



# ST. HELENA WATER ENTERPRISE Consumer Confidence Report

# 2013

## WATER QUALITY REPORT

### INTRODUCTION

The City of St. Helena is committed to reliably serving safe water that meets the highest drinking water quality standards. The City produces water from two water treatment plants. One plant treats surface water from Bell Canyon Reservoir and the other treats groundwater from two deep wells. The water treatment plants are staffed by highly trained and certified personnel. These plants enable St. Helena's Water Enterprise to produce water that surpasses applicable quality standards and regulations established by both the California Department of Public Health (CDPH) and the USEPA. St. Helena routinely tests the quality of the water supply and the water produced. A variety of constituents are tested for as required by state regulations. On a monthly basis, St. Helena reports to CDPH the results of hundreds of laboratory tests performed to assure the quality and safety of our water. The testing (including microbiological, inorganic, heavy metals, and minerals) is performed by independent laboratories certified to perform the required laboratory analyses.

This Water Quality Report represents the chemical water quality data for each water source serving the City of St. Helena for the period between January 1, 2013 to December 31, 2013. After reading this report if you have any questions regarding the water quality or the Water Enterprise in general, please contact Dan Brunetti, Chief Water Treatment Plant Operator at (707) 967-2875 or, para hablar en Español the City Clerk's office at (707) 968-2745. In an emergency, during weekends, holidays and after office hours, call (707) 967-2850.

### SOURCE WATER INFORMATION

St. Helenans rely on a variety of sources for drinking water, including rivers, lakes, streams, ponds, reservoirs, springs and wells. The City of St. Helena Water Enterprise draws from three water sources for the potable water served to customers: 1) Bell Canyon reservoir, a surface water source and 2) the two Stonebridge Wells (deep groundwater sources fed by the Sonoma Volcanic aquifer), and 3) City of Napa (refer to <http://cityofnapa.org> for City of Napa's most recent CCR report).

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or human activity. All drinking water, including bottled water, may be expected to contain at least small amounts of some contami-

nants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800) 426-4791 or EPA's web site at [www.epa.gov/safewater/hfacts.htm](http://www.epa.gov/safewater/hfacts.htm).

Possible contaminants in untreated source water include the following: Microbial contaminants, (viruses, cysts and bacteria) from sewage treatment plants, septic systems, agricultural livestock operations, wildlife, human activity or farming.

Inorganic contaminants, (salts and metals) which can occur naturally or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, from farming, urban storm runoff, or residential uses.

Radioactive contaminants, from naturally-occurring, oil and gas production or mining sources.

Organic chemical contaminants, from industrial processes, petroleum production, gas stations, urban stormwater runoff, and septic systems.

### SPECIAL INFORMATION

Some people are more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons 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 contaminants. These people should seek advice about drinking water from their health care providers. EPA guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

**In order to ensure that tap water is safe to drink**, the USEPA and the State Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

**Public Participation:** The St. Helena City Council meets on the 2<sup>nd</sup> and 4<sup>th</sup> Tuesdays of the month. Meetings begin at 6:00 PM at Vintage Hall 465 Main Street, St. Helena.

### BOTTOM LINE

**The City of St. Helena's drinking water meets all Federal and State drinking water standards.**

*We test the drinking water quality for many constituents as required by State and Federal Regulations. This report shows the results of our monitoring for the periods of January 1 – December 31, 2013.*

### IMPORTANT PHONE NUMBERS

<b>Emergency:</b> <i>Weekends, Holidays &amp; After Hours</i> (707) 967-2850	<b>Information:</b> <i>Chief Treatment Plant Operator</i> (707) 967-2875	<b>EPA:</b> <i>Safe Drinking Water Hotline</i> (800) 426-4791
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The following tables summarize the drinking water contaminants that were detected in the period between January 1, 2013 to December 31, 2013. Your tap water met all USEPA and State Drinking water standards for the 2011 calendar year.

# Primary Distribution System (Finished Water) Contaminant Information

## MICROBIOLOGICAL CONTAMINANTS

Monitoring for bacteriological constituents in the distribution system is required to determine the presence of micro biological contaminants such as Coliform, Fecal Coliform, E. Coli and Turbidity. St. Helena has detected and treated the following bacteriological contaminants.

### COLIFORM BACTERIA

Coliform bacteria are naturally present in the environment, and are used as an indicator that other, potentially harmful bacteria may be present. To the right is a summary of the monitoring done to verify that the finished drinking water is free of this contaminant. Fecal Coliform or E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

Minimum number of monthly samples required:	8
Maximum number of monthly positive samples allowed (MCL):	1
Average monthly number of samples taken in 2013:	8.7
Total number of samples taken in 2013:	104
Maximum number of positives in one month:	1
Total number of E. Coli sample positives:	0
No of months in violation	0

### LEAD AND COPPER TAP SAMPLING

LEAD & COPPER	UNITS	SAMPLES COLLECTED	90% DETECTED	# OF SITES EXCEEDING	AL	MCLG	TYPICAL SOURCE OF CONTAMINANT
Lead	ppb	24	1.8	0	15	(2)	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Copper	ppm	24	0.7	0	1.3	(0.17)	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.

### SAMPLING RESULTS FOR HARDNESS AND SODIUM

			LOUIS STRALLA WTP SOURCE			SB WELL #1 SOURCE		SB WELL #2 SOURCE	
	UNITS	MCL	DATE	SOURCE	FINISHED	DATE	SOURCE	DATE	SOURCE
*Total Hardness	ppm	NS	23-Apr-13	20	None	29-Apr-13	108	29-Apr-13	111
Sodium	ppm	None	23-Apr-13	4.9	None				
	UNITS	MCL	DATE	LEVEL DETECTED	RANGE OF DETECTIONS	PHG (MCLG)	SITE		
Sodium	ppm	None	29-Apr-13	44	None	None	Stonebridge Well 01		
Sodium	ppm	None	29-Apr-13	41	None	None	Stonebridge Well 02		

Hardness & Sodium are generally found in ground water & surface water. \*The water coming from Bell Canyon Reservoir is soft, from SBW #1 and SBW #2 moderately hard to hard. Therefore, Total Hardness varies in the distribution system depending on which treatment plants are on-line & proximity of consumer to water source.

## Source Water Analysis

### BELL CANYON SOURCE WATER MCLs PRIMARY CONTAMINANTS

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	RANGE OF DETECTIONS	MCL	PHG (MCLG mrdlg)	TYPICAL SOURCE OF CONTAMINANTS
Gross Alpha	pCi/L	Quarterly 2007	0.191	0.060 - 0.483	15	[0]	Erosion of natural deposits
Combined Radium 226 & 228	pCi/L	Quarterly 2007	0.215	0.175 - 0.243	5	[0]	Erosion of natural deposits

### STONEBRIDGE WELL #1 SOURCE WATER MCLs PRIMARY CONTAMINANTS

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	MCL (MRDL)	PHG (MCLG mrdlg)	TYPICAL SOURCE OF CONTAMINANTS	
Lead	ppb	08-Apr-08	6.5	[AL = 15]	[2]	Internal corrosion of household plumbing systems; discharges from industry manufacturers; erosion of natural deposits.	
Fluoride	ppm	06-Apr-11	0.35	[2]	[1]	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.	
CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	RANGE OF DETECTIONS	MCL	PHG (MCLG mrdlg)	TYPICAL SOURCE OF CONTAMINANTS
Gross Alpha	pCi/L	Qtrly. 2007	0.944	0 - 2.39	15	[0]	Erosion of natural deposits
Combined Radium 226 & 228	pCi/L	Qtrly. 2007	0.179	0 - 0.218	5	[0]	Erosion of natural deposits

### STONEBRIDGE WELL #2 SOURCE WATER MCLs PRIMARY CONTAMINANTS

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	MCL (MRDL)	PHG (MCLG mrdlg)	TYPICAL SOURCE OF CONTAMINANTS	
Fluoride	ppm	10-Apr-11	0.31	[2]	[1]	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.	
Barium	ppm	10-Apr-11	0.11	[1]	[2]	Discharge of oil drilling wastes and from metal refineries; erosion of natural deposits.	
CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	RANGE OF DETECTIONS	MCL	PHG (MCLG mrdlg)	TYPICAL SOURCE OF CONTAMINANTS
Gross Alpha	pCi/L	Qtrly. 2007	0.300	0 - 0.327	0	0	Erosion of natural deposits
Combined Radium 226 & 228	pCi/L	Qtrly. 2007	0.248	0 - 0.268	0	0	Erosion of natural deposits

**BELL CANYON SOURCE WATER MCLs SECONDARY CONTAMINANTS**

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	RANGE OF DETECTIONS	MCL	TYPICAL SOURCE OF CONTAMINANTS
Color	color	5 days/week	80*	20 - 80*	15	Naturally-occurring organic materials
Manganese	ppb	Weekly	246*	16 - 246*	50	Leaching of natural deposits
Iron	ppb	Weekly	416*	18 - 416*	300	Leaching of natural deposits
TDS	ppm	23-Apr-13	70		1000	Runoff/leaching from natural deposits
Specific Conductance	micromhos	Daily	98	47 - 98	1600	Substances that form ions when in water
Sulfate	ppm	23-Apr-13	2.4		500	Runoff/leaching from natural deposits industrial wastes
Chloride	ppm	23-Apr-13	3.6		500	Runoff/leaching from natural deposits; seawater influence
Copper	ppm	Weekly	0.13	0.1 - 0.13	1	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

**STONEBRIDGE WELL #1 SOURCE WATER MCLs SECONDARY CONTAMINANTS**

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	MCL	TYPICAL SOURCE OF CONTAMINANTS	
TDS	ppm	06-Apr-11	29	1000	Runoff/leaching from natural deposits	
Chloride	ppm	06-Apr-11	17	500	Runoff/leaching from natural deposits; seawater influence	
Sulfate	ppm	06-Apr-11	14	500	Runoff/leaching from natural deposits; industrial wastes	
CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	MAX LEVEL DETECTED	RANGE OF DETECTIONS	MCL	TYPICAL SOURCE OF CONTAMINANTS
Manganese	ppb	46 times / Yr 13	62*	20 - 84*	50	Leaching of natural deposits
Iron	ppb	46 times / Yr 13	539*	0 - 539*	300	Leaching from natural deposits; industrial wastes
Specific Conductance	micromhos	21 times / Yr 13	495	386 - 495	1600	Substances that form ions when in water

**STONEBRIDGE WELL #2 SOURCE WATER MCLs SECONDARY CONTAMINANTS**

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	MCL	TYPICAL SOURCE OF CONTAMINANTS	
Total Dissolved Solids	ppm	10-Apr-11	390	1000	Runoff/leaching from natural deposits	
Chloride	ppm	10-Apr-11	13	500	Runoff/leaching from natural deposits; seawater influence	
Sulfate	ppm	10-Apr-11	3.2	500	Runoff/leaching from natural deposits; industrial wastes	
CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	AVG LEVEL DETECTED	RANGE OF DETECTIONS	MCL	TYPICAL SOURCE OF CONTAMINANTS
Iron	ppb	3 times / Yr 13	146	41 - 250	300	Leaching from natural deposits; industrial wastes
Manganese	ppb	3 times / Yr 13	50	20 - 54*	50	Leaching of natural deposits
Specific Conductance	micromhos	2 times / Yr 13	412	409 - 416	1600	Substances that form ions when in the water

**STONEBRIDGE WELL #1& #2 SOURCE WATER MCLs SECONDARY CONTAMINANTS**

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	AVG LEVEL DETECTED	RANGE OF DETECTIONS	MCL	TYPICAL SOURCE OF CONTAMINANTS
Iron	ppb	44 times /Yr 13	218	18 - 444*	300	Leaching from natural deposits; industrial wastes
Manganese	ppb	44 times /Yr 13	65*	39 - 107*	50	Leaching of natural deposits

SBW 1 & 2 operated together 74.8% of the time for the year 2013

**BELL CANYON RESERVOIR SOURCE WATER - DETECTION OF UNREGULATED CONTAMINANTS**

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATE	LEVEL DETECTED	NOTIFICATION LEVEL	PHG (MCLG mrdlg)	TYPICAL SOURCE OF CONTAMINANTS
1,2,3-Trichloropropane	ppt	11-May-05	< 500	5	None	Some people who use water containing 1,2,3-trichloropropane in excess of the notification level over many years may have an increased risk of getting cancer, based on studies in laboratory animals.

**SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES**

Treatment Technique * (Type of approved filtration technology used)	Conventional Filtration
Turbidity Performance Standards **(that must be met through the water treatment process)	<u>Turbidity of the filtered water must</u> 1 - Be less than or equal to .3 NTU in 95% of measurements in a month 2 - Not exceed 1.0 for more than eight consecutive hours 3 - Not exceed 5.0 NTU at any time
Lowest monthly % of samples that met Turbidity Performance Standard No. 1	98%
Highest single turbidity measurement during the year	0.27
* A required process intended to reduce the level of contaminants in drinking water. ** Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.	

**DISINFECTION BYPRODUCTS**

CHEMICAL or CONSTITUENT	UNITS	SAMPLE DATES	Max Run Ann Avg.	RANGE OF DETECTIONS	MCL	HEALTH EFFECTS LANGUAGE
Total Trihalomethanes	ppb	Feb 20, May 15, Aug 21, and Nov 20, 2013	74	44 - 87*	80	By products of drinking water chlorination
Halocetic Acids	ppb		63*	18 - 89*	60	

## SOURCE WATER SUMMARY

### Bell Canyon Reservoir

Samples of source water supplying Louis Stralla Water Treatment Plant exceeded MCL's for color, Manganese, and Iron. Elevated color occurs during significant rainfall and runoff events experienced during the winter. Manganese and Iron leaches from naturally-occurring minerals in the watershed. Manganese levels exceeded the MCL on 19 occasions and varied from 16 - 246 ppb. Iron exceeded the MCL on 5 occasions and varied from 18 - 416 ppb.

The LSWTP treats the source water for color, Manganese, and Iron. Reducing Manganese and Iron to levels not exceeding the MCL protects against unpleasant aesthetic effects such as color, taste, odor, and staining of plumbing fixtures or laundered clothing. Aeration of the reservoir, followed by application of sodium permanganate at the water plants intake piping, begins the oxidation of Manganese and Iron. Aeration de-stratifies and mixes the anaerobic and aerobic layers in the reservoir oxidizing the Manganese and Iron. Sodium Permanganate further oxidizes the Iron to precipitate and settle out in the plant clarifier. Manganese is oxidized from the clarified water by adding chlorine prior to filtration and maintaining 0.5mg/L free chlorine residual in the filter effluent causing the filter media to be coated with Manganese Oxide. This coating allows the filter to work in an adsorption/oxidation manner to remove Manganese.

### Stonebridge Wells

Stonebridge Well #1 Manganese levels in source water at Stonebridge Well #1 exceeded secondary MCL of 50 ppb. Iron in the source water samples from SBW#1 were detected at levels of 0-539 ppb.

Stonebridge Well #2 Manganese levels in source water at Stonebridge Well #2 exceeded secondary MCL of 50 ppb. Iron in the source water samples from SBW #2 were detected at levels of 41 – 250 ppb

Stonebridge Well #1&#2(combined) Manganese levels in source water at Stonebridge Well #1&#2 exceeded secondary MCL of 50 ppb. Iron in the source water samples from SBW #1&#2 were detected at levels of 18 – 444 ppb.

Manganese levels over the MCL were found in 95 % of all source water samples taken. The levels detected were 49 - 107 ppb (MCL of 50 ppb). Secondary MCLs protect aesthetic qualities of drinking water (color, taste, odor, the staining of plumbing fixtures and clothing while washing). High levels of both Iron and manganese result from leaching of natural deposits. Iron and Manganese results for the finished water samples

tested from Stonebridge wells during the reporting period were below the MCLs.

## FINISHED WATER SUMMARY

### Louis Stralla Water Treatment Plant

Finished water color levels in samples tested during the reporting period were all below the detection limit of 5 units. The quantity of colored water quality complaints for the year remained the same as year 2012. A minimum amount of water quality problems occurred originating from Louis Stralla Water Treatment Plant in year 2013. In April 2013 the malfunctioning mid intake valve was removed and closed off. In December 2013 it was necessary to use the bottom intake valve, because of the lack of a mid valve and the drought. There were some concerns of causing water quality problems by using the bottom valve, but they did not occur.

Finished water Manganese levels in the year 2013 averaged 6 ppb with a max of 48 ppb detected once. The MCL for Manganese is 50. Finished water Iron levels in the year averaged 6 ppb with a maximum of 19 ppb. The Secondary MCL for Iron 300 ppb was not exceeded during the reporting period.

### Stonebridge Wells

The finished water produced by the City of St. Helena's Stonebridge Wells did not exceed any MCL, AL, or violated any treatment, monitoring, or reporting requirement during the year 2013. Finished water Manganese levels averaged 9, less than the DLR (Detection Limit for Reporting) of 20 ppb. Finished Iron levels were all less than the DLR of 100 ppb averaging an Iron level of 9 ppb.

## WATER SOURCE ASSESSMENT

### Bell Canyon Reservoir

#### Description of Vulnerability

The source is considered most vulnerable to the following activities associated with chemicals detected in the water supply:

- Wildfires (sediment)
- Vineyards (sediment, nutrients, organic carbon)

The Bell Canyon watershed is geographically small and contains few potential contaminant sources. The land immediately surrounding the reservoir is owned by the City and is thoroughly protected. The most significant potential sources of contaminants in the watershed are wildfires and development of vineyards. Enlightened vineyard development and erosion control practices continue to have a positive influence on reducing the

potential for adverse water quality impacts.

A copy of the City's current assessment may be viewed at the City of St. Helena Department of Public Works, 1480 Main St., St. Helena, CA 94574. You may request a summary of the assessment by contacting: Dan Brunetti, Chief Plant Operator, (707) 967-2875.

### Stonebridge Wells

#### Description of Vulnerability

The source is considered most vulnerable to the following activities not associated with any detected contaminants:

- Wastewater collection systems

There have been no contaminants detected in the water supply, however the source is still considered vulnerable to activities located near the drinking water source. A City sewer line passes through the Water Treatment Plant well field.

A copy of the assessment may be viewed at: Dept. of Health Services, 50 D St., Suite 200, Santa Rosa, CA 95404. You may request a summary of the assessment by contacting: Michelle Fredericks, District Engineer (707) 576-2731.

### Other Monitoring

St. Helena tests its source water for hundreds of volatile and synthetic chemicals. The City also tests for other substances and microorganisms in finished water. Substances tested for include Aluminum, Copper, Iron, Manganese, Color, Threshold Odor, Calcium, Alkalinity, Magnesium, Sodium, Specific Conductance, Sulfate, Total Dissolved Solids and Total Hardness. Monitoring these constituents helps the City maintain high standards for taste, odor and appearance in our water.

### Distribution System

The City also tests for Disinfection By-Products (total trihalomethanes (TTHMs) and haloacetic acids (HAA5)) in samples from the distribution system. While some samples tested in 2013 contained disinfection by-products at concentrations exceeding their respective MCLs, the State requires compliance on a system-wide, annual average basis. The results for the average of all samples tested throughout the year for both contaminants were below MCLs.

## TERMS used in this report

**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 (USEPA).

**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 Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

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

**Secondary Drinking Water Standards (SDWS):** MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

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

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

**Variations and Exemptions:** Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

**ND:** not detectable at testing limit

**ppm:** parts per million or milligrams per liter (mg/L)

**ppb:** parts per billion or micrograms per liter (ug/L)

**ppt:** parts per trillion or nanograms per liter (ng/L)

**pCi/L:** picocuries per liter (a measure of radiation)