております。翻訳を御依頼なされるか、内容をご理解なさっておられる方にお尋ね下さい。

Water Quality Monitoring

The City completed a Drinking Water Source Assessment and Protection Program for the groundwater sources in August 2002 and submitted it to the State Board in December 2002. A copy of the program is available at the City's Water Utility offices at 1500 Warburton Ave. You may request a summary of the individual assessments by contacting the Water Utility at 408-615-2000 or by email at water@SantaClaraCA.gov.

The City's groundwater sources are considered most vulnerable to contamination by: leaking underground tanks containing fuel or dry-cleaning chemicals; old, unrecorded septic systems; storm drain dry wells located at various places around the City; many old, shallow, private wells, abandoned and not properly destroyed; and possibly some contaminants from a small landfill dump left over from the early years of the 20th century.

Lead

There have been no exceedances of the ACTION LEVEL for lead in the City of Santa Clara groundwater sources or supplies purchased from other agencies. It is possible for lead levels in your home to be higher than other homes in the community because of plumbing materials used in the original construction of your home. 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 of Santa Clara 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 1-800-426-4791 or at EPA.gov/lead.

Nitrates

Nitrate in drinking water at levels above 10 mg/L is a health risk for infants less than six months old. 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 10 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.

Cryptosporidium and Giardia

Cryptosporidiosis is a disease of the intestinal tract brought on by a parasitic microbe (a protozoan) called Cryptosporidium. The disease is transmitted through contaminated water, food or direct contact with human or animal waste. If you are healthy with a normal immune system, the flu-like symptoms usually last about two weeks. Symptoms include diarrhea, stomach cramps, upset stomach and slight fever. However, immuno-compromised people, infants, small children, and the elderly are at greater risk of developing life-threatening illness.

The water purchased by the City from the SFPUC Hetch Hetchy system has been tested for Cryptosporidium and Giardia. The source waters and treated waters are tested at least monthly and occasionally show very low levels of Cryptosporidium in the waters serving the East Bay, South Bay and San Francisco Peninsula. Giardia, another parasitic organism causing similar symptoms, is monitored with the same frequency and very low levels are occasionally detected in the same source waters.

The general public is at very low risk and there have been no reported cases of Cryptosporidiosis and Giardiasis attributed to the City's public water supply. This advisory applies to water received from the Hetch Hetchy system in the area of the City north of Highway 101. The CDPH issues guidance for people with serious immune system problems. Currently, available guidance from the state and county health agencies recommends that people with such conditions consult with their doctor or primary health care provider about preventing Cryptosporidium and Giardia infection from all potential sources. Water consumers may choose to boil their drinking water at a rolling boil for at least one minute as an extra precaution.

For information about Cryptosporidiosis and Giardiasis, or copies of available guidance, contact the Santa Clara County Department of Environmental Health at 408-918-3400. You may also contact the USEPA Drinking Water Hotline at 1-800-426-4791.

What are the sources of tap water?

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over 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 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 resulting 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

In order to ensure that tap water is safe to drink, the U.S Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

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's Safe Drinking Water Hotline at 1-800-426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this public notice in a public place or distributing copies by hand or mail.

FOR ADDITIONAL INFORMATION ON WATER QUALITY

City of Santa Clara
1500 Warburton Ave.
Santa Clara, CA 95050
408-615-2200
SantaClaraCA.gov

Water Utility
1500 Warburton Ave.
Santa Clara, CA 95050
Office hours: 8 a.m. – 5 p.m.,
Monday-Friday
408-615-2000

Water Billing Questions
408-615-2300

Water Quality Report Questions
Mike Vasquez
408-615-2000
mvasquez@santaclaraca.gov

Water Emergencies
408-615-2000 Monday-Friday, 8 a.m.-5 p.m.
408-615-5640 other days and times

Water Conservation
Save20gallons.org
408-630-2554 – Water Conservation Hotline and Rebate Information

Sign up for a free Water-Wise House Call from Santa Clara Valley Water District by calling 1-800-548-1882

Web Resources
If you would like to learn more about drinking water quality, treatment and regulation, contact these organizations:

American Water Works Association
awwa.org

State Water Resources Control Board, Division of Drinking Water waterboards.ca.gov/drinking_water/programs/index.shtml

United States Environmental Protection Agency
water.epa.gov/drink/index.cfm

San Francisco Public Utilities Commission, Water Quality Bureau
sfwater.org/index.aspx?page=163

Santa Clara Valley Water District
valleywater.org

Water Education Foundation
watereducation.org

Water Quality Information Center
wquic.nal.usda.gov

Public Input
To provide input on decisions that affect drinking water quality, you are welcome to provide input to the Santa Clara City Council at a Council meeting or in advance via mail, email or phone contact. A list of all City Council meetings, agenda items and study sessions can be viewed on the City website SantaClaraCa.gov.

eNotify
Sign up to receive news from the Water Utility
SantaClaraCA.gov

WATER QUALITY

CONSUMER CONFIDENCE REPORT 2019

City of Santa Clara
The Center of What's Possible

Report contains water quality monitoring results

The City of Santa Clara is committed to providing you, the water consumer, with a safe and reliable supply of high quality drinking water. Each year we publish an annual water quality report known as the Consumer Confidence Report. This is our 31st annual report on water quality. It contains the latest water quality monitoring results obtained through the end of calendar year 2018. It answers some of the most common water quality questions asked by our customers. We hope it will provide the facts and perspectives you need to make an informed evaluation of your tap water.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

This report has been prepared in accordance with the requirements of the Safe Drinking Water Act and State regulations. Although the water you receive is tested for over 100 potential contaminants and 48 other parameters, the majority of the potential contaminants are never detected. To simplify the report, only the constituents that were detected in at least one water source appear in the water quality table. We are also required by the State to provide additional information about certain constituents that appear on the water quality table even though the water meets all applicable drinking water standards. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

Santa Clara water comes from three sources

The City of Santa Clara has three separate sources of drinking water. Often, these sources are used interchangeably or are blended together. Altogether these sources provide an average of 18 million gallons of water per day to the homes, businesses, industries and institutions of Santa Clara. In 2018, about 42% of our water was treated surface water purchased from the Santa Clara Valley Water District (Valley Water), imported from the Sacramento-San Joaquin Delta, and from the San Francisco Public Utility Commission's (SFPUC) Hetch-Hetchy System, imported from the Sierra Nevada Mountains.

See map of water sources on page 2

Valley Water serves primarily the southwesterly portion of the City. SFPUC Hetch-Hetchy water typically serves the area north of Highway 101. The remaining 58% is pumped from the City's system of 21 active wells serving the rest of Santa Clara.

Information and guidance for people with compromised immune systems

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 about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

Drinking water must meet standards

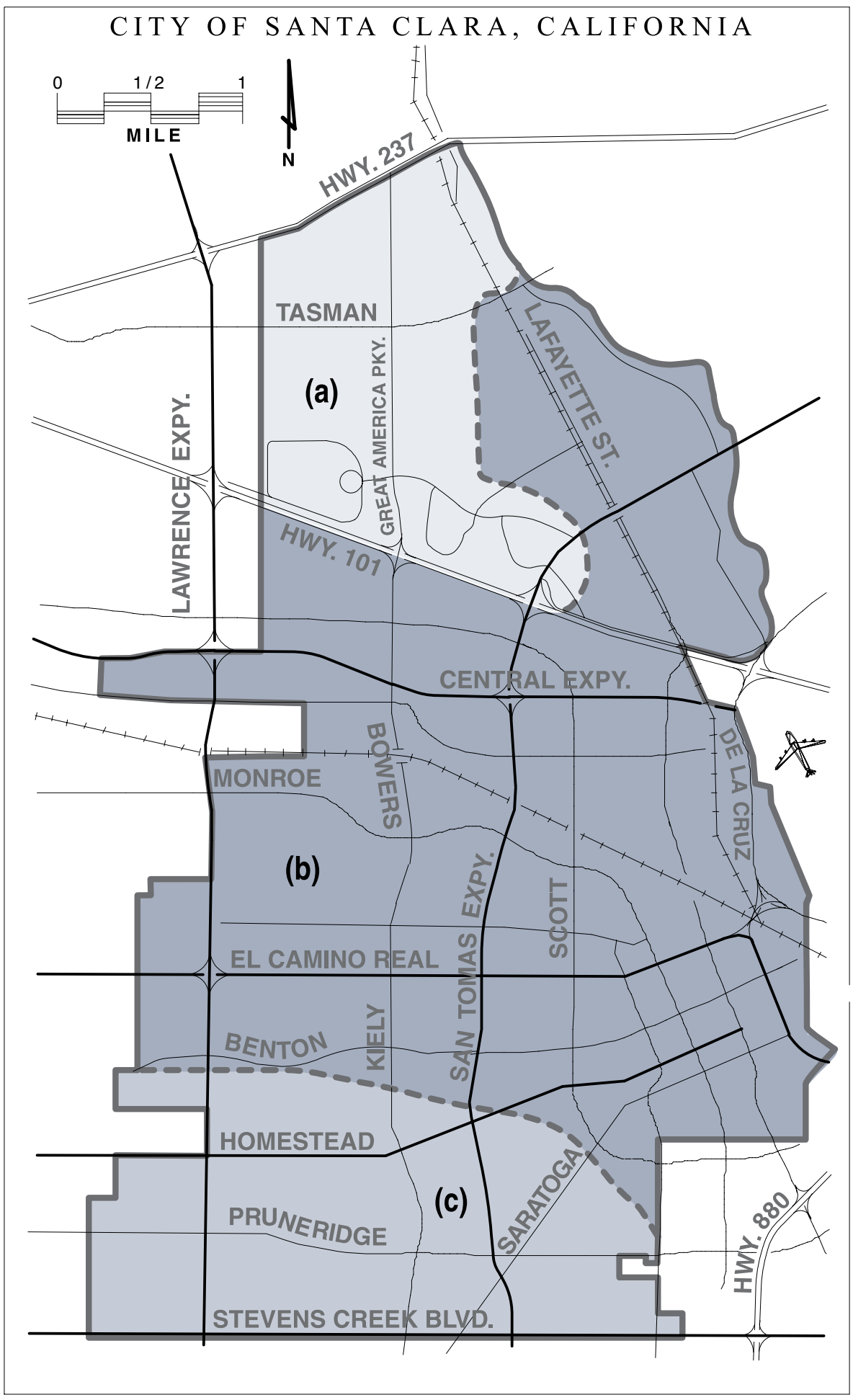
The quality of drinking water is carefully regulated by the federal government. In 1974, Congress passed the Safe Drinking Water Act, requiring the USEPA to establish uniform standards for drinking water. The Safe Drinking Water Act was further amended in 1986 and 1996, adding even more stringent standards. In California, these standards are enforced by the State Water Resources Control Board Division of Drinking Water.

There are two types of drinking water standards. **PRIMARY STANDARDS** are designed to protect public health. These standards specify the limits, called "Maximum Contaminant Levels" for substances in water that may be harmful to humans or affect their health if consumed in large quantities. **SECONDARY STANDARDS** are based on aesthetic qualities of water such as color, taste and odor. These standards specify limits for substances that may affect consumer acceptance of the water. Both Primary and Secondary Standards are listed in this report.

We take great pride in delivering the safest and highest quality water available.

It is important to the City of Santa Clara that you, the water consumer, have current and factual information about your water supply. In this latest issue of our report, we hope to further your understanding and strengthen your confidence in the quality and integrity of the water supplied to you by the City of Santa Clara.

If you have any questions about the information in this report, or if you want to participate in water quality related issues, call the Water Utility at 408-615-2000. You may also attend City Council meetings at 7 p.m. in the Council Chambers of City Hall, 1500 Warburton Ave. For the latest Council meeting information, visit the City website SantaClaraCA.gov/councilmeetings.



(a) - SFPUC Hetch Hetchy System
(b) - City of Santa Clara Groundwater
(c) - SCVWD Treated Surface Water

Some Santa Clara water is fluoridated

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Santa Clara Valley Water District

The Santa Clara Valley Water District provides treated surface water to the Silicon Valley, now known as Valley Water, from three water treatment plants. Valley Water surface water is mainly imported from the South Bay Aqueduct, Dyer Reservoir, Lake Del Valle, and San Luis Reservoir, which all draw water from the Sacramento - San Joaquin Delta watershed. Valley Water's local water sources include Anderson and Calero Reservoirs.

Valley Water's 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. The imported sources are also vulnerable to wastewater treatment plant discharges, seawater intrusion, and wild fires in open space areas. In addition, local sources are also vulnerable to potential contamination from commercial stables and historic mining practices. No contaminant associated with any of these activities has been detected in Valley Water's treated water. The water treatment plants provide multiple barriers for physical removal of contaminants and disinfection of pathogens. For more information, visit Valley Water's website ValleyWater.org.

School lead testing

As of January 2018, State law requires water suppliers to sample all schools on public land by mid-2019. As of April 2019, City staff has completed all required sampling (172 samples at 33 schools) and provided results to the school districts following the testing. All samples, with the exception of one sample taken at John Sutter Elementary School, were well below the EPA action level for lead of 15 parts per billion (ppb). The fixture was immediately taken out of service and replaced by Santa Clara Unified School District staff. Resampling at the site resulted in a ND (no-detect) for lead. Contact your school administration for information about lead testing and results for your local school. For further information, visit Waterboards.CA.gov/drinking_water/certlic/drinkingwater/leadsamplinginschools.html.

City of Santa Clara Water Quality Table

	UNIT	MCL	State PHG/ Fed (MCLG)	analysis for City SC Well Water range	average	analysis for SCVWater District range	average	analysis for HETCH HETCHY range	average or [max]	Common Sources of:
PRIMARY STANDARDS FOR SOURCE WATER SAMPLING:										
MICROBIOLOGICAL										
giardia lamblia	cyst/L	TT	0	NA	NA	ND - 0.1	ND	ND - 0.024	0.03	naturally present in environment
RADIOACTIVITY										
Gross Alpha	pCi/L	15	(0)	ND	ND	ND	ND	ND	ND	erosion of natural deposits
INORGANIC CHEMICAL										
Aluminum	PPM	1	0.6	ND - 0.073	0.008	ND	ND	ND	ND	natural deposits/treatment process
Arsenic	PPB	10	0.004	ND - 2.1	0.4	ND	ND	ND	ND	erosion of nat'l deposit/runoff
Barium	PPM	1	2	0.088 - 0.16	0.12	ND	ND	ND	ND	erosion of nat'l deposit/oil drilling
Chromium	PPB	50	(100)	ND - 3.7	1.1	ND	ND	ND	ND	erosion of nat'l deposit/plating
Fluoride	PPM	2	1	0.11 - 0.16	0.14	ND - 0.12	ND	ND - 0.7	0.3	water additive/erosion of nat'l deposits
Nitrate (as Nitrogen)	PPM	10	10	0.49 - 5.5	3.51	ND - 0.7	ND	ND	ND	erosion of nat'l deposit/runoff/leaching
SECONDARY STANDARDS: "CONSUMER ACCEPTANCE CONTAMINENT LEVELS"										
Aluminum	PPB	200	NA	ND - 73	8.1	ND	ND	ND	ND	natural deposits/treatment process
Chloride	PPM	500	NA	19 - 47	35.9	42 - 70	59	< 3 - 17	8.9	runoff/leaching nat'l deposits/seawater
Color	UNITS	15	NA	ND	ND	ND	ND	< 5 - 7	< 5	naturally occuring organic material
Iron	PPB	300	NA	ND - 0.12	0.01	ND	ND	ND	ND	leaching from nat'l deposits/ind. waste
Manganese	PPB	50	NA	ND - 8	1.7	ND	ND	ND	ND	leaching from natural deposits
Odor	UNITS	3	NA	ND - 2	0.4	1	1	ND	ND	naturally occuring organic material
Sp. Conductance	uS/cm	1600	NA	470 - 690	591	340 - 511	445	29 - 221	154	subst.forming ions/seawater intrusion
Sulfate	PPM	500	NA	23 - 50	37	48.6 - 75.3	58.2	0.9 - 29	16	runoff/leaching nat'l deposits/ind. waste
Tot.Dissolved Solids	PPM	1000	NA	290 - 430	371	226 - 270	258	< 20 - 144	82	runoff/leaching from natural deposits
Turbidity	NTU	5	NA	ND - 1.5	0.2	0.01 - 0.24	0.04	0.3 - 0.8 [1]	[1.8][2]	soil runoff
CONSUMER INFORMATION										
pH	UNITS	NS	NS	7.1 - 7.5	7.3	7.7 - 7.8	7.8	8.9 - 9.8	9.4	
Alkalinity (as CaCO3)	PPM	NS	NS	160 - 240	203	45 - 88	68	< 3 - 132	51	
Ammonia (Total)	PPM	NS	NS	NA	NA	0.49 - 0.52	0.51	NA	NA	
Bicarbonate Alkalinity (as HCO3)	PPM	NS	NS	190 -290	247	55 - 108	83	NA	NA	
Boron	PPB	NS	NS	NA	NA	112 - 205	147	ND - 104	ND	
Bromide	PPM	NS	NS	NA	NA	<0.05 - 0.08	< 0.05	< 5 - 27	7	
Calcium (as Ca)	PPM	NS	NS	40 - 82	64	12 - 24	18	2.9 - 18	11	
Carbonate (as CO3)	PPM	NS	NS	ND - 2.1	0.2	ND	ND	ND	ND	
Chlorate	PPB	NS	NS	NA	NA	65 - 88	77	42 - 230	124	
Hardness	PPM	NS	NS	150 - 300	237	58 - 117	92	15 - 68	47	
Hexavalent Chromium	PPB	NS	0.02	0.06 - 3.7	1.45	ND	ND	NA	NA	
Magnesium	PPM	NS	NS	12 - 28	19	7 - 14	11	< 0.2 - 6.2	4	
Molybdenum	PPB	NS	NS	NA	NA	1 - 2	1	NA	NA	
Phosphate	PPM	NS	NS	NA	NA	1.09 - 1.55	1.27	NA	NA	
Potassium	PPM	NS	NS	ND - 1.1	0.6	1.8 - 3.4	2.7	0.2 - 1.0	0.6	
Silica	PPM	NS	NS	NA	NA	10 - 14	11	2.8 - 7.1	5	
Sodium	PPM	NS	NS	23 - 44	34	39 - 65	49	2.3 - 20	14	
Strontium	PPB	NS	NS	NA	NA	NA	NA	12 - 199	99	
Temperature	Deg. C	NS	NS	12 - 24	18	12 - 22	18	NA	NA	
Total Organic Carbon	PPM	NS	NS	NA	NA	1.3 - 2.7	1.9	1.2 - 2.9	2.2	

PRIMARY STANDARDS AS MEASURED IN CITY OF SANTA CLARA DISTRIBUTION SYSTEM:	Units	MCL	State MCL (Fed PHG)	Range	Average		Common Sources of:
MICROBIOLOGICAL							
Total Coliform	% pos (+)	5.00%	(0)	0 - 2.9%	< 5%		naturally present in environment
DISINFECTION BYPRODUCTS, RESIDUALS, PRECURSORS							
Trihalomethanes	PPB	80	NA	0 - 50	[39.5]		byproduct of drinking water disinfection
Haloacetic Acids	PPB	60	NA	0 - 43	[34.8]		byproduct of drinking water disinfection
Chlorine residual	PPM	4	4	0.0 - 3.0	1.03		drinking water disinfectant
INORGANIC CHEMICAL as measured at 50 Residential Taps in 2016:							
Copper	PPM	AL = 1.3	0.3	90th percentile = 0.380ppm		Number Exceeded = 0	corrosion of plumbing systems
Lead	PPB	AL = 15	0.2	90th percentile = 3.2 ppb		Number Exceeded = 0	corrosion of plumbing systems
SCHOOLS REQUESTING LEAD TESTING IN 2018: 33 Schools (172 samples taken)							
Lead	PPB	AL = 15	0.2	90th percentile = ND		Number Exceeded = 1[3]	corrosion of plumbing systems

UNREGULATED CONTAMINANTS AS MEASURED IN CITY OF SANTA CLARA DISTRIBUTION SYSTEM:	Units	Notification Level	Range	Average
Chlorodifluoromethane	PPB	NA	ND - 0.60	0.1
Chlorate	PPB	800	ND - 300	86.2
Chromium	PPB	NA	ND - 4.9	0.6
Hexavalent Chromium	PPB	NA	ND - 4.1	1.1
Molybdenum	PPB	NA	ND - 5.0	0.9
Strontium	PPB	NA	ND - 440	154
Vanadium	PPB	50	ND - 5.9	1.6
Manganese	PPB	50	ND - 8.8	1.7
Total Haleoacetic Acids (9)	PPB	NA	ND - 58	23.6

[1] Turbidity is measured every four hours. These are monthly average turbidity values.
[2] The highest turbidity of the unfiltered Hetch Hetchy water in 2018 was 1.8 NTU.
[3] John Sutter Elementary - 26ppb. Repeat sampling following plumbing repairs was non-detect for lead.

Definitions and Notes:

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

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.

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 U.S. Environmental Protection Agency.

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.

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

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.

UNREGULATED CONTAMINANTS = Unregulated contaminant monitoring helps EPA and State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

pCi/L = picocuries per liter (a measure of radioactivity)

PPM = Parts Per Million

PPB = Parts Per Billion

P = Present

A = Absent

<DLR = less than Detection Limit for Reporting

DISTRIBUTION SYSTEM = drinking water delivery system

RESIDENTIAL TAPS = household faucets used for lead and copper sampling

DISINFECTION BYPRODUCTS = chemical by products of disinfection

SECONDARY STANDARDS = secondary MCLs are set to protect the aesthetics of drinking water

NTU = Nephelometric Turbidity Unit. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.

uS/cm = microSiemens per centimeter

NA = not applicable or available

ND = not detected

NS = no standard

Copper and Lead Tap Monitoring was performed in August 2016.

VANADIUM = the babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals

HARDNESS = the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.

SODIUM = refers to the salt present in the water and is generally naturally occurring.

ATTENTION

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

Chi tiết này thật quan trọng.
Xin nhờ người dịch cho quý vị.

Attencion: Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

此份有關你的食水報告,內有重要資料和訊息,請找他人為你翻譯及解釋清楚。

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시요.

यह सूचना महत्वपूर्ण है ।
कृपा करके किसी से :सका अनुवाद करायें ।

ਇਹ ਸੂਚਨਾ ਮਹਤੱਵਪੂਰਣ ਹੈ।
ਕ੍ਰਿਪਾ ਕਰਕੇ ਕਿਸੀ ਤੋ ਇਸ ਦਾ ਅਨੁਵਾਦ ਕਰਾਉ।

この報告書には上水道に関する重要な情報が記されております。翻訳を御依頼なされるか、内容をご理解なさっておられる方にお尋ね下さい。

Water Quality Monitoring

The City completed a Drinking Water Source Assessment and Protection Program for the groundwater sources in August 2002 and submitted it to the State Board in December 2002. A copy of the program is available at the City's Water Utility offices at 1500 Warburton Ave. You may request a summary of the individual assessments by contacting the Water Utility at 408-615-2000 or by email at water@SantaClaraCA.gov.

The City's groundwater sources are considered most vulnerable to contamination by: leaking underground tanks containing fuel or dry-cleaning chemicals; old, unrecorded septic systems; storm drain dry wells located at various places around the City; many old, shallow, private wells, abandoned and not properly destroyed; and possibly some contaminants from a small landfill dump left over from the early years of the 20th century.

Lead

There have been no exceedances of the ACTION LEVEL for lead in the City of Santa Clara groundwater sources or supplies purchased from other agencies. It is possible for lead levels in your home to be higher than other homes in the community because of plumbing materials used in the original construction of your home. 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 of Santa Clara 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 1-800-426-4791 or at EPA.gov/lead.

Nitrates

Nitrate in drinking water at levels above 10 mg/L is a health risk for infants less than six months old. 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 10 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.

Cryptosporidium and Giardia

Cryptosporidiosis is a disease of the intestinal tract brought on by a parasitic microbe (a protozoan) called Cryptosporidium. The disease is transmitted through contaminated water, food or direct contact with human or animal waste. If you are healthy with a normal immune system, the flu-like symptoms usually last about two weeks. Symptoms include diarrhea, stomach cramps, upset stomach and slight fever. However, immuno-compromised people, infants, small children, and the elderly are at greater risk of developing life-threatening illness.

The water purchased by the City from the SFPUC Hetch Hetchy system has been tested for Cryptosporidium and Giardia. The source waters and treated waters are tested at least monthly and occasionally show very low levels of Cryptosporidium in the waters serving the East Bay, South Bay and San Francisco Peninsula. Giardia, another parasitic organism causing similar symptoms, is monitored with the same frequency and very low levels are occasionally detected in the same source waters.

The general public is at very low risk and there have been no reported cases of Cryptosporidiosis and Giardiasis attributed to the City's public water supply. This advisory applies to water received from the Hetch Hetchy system in the area of the City north of Highway 101. The California Department of Public Health (916-558-1784) issues guidance for people with serious immune system problems. Currently, available guidance from the state and county health agencies recommends that people with such conditions consult with their doctor or primary health care provider about preventing Cryptosporidium and Giardia infection from all potential sources. Water consumers may choose to boil their drinking water at a rolling boil for at least one minute as an extra precaution.

For information about Cryptosporidiosis and Giardiasis, or copies of available guidance, contact the Santa Clara County Department of Environmental Health at 408-918-3400. You may also contact the USEPA Drinking Water Hotline at 1-800-426-4791.

What are the sources of tap water?

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over 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 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 resulting 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

In order to ensure that tap water is safe to drink, the U.S Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

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's Safe Drinking Water Hotline at 1-800-426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this public notice in a public place or distributing copies by hand or mail.

FOR ADDITIONAL INFORMATION ON WATER QUALITY

City of Santa Clara
1500 Warburton Ave.
Santa Clara, CA 95050
408-615-2200
SantaClaraCA.gov

Water Utility
1500 Warburton Ave.
Santa Clara, CA 95050
Office hours: 8 a.m. – 5 p.m.,
Monday-Friday
408-615-2000

Water Billing Questions
408-615-2300

Water Quality Report Questions
Mike Vasquez
408-615-2000
mvasquez@santaclaraca.gov

Water Emergencies
408-615-2000 Monday-Friday,
8 a.m.-5 p.m.
408-615-5640 other days
and times

Water Conservation
Save20gallons.org
408-630-2554 – Water Conservation Hotline and Rebate Information

Sign up for a free Water-Wise House Call from Valley Water by calling 1-800-548-1882

Web Resources
If you would like to learn more about drinking water quality, treatment and regulation, contact these organizations:

American Water Works Association
awwa.org

State Water Resources Control Board, Division of Drinking Water
waterboards.ca.gov/drinking_water/programs/index.shtml

United States Environmental Protection Agency
water.epa.gov/drink/index.cfm

San Francisco Public Utilities Commission, Water Quality Bureau
sfwater.org/index.aspx?page=163

Valley Water
valleywater.org

Water Education Foundation
watereducation.org

Water Quality Information Center
wquic.nal.usda.gov

Public Input
To provide input on decisions that affect drinking water quality, you are welcome to provide input to the Santa Clara City Council at a Council meeting or in advance via mail, email or phone contact. A list of all City Council meetings, agenda items and study sessions can be viewed on the City website SantaClaraCA.gov.

eNotify
Sign up to receive news from the Water Utility
SantaClaraCA.gov /enotify