



ANNUAL WATER QUALITY REPORT 2018

The San Bruno Water Division is committed to providing our customers with water that meets all state and federal drinking water standards. With highly qualified water operators, San Bruno's top priority is protecting the quality of your water supply.

OUR DRINKING WATER SOURCES AND TREATMENT

The City of San Bruno water system has two supply sources. Surface water from the San Francisco Public Utilities Commission (SFPUC), and groundwater produced by four local wells. These two sources are blended within the distribution system. SFPUC supplies most of San Bruno's average daily demand. The remaining of San Bruno's water supply comes from local groundwater wells from an average depth of 500 feet below ground from a large underground aquifer known as the Westside Basin. The Westside basin serves a large portion of the northern San Mateo Peninsula and extends north of Golden Gate Park in San Francisco.

The majority of San Bruno's water is supplied by the San Francisco Regional Water System (SFRWS), which is owned and operated by the San Francisco Public Utilities Commission (SFPUC), our major water source originates from spring Yosemite National Park snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The well protected Sierra water source is exempt from filtration requirements by the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW). Water from Hetch Hetchy Reservoir receives the following treatment to meet the appropriate drinking water standards for consumption: ultraviolet light and chlorine disinfection, pH adjustment for optimum corrosion control, fluoridation for dental health protection, and chloramination for maintaining disinfectant residual and minimizing the formation of regulated disinfection byproducts.

The Hetch Hetchy water is supplemented with surface water from local watersheds and upcountry non-Hetch Hetchy sources (UNHHS). Rainfall and runoff from the 35,000-acre Alameda Watershed in Alameda and Santa Clara counties are collected in Calaveras Reservoir and San Antonio Reservoir before delivery to the Sunol Valley Water Treatment Plant (SVWTP). Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in Crystal Springs Reservoir, San Andreas Reservoir and Pilarcitos Reservoir, and are delivered to the Harry Tracy Water Treatment Plant. In 2018, the UNHHS was not used. Water at the two treatment plants is subject to filtration, disinfection, fluoridation, optimum corrosion control, and taste and odor removal.

WATER SYSTEM OPERATIONS

Effective and thorough operation and maintenance of San Bruno's distribution system ensures that the water maintains its high quality as it travels through the distribution system to your tap. The disinfectant residual in the water after treatment prevents the re-growth of microbial organisms during storage and transmission of water in the distribution system. Annual flushing of City's water mains and rotation of stored supplies keeps the water fresh and limits the possibility for growth of such organisms.

The City San Bruno Water Division conducts a comprehensive water quality assurance program which included the collection of over fifty samples a month throughout our distribution system. These samples are then sent to a state certified laboratory for testing. All samples collected met or exceeded water quality standards in 2018.



Other water samples are collected periodically to check for levels of lead and copper, disinfection by-products [trihalomethanes and haloacetic acids – THMs and HAAs] and general physical components as required by state and federal regulations.

The San Bruno Water Division daily maintains water quality at our five well facilities, SFPUC turnouts, storage tanks and pump stations throughout the distribution system. These sites are maintained and monitored by the water divisions certified operators and through our computerized Supervisory Control and Data Acquisition (SCADA) system. SCADA provides our water operators with continuous automated control and water quality information twenty-four hours a day.

In addition, The City of San Bruno Water Division, along with the San Mateo County Environmental Health Department administers and manages a cross-connection prevention program to eliminate possible contamination to our drinking water through backflow prevention devices. The program includes yearly testing of all city-owned backflow devices and monitoring of compliance on privately owned back flow devices.

**** A note to residents and business owners who have backflow prevention devices: State regulations require that all backflow prevention devices be tested annually by a certified inspector.***

WATERSHEDS PROTECTION

The SFPUC conducts watershed sanitary surveys for the Hetch Hetchy source annually and the local water sources as well as UNHHS every five years. The latest local sanitary survey was completed in 2016 for the period of 2011-2015. The last watershed sanitary survey for UNHHS was conducted in 2015 as part of the SFPUC's drought response plan efforts. These surveys evaluate the sanitary conditions, water quality, potential contamination sources and the results of watershed management activities. 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 review of these reports.

WATER QUALITY

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure the water delivered to you meets or exceeds federal and state drinking water standards. In 2018, WQD staff conducted more than 57,690 drinking water tests in the source, transmission, and distribution system. This is in addition to the extensive treatment process control monitoring performed by the SFPUC's certified operators and online instruments.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, the USEPA and SWRCB-DDW 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.



FLUORIDATION AND DENTAL FLUOROSIS

Mandated by State law, water fluoridation is a widely accepted practice proven to be safe and effective for preventing and controlling tooth decay. Our fluoride target level in the water is 0.7 milligram per liter (mg/L, or part per million, ppm), consistent with the May 2015 State regulatory guidance on optimal fluoride level. Infants fed formula mixed with water containing fluoride at this level may still have a chance of developing tiny white lines or streaks in their teeth. These marks are referred to as mild to very mild fluorosis, and are often only visible under a microscope. Even in cases where the marks are visible, they do not pose any health risk. The Centers of Disease Control (CDC) considers it safe to use optimally fluoridated water for preparing infant formula. To lessen this chance of dental fluorosis, you may choose to use low-fluoride bottled water to prepare infant formula. Nevertheless, children may still develop dental fluorosis due to fluoride intake from other sources such as food, toothpaste and dental products.

Contact your healthcare provider or SWRCB-DDW if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the SWRCB-DDW website www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml or the CDC website www.cdc.gov/fluoridation.

SPECIAL HEALTH NEEDS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people and infants, can be particularly at risk from infections.

These people should seek advice about drinking water from their healthcare providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline 800-426-4791 or at www.epa.gov/safewater.



CONTAMINANTS AND REGULATIONS

Generally, the sources of drinking water (both tap water and bottled water) include rivers, lakes, oceans, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Such substances are called contaminants, and may be present in source water as:

Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife,

Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming,

Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses,

Organic chemical contaminants, including synthetic and volatile organic chemicals, which 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, which can be naturally occurring or be the result of oil and gas production and mining activities.

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

DRINKING WATER AND LEAD

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There are no known lead service lines in San Bruno. We are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. It is possible that lead levels at your home may be higher than at others in the community as a result of materials used in your home's plumbing.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. You can minimize the potential for lead exposure, when your water has been sitting for several hours, by flushing your tap for 30 seconds to 2 minutes (or until the water temperature has changed) before using water for drinking or cooking. If you are concerned about lead levels in your water, you may wish to have your water tested. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the USEPA's Safe Drinking Water Hotline 800-426-4791, or at www.epa.gov/lead.



LEAD TESTS AT K-12 SCHOOL CAMPUSES IN SAN BRUNO

On Oct. 13, 2017, California Governor Jerry Brown signed legislation (AB 746) making lead testing mandatory for California schools beginning in 2018. The San Bruno Water Division completed lead sampling in all K-12 public schools in 2018. To learn more about the school lead testing program and to check if your school has been tested, please call the City of San Bruno Water Division at (650) 616-7162.

KEY WATER QUALITY TERMS

The following are definitions of key terms referring to standards and goals of water quality noted on the data table.

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

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A water clarity indicator that measures cloudiness of the water, and is also used to indicate the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants.

Cryptosporidium is a parasitic microbe found in most surface water. We regularly test for this waterborne pathogen and found it at very low levels in source water and treated water in 2018. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. Ingestion of *Cryptosporidium* may produce symptoms of nausea, abdominal cramps, diarrhea, and associated headaches. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

SAN BRUNO WATER QUALITY DATA FOR YEAR

The table below lists all 2018 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accord with regulatory guidance. The SFPUC holds a SWRCB-DDW monitoring waiver for some contaminants and therefore their monitoring frequencies are less than annual.

DETECTED CONTAMINANTS	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
TURBIDITY						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.3 - 0.8 ⁽²⁾	[1.8]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU	1 ⁽³⁾	N/A	-	[1]	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	-	Min 95% of samples ≤ 0.3 NTU ⁽³⁾	N/A	99.96% - 100%	-	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU	1 ⁽³⁾	N/A	-	[0.07]	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	-	Min 95% of samples ≤ 0.3 NTU ⁽³⁾	N/A	100%	-	Soil runoff
DISINFECTION BY PRODUCTS AND PRECURSOR						
Total Trihalomethanes	ppb	80	N/A	5.7 - 10.4	[15.7] ⁽⁴⁾	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	.0 - 6.7	[7.4] ⁽⁴⁾	Byproduct of drinking water disinfection
Total Organic Carbon ⁽⁵⁾	ppm	TT	N/A	1.2 - 2.9	2.2	Various natural and man-made sources
MICROBIOLOGICAL						
Total Coliform	-	NoP ≤ 5.0% of monthly samples	(0)	-	[0%]	Naturally present in the environment
<i>Giardia lamblia</i>	cyst/L	TT	(0)	0 - 0.24	0.03	Naturally present in the environment
INORGANICS						
Fluoride (source water) ⁽⁶⁾	ppm	2.0	1	ND - 0.7	0.17 ⁽⁷⁾	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	2.67	[2.8] ⁽⁸⁾	Drinking water disinfectant added for treatment
Nitrate (as Nitrogen, N)	ppm	10	10	ND - 1.5	.82	Runoff / leaching from natural deposits

CONSTITUENTS WITH SECONDARY STANDARDS	Unit	SMCL	PHG	Range	Average	Major Sources of Contaminant
Chloride	ppm	500	N/A	<3 - 120	46.8	Runoff / leaching from natural deposits
Color	unit	15	N/A	<5 - 7	<5	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	N/A	29 - 870	427	Substances that form ions when in water
Sulfate	ppm	500	N/A	0.9 - 86	34	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 534	241	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	ND - 0.3	0.1	Soil runoff

LEAD AND COPPER	Unit	AL	PHG	Range	90th Percentile	Major Sources in Drinking Water
Copper	ppb	1300	300	3.1 - 172 ⁽⁹⁾	82.4	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	< 1.0 - 4.9 (10)	2.4	Internal corrosion of household water plumbing systems

Synthetic Organic Contaminant	Unit	MCL	PHG	Range	Average	Major Sources in Drinking Water
1,2,3 - Trichloropropane	µS/cm	0.005	0.0007	ND	ND	Discharge from industrial and agricultural chemical factories

OTHER WATER QUALITY PARAMETERS	Unit	ORL	Range	Average
Alkalinity (as CaCO ₃)	ppm	N/A	<3 - 190	114
Boron	ppb	1000 (NL)	ND - 104	ND
Bromide	ppb	N/A	<5 - 27	7
Calcium (as Ca)	ppm	N/A	2.9 - 58	27
Chlorate ⁽¹²⁾	ppb	800 (NL)	42 - 230	124
Hardness (as CaCO ₃)	ppm	N/A	15 - 310	137
Magnesium	ppm	N/A	<0.2 - 41	16.6
pH	-	N/A	7.7 - 9.8	8.6
Potassium	ppm	N/A	0.2 - 3.6	2.0
Silica	ppm	N/A	2.8 - 7.1	5.0
Sodium	ppm	N/A	2.3 - 61	35
Strontium	ppb	N/A	12 - 199	99
Tertiary Butyl Alcohol (TBA)	µS/cm	N/A	ND - 4.2	1

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

Footnotes:

- (1) All results met State and Federal drinking water health standards.
- (2) These are monthly average turbidity values measured every 4 hours daily.
- (3) There is no turbidity MCL for filtered water. The limits are based on the TT requirements for filtration systems.
- (4) This is the highest locational running annual average value.
- (5) Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only.
- (6) In May 2015, the SWRCB recommended an optimal fluoride level of 0.7 ppm be maintained in the treated water. In 2018, the range and average of the fluoride levels were 0.6 ppm - 1.0 ppm and 0.7 ppm, respectively.
- (7) The natural fluoride level in the Hetch Hetchy supply was ND. Elevated fluoride levels in the SVWTP and HTWTP raw water are attributed to the transfer of fluoridated Hetch Hetchy water into the local reservoirs.
- (8) This is the highest running annual average value.
- (9) The most recent Lead and Copper Rule monitoring was in 2016. None of 40 site samples collected at consumer taps had concentrations above the corresponding A
- (10) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFPUC for water disinfection.

Note: Additional water quality data may be obtained by calling the City of San Bruno at 650-616-7174.

UNREGULATED CONTAMINANT MONITORING RULE

The fourth Unregulated Contaminant Monitoring Rule (UCMR4) was published in the Federal Register by the United States Environmental Protection Agency (USEPA) in December 2016, requiring that all large drinking water systems serving more than 10,000 customers—as well as 800 randomly selected small drinking water systems serving 25-10,000 customers—monitor for 30 unregulated chemical contaminants between 2018 and 2020. USEPA will use the data from UCMR4 to determine future regulations to protect public health.

The City of San Bruno Water Division completed the UCMR4 monitoring in 2018. Only 7 of the 30 contaminants were detected at very low levels as reported in the following table. Haloacetic Acids are a byproduct of the disinfection process and is a common contaminant found in the treatment facilities throughout the nation.

UCMR4 Sampling Results 2018

Detected Contaminants	Unit	MRL	Range	Average	Typical Sources in Drinking Water
Metals					
Manganese	ug/l	0.4	.45 - 15	5.38	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Semivolatile Chemicals					
Butylated hydroxyanisole	ug/l	0.03	.095 - .096	0.1	Used as a food additive (antioxidant)
O-toluidine	ug/l	0.007	.097 - .1	0.099	Used in the production of dyes, rubber, pharmaceuticals and pesticides
Quinoline	ug/l	0.02	.099 - .11	0.105	Used as a pharmaceutical (anti-malarial) and flavoring agent produced as a chemical intermediate; component of coal
Brominated Haloacetic Acids					
HAA5	ug/l	N/A	6.18 - 19.02	8.67	Byproduct of dinking water disinfection
HAA6Br	ug/l	N/A	3.59 - 6.21	5.48	Byproduct of dinking water disinfection
HAA9	ug/l	N/A	11.18 - 22.22	13.47	Byproduct of dinking water disinfection

Key terms; MRL - Minimum Reporting Level. MRL was established by the EPA. UG/L - Micrograms per Liter

TASTE AND ODOR TREATMENT AT SVWTP

In response to an increase in the magnitude and frequency of algal blooms in Calaveras Reservoir and San Antonio Reservoir, the SFPUC initiated a taste and odor (T&O) control program for the SVWTP in 2018. The program will address seasonal taste and odor resulting from algal blooms in the reservoirs. The first component of this program is to a Powdered Activated Carbon facility to mitigate the occurrence of taste and odor compounds. A secondary benefit of using carbon for treatment will reduce the color of the water and formation of disinfection byproducts. The long-term component of the program is an ozonation treatment facility that is currently in design phase.

HOW CAN THE PUBLIC BE INVOLVED?

City of San Bruno Council meetings begin at 7:00 PM on the second and fourth Tuesdays of each month and are open to the public. Meetings are held at the San Bruno Senior Center located at 1555 Crystal Springs Road.

This report contains important information about our drinking water. Please contact the City of San Bruno Water Division at (650) 616-7162, or by mail at City of San Bruno Water Division, 567 El Camino Real, San Bruno, CA 94066-4247. A copy of the 2017 Consumer Confidence Report will also be posted on the City's website at www.sanbruno.ca.gov.

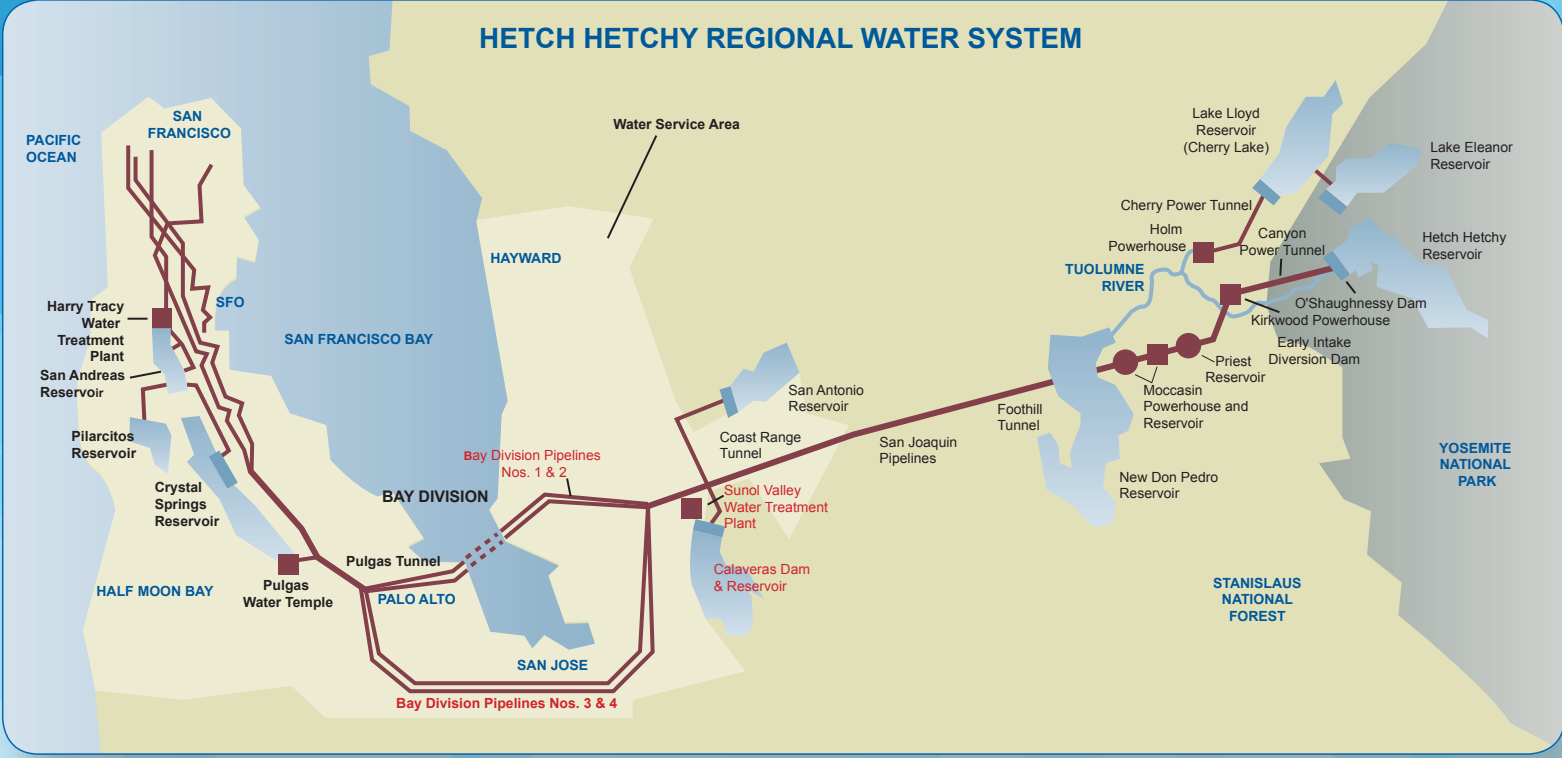
Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse City of San Bruno Water Division at (650) 616-7162 para asistirlo en español con alguien que lo entienda bien.

此份水質報告，內有重要資訊。
請找他人為你翻譯和解說清楚。

567 El Camino Real
San Bruno, CA 94066



HETCH HETCHY REGIONAL WATER SYSTEM



PRSR STD
 U.S. Postage
 PAID
 San Bruno, CA
 Permit #84

City of San Bruno
Public Works Department
Water Division
 567 El Camino Real
 San Bruno, CA 94066-4247