

ANNUAL WATER QUALITY REPORT

2021

City of Morro Bay
WATER TESTING PERFORMED IN
2021
PWS ID# CA4010011



Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.

Basic Information About Drinking Water Contaminants

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the layers of the ground it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals and human activity.

Contaminants that may be present in source water include:

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

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

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

Organic Chemical Contaminants: including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.

Radioactive Contaminants: that can be naturally occurring or be the result of oil and gas production and mining activities.



Community Participation

The Public Works Advisory Board (PWAB) meets the third Wednesday of the month at the Veterans Hall located at 209 Surf Street or via Zoom at 5:30 p.m. If you have concerns you wish to express about your drinking water, time is set aside at the beginning of each meeting for public comment.

Your 2021 Water Quality Report

Delivering Excellence

The City of Morro Bay Water System met all Federal and State standards for drinking water during 2021.

The City of Morro Bay is proud to present our annual water quality report. This report shows the results from all of our water quality testing completed from **January 1 through December 31, 2021**. City staff is constantly seek the best approaches to delivering to you the highest quality water possible and are dedicated to producing drinking water that meets all State and Federal standards. We remain committed to meeting the State's water source protection, water conservation and community education goals, and serving the needs of all our water users.

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's (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Drinking Water Source Assessments (DWSAP) assess the area around a drinking water source through which contaminants might move and reach that drinking water supply. They include an inventory of possible contaminating activities (PCAs) that might lead to the release of microbiological or chemical contaminants within the delineated area, and a determination of the PCAs to which the drinking water source is most vulnerable. DWSAP for the Morro and Chorro wells were completed during the 2001 fiscal year, an assessment was completed in 2009 for additional wells in the Morro basin that are being used as irrigation and feed water for the Reverse Osmosis plant. The results of these assessments are available to the public by contacting the Public Works Department or by visiting the State Water Resources Control Board's (State Board) website at:

(http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/DWSAP.shtml).

DEFINITIONS

Average Amount: The amount detected; or when a range of values is shown, the average detected.

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 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.

Million Fibers per Liter (MFL): EPA has established a maximum contaminant level (MCL) for asbestos in drinking water: 7 MFL (million fibers per liter).

Nephelometric Turbidity Units (NTU): Measurement of the clarity, or turbidity, of water.

Parts per billion (ppb): One part substance per billion parts water (or micrograms per liter).

Parts per million (ppm): One part substance per million parts water (or milligrams per liter).

Parts per million (ppm): One part substance per million parts water (or milligrams per liter).

Picocuries per liter (pCi/L): A measure of radioactivity.

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 (RAL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

NA: Not applicable **ND:** Not detected

NS: No standard **NC:** Not collected

LRAA: Locational Running Annual Average

Where Does My Water Come From?

The City of Morro Bay's primary source of water is surface water from the State Water Project. The State Water Project is administered locally by the Central Coast Water Authority (www.ccwa.com). The water is treated at the Polonio Pass Water Treatment Plant, which is near the junction of Highways 41 and 46, and then pumped to Morro Bay. The State Water supply can be augmented with water pumped from wells located near Lila Keiser Park (Morro Basin). Some of the well water has nitrate contaminant levels that require treatment through filtration. The City uses the Brackish Water Reverse Osmosis plant to remove nitrates. Additionally, all well water has a disinfectant added prior to use. During 2021, State Water provided 96% of the City's drinking water and the wells provided the remaining 4%, with all of this well water being treated by the Brackish Water Reverse Osmosis plant pictured below.



Sampling Results

Over the past years we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. While the range of contamination in the raw well water may have exceeded the drinking water standards, all of the water delivered to your home had contaminant levels reduced through either blending or treatment. The table below lists all of the drinking water contaminants that were detected during the most recent sampling for the constituent. If a contaminant was tested for and not found in the system or source water, it is not included in this report. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old. Many of the well water samples were taken in 2018 and will be sampled again in 2022.

PRIMARY DRINKING WATER STANDARD
(Regulated In Order To Protect Against Possible Adverse Health Effects)

State Water

Well Water⁴

SUBSTANCE (UNITS)	* YEAR SAMPLED	MCL	PHG (MCLG)	AVERAGE AMOUNT	RANGE LOW-HIGH	AVERAGE AMOUNT	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppm)	2021	1	0.6	0.061	ND - 0.086	ND	ND	No	Erosion of natural deposits; residue from water treatment processes
Arsenic (ppb)	2021	10	0.004	ND	ND	0.2	ND-2	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2021	1	2	ND	ND	0.104	0.119-0.23	No	Discharge of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (total Cr) (ppb)	2021	50	100	ND	ND	0	0	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2021	2	1	ND	ND	0.1	0.2	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen) (ppm)	2021	10 (as N)	10 (as N)	ND	ND	9.9	8.9 - 21.4	No ⁴	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ppb)	2021	50	30	ND	ND	11.6	12-30	No	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)

SECONDARY DRINKING WATER STANDARD
(Regulated In Order To Protect The Odor, Taste And Appearance Of Drinking Water)

State Water

Well Water⁴

SUBSTANCE (UNITS)	YEAR SAMPLED	State MCL	AVERAGE AMOUNT	RANGE LOW-HIGH	AVERAGE AMOUNT	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2021	500	116	94-147	213.3	135-920	No	Runoff /leaching from natural deposits; seawater influence
Corrosivity (Aggressivity Index)	2021	NA	12	12	7.6	12.7-13.2	No	N/A
Specific Conductance (umhos/cm)	2021	1600	503	337-621	1308.3	1470-3970	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2021	500	84	84	92.8	141-173	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm) (TDS)	2021	1000	360	360	853	930– 2600	No	Runoff/leaching from natural deposits
Turbidity ³ (NTU)	2021	5	0.06	ND-0.25	0.1	ND-0.2	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES
(Used To Monitor Certain Contaminant Occurrences)

State Water Well Water⁴

SUBSTANCE (UNITS)	YEAR SAMPLED	AVERAGE AMOUNT	RANGE LOW-HIGH	AVERAGE AMOUNT	RANGE LOW-HIGH	TYPICAL SOURCE
2-Methylisoborneol (ng/L)	2021	5.9	ND - 18	--	--	An organic compound mainly produced by blue-green algae (cyanobacteria)
Alkalinity (ppm)	2021	78	62-92	424.3	390-460	Runoff/leaching from natural deposits; seawater influence
Boron (ppb)	2021	ND	ND	157.1	100-200	Runoff/leaching from natural deposits
Calcium (ppm)	2021	24	24	137.3	113-220	Runoff/leaching from natural deposits; seawater influence
Geosmin (ppm)	2021	3.8	ND - 17	--	--	An organic compound mainly produced by bacteria growth in surface water
Hardness total as CaCO ₃ (ppm)	2021	123	98-162	904.3	714-1400	Runoff/leaching from natural deposits
Heterotrophic Plate Count (HPC) (cfu/ml)	2021	3	0 - 221	*0.16	*0 - 2	HPC has no health effects; it is an analytic method used to measure the variety of bacteria that are common in water
Magnesium (ppm)	2021	16	16	136.3	104-206	Runoff/leaching from natural deposits; seawater influence
Potassium (ppm)	2021	3.6	3.6	1.6	ND - 3	Runoff/leaching from natural deposits; seawater influence
pH (units)	2021	8.3	7.4-8.8	7.75	6.6-8.3	Runoff/leaching from natural deposits
Sodium (ppm)	2021	83	83	124.7	59-285	Runoff/leaching from natural deposits; seawater influence
Total Organic Carbon (ppm)	2021	2.2	1.1-4.1	NA	NA	Various natural and man made sources
Vanadium (ppb)	2021	ND	ND	1.3	ND-3	Vanadium is a naturally occurring "rare earth" element that is found ubiquitously in the earth's crust.

* HPC samples taken in distribution system, not well water

**Tap water samples were collected for Lead and Copper analyses
from 30 homes throughout the distribution system**

SUBSTANCE (UNITS)	YEAR SAMPLED	ACTION LEVEL	PHG (MCLG)	AMOUNT DETECTED (90th%Tile)	HOMES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2021	1.3	0.3	0.097	0	No	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) ²	2021	15	0.2	ND	0	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

Lead in Drinking Water

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. 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 at: 1-800-426-4791 or www.epa.gov/safewater/lead.

The City of Morro Bay 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.

Water Distribution System

State Water					Morro Bay				
SUBSTANCE (UNITS)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE AMOUNT	RANGE LOW-HIGH	AVERAGE AMOUNT	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Haloacetic Acids (ppb)	2021	60	NA	9 Highest LRAA 13.0	6.3-11	17.75	6 - 28	No	By-product of drinking water disinfection
THHMs (ppb) (Total Trihalomethanes)	2021	80	NA	51 Highest LRAA 52.8	43-58	51.25	33-77	No	By-product of drinking water disinfection
Total Chlorine Residual	2021	4	4	2.79	1.37-3.58	2.03	0.10-3.9	No	Measurement of the disinfectant used in the production of drinking water
total Coliform Bacteria (# of positive samples)	2021	0	0	0	0	0	0	No	Naturally present in the environment

Important Health Information

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 provider. U.S. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are



Water Conservation

Water conservation REBATES are still available!

- ♦ Convert your water-wasting lawn with the Cash for Grass rebate, \$0.50 per Sqft (\$500)
- ♦ Irrigation retrofit rebate (\$100)
- ♦ Rain Barrel rebate (\$50)
- ♦ SMART irrigation controller (\$100)
- ♦ Toilet— replace 3 gal with dual flush (\$100)
- ♦ Washing Machine –Energy Star (\$100)

Questions?

For more information about this report, or any questions relating to your drinking water, please contact Damaris Hanson, at (805) 772-6265 or dhanson@morrobayca.gov



Footnotes:

¹ HPC results are reported from the distribution system not from the raw well water.

² Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and/or flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the U.S. EPA Safe Drinking Water Hotline at 1-800-426-4791.

³ Turbidity (NTU) is a measure of the cloudiness of the water and it is a good indicator of the effectiveness of a treatment plant's filtration system.

⁴ Sampling from well water is for raw water results. Samples are taken prior to either treatment or blending. Sampling dates are from 2018