Land of Medicine Buddha – Water System

Consumer Confidence Report – 2022

Santa Cruz County Water System I.D. No. 4400530

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

June 15, 2023

About This Report

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 period of January 1 to December 31, 2022 and may include earlier monitoring data.

The Land of the Medicine Buddha facilities has its' own water system. The water system is classified as a "non-transient, non-community water system." As such, we are required to provide this *Water Quality / Consumer Confidence Report* to you, the water user. In 2022, water from the system was tested and compared to the EPA and State drinking water health standards.

This brochure reviews 2022's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

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 (800-426-4791).

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, person 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 (800-426-4791).

Your water comes from an on-site water production well sunk approximately 200-feet underground into a deep source of groundwater. The water is pumped to a 5,000-gallon raw water storage tank where chlorine is added, then iron and manganese are filtered out (naturally occurring minerals that can turn the water orange/brown). Treated water is pumped to a 5,000-gallon storage tank, then pumped to three 5,000-gallon upper storage tanks – to supply potable water for domestic (drinking and washing) use on the property. Gravity provides pressure throughout the water distribution system. The well is in the school yard, the treatment system is next to the school building, and the upper tanks are up the hill to the northeast. Please see the notes below regarding drinking water.

Sources of drinking water (both tap water and bottled water) include river, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water before it is treated include:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic system, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban storm water 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 storm water runoff, and residential uses.
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.
- 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 storm water runoff, agriculture application, and septic systems.

In order to ensure that tap water is safe to drink, the USEPA and the State Water Resources Control Board (SWRCB) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. SWRCB regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

WATER QUALITY DATA

The attached Tables 1 and 2 list all the drinking water compounds (analytes) that the source well and water distribution system were tested for, the date of the tests, the results of the tests, and the Maximum Contaminant Level (MCL) for that analyte established by the US EPA or the state of California in parts per million (ppm). For comparison, 1-ppm is the equivalent of 1 second in 11.5 days. The presence of any compound in the water does not necessarily indicate that the water poses a health risk. The State requires monitoring for certain compounds less than once per year because the concentrations of these compounds are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

> Source water supplied to and distributed in the system met all EPA and State drinking water standards, except for the following instances:

- On 4/20/16, iron and manganese concentrations exceeded the secondary Maximum Contaminant Level (MCL) in the source well. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water and DO NOT affect health at that level. Water with elevated iron and manganese concentrations can result in reddish-brown and dark brown stains on fixtures and washed clothing. An iron and manganese filtration system removes these compounds from the source well supply water, prior to this water being distributed to any person. So, this is not an issue.

- On 8/18/22, the manganese concentration downstream of the iron / manganese treatment system exceeded the secondary MCL. This indicated that the treatment system filter needed maintenance. So, a backwash was promptly performed on the filter. Following this maintenance, the iron and manganese concentrations were both non-detect.

About Iron and Manganese: In the summer to fall 2016, Rayne of Santa Cruz repaired and revised an oxidation and filtration system between the raw and finished water storage tanks to remove the iron and manganese. The repair was completed in October 2016, at which point Weber, Hayes was hired as the system operator. Water in the distribution system contained less than the Secondary MCLs of manganese (less than 0.05 ppm) and Iron (0.3 ppm) since the filtration system began operating, except for one minor instance in 2020 and one minor instance in 2022 – which were promptly resolved. Iron and Manganese are naturally occurring minerals, present in groundwater due to leaching from natural deposits. They are required nutrients in every person's diet and a healthful diet provides adequate iron and manganese for good nutrition (US EPA, 2003). Iron and Manganese are regulated Secondary MCLs (see drinking water regulations) established to address issues of aesthetics (discoloration, taste, odor), not health concerns. At a concentration greater than 0.05 ppm, Manganese may make the water appear

brown. At a concentration greater than 0.3 ppm, Iron may make the water appear a rust-color and may impart a metallic taste to it.

For more information on Iron and Manganese you may see the following references:

- WHO, 2004 (PDF), Iron in Drinking-water, Background document for development of WHO Guidelines for Drinking-water Quality, World Health Organization, 2004.
- WHO, 2004 (PDF), Manganese in Drinking-water, Background document for development of WHO Guidelines for Drinking-water Quality, World Health Organization, 2004.
    - See also: WHO, Chemical Hazards in Drinking Water - Manganese.
- US EPA, 2017, Secondary Drinking Water Standards Guidance for Nuisance Chemicals

About Chlorine Injection into Your Water: A chlorine injection system was installed as a pre-treatment process for the iron and manganese removal system. Due to the required dose of chlorine needed for optimal manganese removal, there was and continues to be, a small residual amount of chlorine in your water. The residual low concentration of chlorine in your water inhibits bacteria in the water system. The chlorine injection system provides a chlorine residual of approximately 0.5 to 1.0 ppm in the distribution system water. The MCL for chlorine is 4 ppm.

The laboratory analytical results are summarized in the attached Tables 1 and 2.

Please direct any questions about the potable water system to:

Land of Medicine Buddha (831-462-8383)

OR

Shawn Mixan (Certified Water Operator - Weber, Hayes and Associates) at 831.722.3580

Term	Definition
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
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 (U.S. EPA).
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 Standards (PDWS)	MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
Public Health Goal (PHG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California 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.
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.
Variances and Exemptions	Permissions from the State Water Resources Control Board (State Board) 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 (µg/L)
ppt	parts per trillion or nanograms per liter (ng/L)
ppq	parts per quadrillion or picogram per liter (pg/L)
pCi/L	picocuries per liter (a measure of radiation)

Table 1: Summary of Well Analytical Results

Land of Medicine Buddha, Soquel CA - Water System I.D. No. 4400530 (-002)

Analyte	Date Sampled	RESULT (ppm)	MCL (ppm)
SDWIS - INORGANICS			
Aluminum (Al)	4/20/16	0.41	0.2 [2] | 1
Antimony (Sb)	4/20/16	ND	0.006
Arsenic (As)	4/20/16	ND	0.01
Barium (Ba)	4/20/16	ND	1
Beryllium (Be)	4/20/16	ND	0.004
Boron (B)	4/20/16	0.23	*CA-AL: 1
Cadmium (Cd)	4/20/16	ND	0.005
Chromium (Cr)	4/20/16	ND	0.05
Cyanide (CN)	4/20/16	ND	0.15
Fluoride (F)	4/20/16	0.24	2.0
Lead (Pb)	4/20/16	ND	*AL: 0.015
Mercury (Hg)	4/20/16	ND	0.002
Nickel (Ni)	4/20/16	ND	0.1
Selenium (Se)	4/20/16	ND	0.05
Silica (SiO2)	4/20/16	49	--
Thallium (Tl)	4/20/16	ND	0.002
SDWIS - SECONDARY / GP			
Bicarbonate Alkalinity (as HCO3)	4/20/16	370	--
Carbonate Alkalinity (as CO3)	4/20/16	ND	--
Total Alkalinity (as CaCO3)	4/20/16	310	--
Calcium (Ca)	4/20/16	77	--
Chloride (Cl)	4/20/16	49	500 [2]
Color (Co/Pt) (Units)	4/20/16	ND	15
Copper (Cu)	4/20/16	ND	*AL: 1.3 | 1.0 [2]
Foaming Agents MBAS (Surfactants)	4/20/16	ND	0.5 [2]
Hardness, Total (as CaCO3)	4/20/16	300	--
Iron (Fe), total	4/20/16	0.57 **	0.3 [2]
Magnesium (Mg)	4/20/16	27	--
Manganese (Mn)	4/20/16	0.21 **	0.05 [2]
Odor (Threshold Number)	4/20/16	ND	3 [2]
pH value	4/20/16	7.3 pH units	6.5 - 8.5
Potassium (K)	4/20/16	7	--
Silver (Ag)	4/20/16	ND	0.1 [2]
Sodium (Na)	4/20/16	70	--

Table 1: Summary of Well Analytical Results

Land of Medicine Buddha, Soquel CA - Water System I.D. No. 4400530 (-002)

Analyte	Date Sampled	RESULT (ppm)	MCL (ppm)
Specific Conductivity	4/20/16	900 µS/cm	1,600 µS/cm [2]
Sulfate (SO4)	4/20/16	110	500 [2]
Total Dissolved Solids	4/20/16	550	1,000 [2]
Turbidity (NTU)	4/20/16	4.2	5 [2]
Zinc (Zn)	4/20/16	1.5	5 [2]
SDWIS - NITRATES			
Nitrate (as N)	4/15/22	ND	10
	4/20/21	ND	
Nitrite (as N)	4/15/22	ND	1
	5/30/19	ND	
Nitrate-N + Nitrite-N	4/15/22	ND	10
	5/30/19	ND	
OTHER			
Hexavalent Chromium (Cr+6)	12/31/14	ND	0.01 [a]
Perchlorate	1/28/21	ND	0.006
Synthetic Organic Compounds	5/13/20	All ND	varies
Volatile Organic Compounds	3/7/17	All ND	varies
1,2,3, TCP	11/18/21	ND	0.000005
	11/6/18	ND	
Gross Alpha	8/15/19	0.86	15 pCi/L

All Data & MCLs QC'd on 6/7/23 by: S. Mixan (WHA)

NOTES:

Not all analytes are sampled every year. Most recent data is shown.

ppm = parts per million; which is equivalent to milligrams per liter (mg/L)

MCL = Maximum Contaminant Level. Primarily based on US Environmental Protection Agency (EPA) & California drinking water regulations

ND = Not Detected at or above the laboratory's Reporting Limit

2 = Secondary MCLs are set to protect the odor, taste, and appearance of drinking water and DO NOT affect health at that level

a = MCL is no longer in effect

*California (CA-NL) and/or EPA Action Levels (AL) are shown for analytes which do not have an MCL

** Indicates a secondary MCL exceedance. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water and DO NOT affect health at that level. A treatment system is also in place to filter iron & manganese from the well water.

Table 1: Summary of Well Analytical Results

Land of Medicine Buddha, Soquel CA - Water System I.D. No. 4400530 (-002)

Analyte	Date Sampled	RESULT (ppm)	MCL (ppm)

1,2,3-TCP = 1,2,3-Trichloropropane

pCi/L = picocuries per liter

NTU = Nephelometric Turbidity Units

Boron (B) = this analyte is not required per the SDWIS website

Table 2: Summary of Distribution System Analytical Results

Land of Medicine Buddha, Soquel CA - Water System I.D. No. 4400530

Analyte	Date Sampled	RESULT (ppm)	MCL (ppm)
Bacteria			
Coliform	Jan - Dec 2022	Absent	---
E Coli	Jan - Dec 2022	Absent	---
Disinfection By-Products			
Total Trihalomethanes	9/27/22	0.046	0.08
Total HAA	9/27/22	0.0077	0.06
Iron & Manganese			
Iron	2/10/22	ND	0.3 [2]
Iron	5/24/22	ND	0.3 [2]
Iron	8/18/23	0.085	0.3 [2]
Iron	11/22/22	ND	0.3 [2]
Manganese	2/10/22	ND	0.05 [2]
Manganese	5/24/22	ND	0.05 [2]
Manganese	8/18/23	0.099 **	0.05 [2]
Manganese	11/22/23	ND	0.05 [2]
Lead & Copper			
Lead	9/29/21	ND	AL: 0.015
Copper	9/29/21	ND to 0.1	AL: 1.3 | 1.0 [2]

All Data & MCLs QC'd on 6/7/2023 by: S. Mixan (WHA)

NOTES:

ppm = parts per million; which is equivalent to milligrams per liter (mg/L)

MCL = Maximum Contaminant Level. Primarily based on US Environmental Protection Agency (EPA) & California drinking water regulations

ND = Not Detected at or above the laboratory's Reporting Limit

[2] = Secondary MCLs are set to protect the odor, taste, and appearance of drinking water and DO NOT affect health at that level

** Indicates a secondary MCL exceedance. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water and DO NOT affect health at that level. A treatment system is also in place to filter iron & manganese from the well water. To resolve this distribution system exceedance, we flushed the iron and manganese filters. After that, iron and manganese were not detected in the following distribution system samples for 2020.

AL = California (CA-NL) and/or EPA Action Levels (AL) are shown for analytes which do not have an MCL