2023 Consumer Confidence Report

Water System Information

Water System Name: **SMWD – Nichols Institute**

Report Date: 24 May 2024

Type of Water Source(s) in Use: Treated surface water purchased from Santa Margarita Water District (SMWD)

Name and General Location of Source(s): Santa Margarita Water District
Rancho Santa Margarita, CA 92688

Drinking Water Source Assessment Information: SMWD - The watershed sanitary surveys for Metropolitan Water District of Southern California's (MWDSC's) Colorado River supply were recently updated in 2020 and for the State Water Project supply in 2021.

The IRWD's watershed sanitary survey for Santiago Reservoir (Irvine Lake) was updated in 2019. Copies of the most recent summary of any of the watershed sanitary surveys can be obtained by calling SMWD Customer Service at (949) 459-6400.

Time and Place of Regularly Scheduled Board Meetings for Public Participation:
Santa Margarita Water District has two regular Board meetings each month. Meeting details can be found on the District's website at https://smwd.com/meetings

For More Information, Contact: Rachel Pasco Phone Number: (949) 459-6674

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, 2023 and may include earlier monitoring data.

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse *SMWD-Nichols Institute* a *(949) 459 6400* para asistirlo en español.

Terms Used in This Report

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.

Term	Definition
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)

Sources of Drinking Water and Contaminants that May Be Present in Source Water

The sources of drinking water (both tap water and bottled water) include rivers, 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 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 byproducts 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.

Regulation of Drinking Water and Bottled Water Quality

In order to ensure that tap water is safe to drink, the U.S. EPA and the 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.

About Your Drinking Water Quality

Drinking Water Contaminants Detected

Tables 1, 2, 3, 4, and 5 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State Board 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. Any violation of an AL, MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.

Table 1. Sampling Results Showing the Detection of Coliform Bacteria

Complete if bacteria are detected.

Microbiological Contaminants	Highest No. of Detections	No. of Months in Violation	MCL	MCLG	Typical Source of Bacteria
E. coli	2023 [0]	[0]	(a)	0	Human and animal fecal waste

(a) Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.

Table 2. Sampling Results Showing the Detection of Lead and Copper

Complete if lead or copper is detected in the last sample set.

Lead and Copper	Sample Date	No. of Samples Collected	90th Percentile Level Detected	No. Sites Exceeding AL	AL	PHG	Typical Source of Contaminant
Lead (ppb)	06/08/2022	10	<5	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	06/08/2022	10	0.54	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Table 3. Sampling Results for Sodium and Hardness (SMWD Source[1])

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	2023	84	57 – 100	None	None	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2023	209	100 – 296	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

1. For treated surface water purchased from SMWD source, please refer to enclosed 2024 Water Quality Report (for 2023 report year)

Table 4. Detection of Contaminants with a Primary Drinking Water Standard

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors (Distribution System)						
Chlorine (ppm)	2023	0.47	0.1 – 1.32	[4.0]	[4.0]	Drinking water disinfectant added for treatment.
TTHMs [Total Trihalomethanes] (ppb)	2023	35	25 – 35	80	N/A	Byproduct of drinking water disinfection
HAA5 [Haloacetic Acids] (ppb)	2023	17	9 – 18	60	N/A	Byproduct of drinking water disinfection

Table 5. Detection of Contaminants with a Secondary Drinking Water Standard

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	SMCL	Typical Source of Contaminant
Distribution System Water Quality					
Odor (TON)	2023	ND	ND	3	Naturally-occurring organic materials
Specific Conductance (µS/cm)	2023	944	758 – 1087	1600	Substances that form ions when in water; seawater influence
Turbidity (NTU)	2023	0.1	0.05 – 0.2	5	Soil runoff
Color (Color Units)	2023	1	1	15	Naturally-occurring organic materials

Additional General Information on Drinking Water

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 (1-800-426-4791).

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, 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. U.S. EPA/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).

Lead-Specific Language: 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. ***SMWD – Nichols Institute*** 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. [Optional: If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.] 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 http://www.epa.gov/lead.

2024 Water Quality Report

Santa Margarita Water District

Through comprehensive water quality compliance testing programs, your drinking water is monitored from source to tap to ensure that it meets or surpasses all federal and state drinking water regulations.

Your 2024 Water Quality Report

Since 1990, California public water utilities have been providing an annual Water Quality Report to their customers. **This year's report covers calendar year 2023 drinking water quality testing and reporting.**

Santa Margarita Water District (SMWD) vigilantly safeguards its water supply and, as in years past, the water delivered to your home meets or surpasses the quality standards required by federal and state regulatory agencies. The U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board, Division of Drinking Water (DDW) are the agencies responsible for establishing and enforcing drinking water quality standards.

The Irvine Ranch Water District (IRWD) and Metropolitan Water District of Southern California (MWDSC) supply treated imported surface water to SMWD and test for unregulated chemicals in our water supply. Unregulated chemical monitoring helps USEPA and DDW determine where certain chemicals occur and whether new standards need to be established for those chemicals to protect public health.

Through drinking water quality testing programs carried out by IRWD and MWDSC for treated surface water and the SMWD for the distribution system, your drinking water is constantly monitored from source to tap for regulated and unregulated constituents. In most cases, SMWD goes beyond what is required by more frequent testing on chemicals that may have known health risks but do not have 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 more than one year old, are representative.

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

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

Quality Water is Our Priority

Turn the tap and the water flows, as if by magic. Or so it seems. The reality is considerably different, however. Delivering high-quality drinking water to our customers is a scientific and engineering feat that requires considerable effort and talent to ensure the water is always available to drink.

Because tap water is highly regulated by state and federal laws, water treatment and distribution operators must be licensed and are required to complete on-the-job training and technical education before becoming a state certified operator.

Our licensed water professionals have an understanding of a wide range of subjects, including mathematics, biology, chemistry, physics, and engineering. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to maintain water quality;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind every drop.

Constant Monitoring Ensures Continued Excellence

Sources of Supply

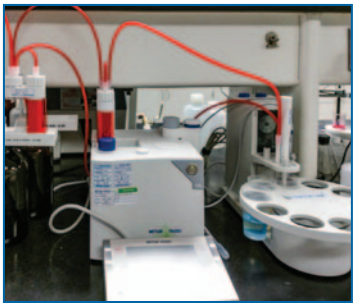
Your drinking water consists of imported treated surface water from MWDSC, as well as treated surface water from IRWD's Baker Water Treatment Plant, which utilizes surface water from both MWDSC and Santiago Reservoir (Irvine Lake). MWDSC's imported water sources are the Colorado River and the State Water Project, which draws water from the Sacramento-San Joaquin River Delta.

Basic Information About Drinking Water Contaminants

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

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gasoline 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 or mining activities.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.

In order to ensure that tap water is safe to drink, USEPA and the 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 must 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 (800) 426-4791. or check their website at: www.epa.gov/safewater.

Drinking Water Fluoridation

Fluoride has been added to U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water.

In December 2007, MWDSC joined a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay. MWDSC was in compliance with all provisions of the State's fluoridation system requirements. Fluoride levels in drinking water are limited under California state regulations at a maximum dosage of 2 parts per million.

Additional information about the fluoridation of drinking water is available on these websites:

U.S. Centers for Disease Control and Prevention

1 (800) 232-4636 ♦ www.cdc.gov/fluoridation/

State Water Resources Control Board, Division of Drinking Water

www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.html

For more information about MWDSC's fluoridation program, please contact Edgar G. Dymally at (213) 217-5709 or at edymally@mwdh2o.com.

To Safeguard Against Issues that May Affect Your Health

We Comply with All State & Federal Water Quality Regulations

Disinfectants and Disinfection Byproducts

Disinfection of drinking water was one of the major public health advances in the 20th century. Disinfection was a major factor in reducing waterborne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today.

Water imported from IRWD and MWDSC contain chloramines, a combination of chlorine and ammonia, as a drinking water disinfectant. Chloramines are effective killers of bacteria and other microorganisms that may cause diseases.

Chlorine disinfection has almost completely eliminated from our lives the risks of microbial waterborne diseases. Chlorine is added to your drinking water at the source (surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution system pipes. This chlorine helps to prevent the growth of bacteria in the pipes that carry drinking water from the source into your home.

However, chlorine can react with naturally-occurring materials in the water to form unintended chemical byproducts, called disinfection byproducts (DBPs), which may pose health risks. A major challenge is how to balance the risks from microbial pathogens and DBPs. It is important to provide protection from these microbial pathogens while simultaneously ensuring decreasing health risks from disinfection byproducts. The Safe Drinking Water Act requires the USEPA to develop rules to achieve these goals.

Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are the most common and most studied DBPs found in drinking water treated with chlorine. In 1979, the USEPA set the maximum amount of total THMs allowed in drinking water at 100 parts per billion as an annual running average. Effective in January 2002, the Stage 1 Disinfectants / Disinfection Byproducts Rule lowered the total THM maximum contaminant level to 80 parts per billion and added HAAs to the list of regulated chemicals in drinking water.

Stage 2 of the regulation was finalized by USEPA in 2006, which further controls allowable levels of DBPs in drinking water without compromising disinfection itself. A required distribution system evaluation was completed in 2008 and a Stage 2 monitoring plan has been approved by DDW. Full Stage 2 compliance began in 2012. Your drinking water complies with the Stage 2 Disinfectants / Disinfection Byproducts Rule.

Chloramines form less disinfectant by-products. People who use dialysis machines may want to take special precautions and consult their physician for appropriate type of water treatment. Customers who maintain fish ponds, tanks or aquaria should also make necessary adjustments in water quality treatment, as these disinfectants are toxic to fish.

Cryptosporidium

Cryptosporidium is a microscopic organism that, when ingested, can cause diarrhea, fever, and other gastrointestinal symptoms. The organism comes from animal and/or human wastes and may be in surface water. MWDSC tested their source water and treated surface water for *Cryptosporidium* in 2023 but did not detect it. As a safeguard, *Cryptosporidium* is eliminated from the water using an effective treatment combination including sedimentation, filtration, and disinfection.

The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from USEPA's Safe Drinking Water hotline at (800) 426-4791 between 10 a.m. and 4 p.m. Eastern Time (7 a.m. to 1 p.m. in California).

Immunocompromised People

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

2023 Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
Radiologicals – Tested in 2023						
Gross Alpha Particle Activity (pCi/L)	15	(0)	ND	ND – 5	No	Erosion of Natural Deposits
Gross Beta Particle Activity (pCi/L)	50	(0)	ND	ND – 6	No	Decay of Natural and Man-made Deposits
Uranium (pCi/L)	20	0.43	1	ND – 3	No	Erosion of Natural Deposits
Inorganic Chemicals – Tested in 2023						
Aluminum (ppm)	1	0.6	0.105	ND – 0.07	No	Treatment Process Residue, Natural Deposits
Bromate (ppb)	10	0.1	ND	ND – 6.3	No	Byproduct of Drinking Water Ozonation
Fluoride (ppm)	2	1	0.7	0.6 – 0.8	No	Water Additive for Dental Health
Nitrate (as Nitrogen) (ppm)	10	10	0.7	0.7	No	Fertilizers, Septic Tanks
Secondary Standards* – Tested in 2023						
Aluminum (ppb)	200*	600	105	ND – 70	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	66	42 – 91	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	n/a	2	1 – 2	No	Naturally-occurring Organic Materials
Odor (threshold odor number)	3*	n/a	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	642	424 – 859	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	122	70 – 175	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	394	253 – 534	No	Runoff or Leaching from Natural Deposits
Unregulated Chemicals – Tested in 2023						
Alkalinity, total as $CaCO_3$ (ppm)	Not Regulated	n/a	84	66 – 102	n/a	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL = 1	n/a	0.13	0.13	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	n/a	38	25 – 52	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as $CaCO_3$ (ppm)	Not Regulated	n/a	160	99 – 220	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	n/a	9.4	5.8 – 13	n/a	Runoff or Leaching from Natural Deposits
Lithium (ppb)	Not Regulated	n/a	15	ND – 30	n/a	Various Natural and Man-made Sources
Magnesium (ppm)	Not Regulated	n/a	15	9.6 – 21	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8.5	8.5	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	3.4	2.6 – 4.3	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	n/a	69	47 – 91	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	2.4	2.1 – 3	n/a	Various Natural and Man-made Sources

ppb = parts per billion; **ppm** = parts per million; **pCi/L** = picoCuries per liter; **µmho/cm** = micromhos per centimeter; **ND** = not detected; **NL** = Notification Level; **MCL** = Maximum Contaminant Level; **(MCLG)** = federal MCL Goal; **PHG** = California Public Health Goal; **n/a** = not applicable; **TT** = treatment technique

*Chemical is regulated by a secondary standard.

Turbidity – combined filter effluent Metropolitan Water District Diemer Filtration Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Chemical
1) Highest single turbidity measurement (NTU)	0.3	0.08	No	Soil Runoff
2) Percentage of samples less than or equal to 0.3 NTU	95%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. **NTU** = nephelometric turbidity units
Low turbidity in Metropolitan's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT).
A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly.

Unregulated Chemicals Requiring Monitoring

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Manganese (ppb)**	SMCL = 50	n/a	2.2	1.1 – 4.8	2020

SMCL = Secondary MCL

**Manganese is regulated with a secondary standard of 50 ppb but was not detected, based on the detection limit for purposes of reporting of 20 ppb. Manganese was included as part of the unregulated chemicals requiring monitoring.

Table Legend

What is a Water Quality Goal?

In addition to mandatory water quality standards, USEPA and the DDW have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guidance and directions for water management practices.

The charts in this report include three types of water quality goals:

- **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 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 USEPA.
- **Public Health Goals (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 – Office of Environmental Health Hazard Assessment.

What are Water Quality Standards?

Drinking water standards established by the USEPA and DDW set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The charts in this report show the following types of water quality standards:

- **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.
- **Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- **Secondary MCLs** are set to protect the odor, taste, and appearance of drinking water.
- **Primary Drinking Water Standard:** MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- **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 chemicals in drinking water that are difficult and sometimes impossible to measure directly.

2023 Irvine Ranch Water District – Baker Water Treatment Plant

Chemical	MCL	PHG (MCLG)	Avg. Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
Radiologicals – Tested in 2023						
Gross Alpha Particle Activity (pCi/L)	15	MCLG = 0	5.4	5.4	No	Erosion of Natural Deposits
Gross Beta Particle Activity (pCi/L)	50	MCLG = 0	5.13	5.13	No	Decay of Natural and Man-made Deposits
Uranium (pCi/L)	20	0.43	1.7	1.7	No	Erosion of Natural Deposits
Inorganic Chemicals – Tested in 2023						
Arsenic (ppb)	10	0.004	ND	ND – 2.31	No	Erosion of Natural Deposits
Barium (ppm)	1	2	ND	ND – 0.115	No	Refinery Discharge, Erosion of Natural Deposits
Chlorine Dioxide (ppb)	MRDL = 800	MRDLG = 800	50.4	ND – 600	No	Drinking Water Disinfectant Added for Treatment
Chlorite (ppm)	1.0	0.05	0.1	0.06 – 0.13	No	Byproduct of Drinking Water Chlorination
Fluoride (ppm)	2.0	1	0.32	0.26 – 0.37	No	Erosion of Natural Deposits; Water Additive for Dental Health
Nitrate (as Nitrogen) (ppm)	10	10	ND	ND – 0.47	No	Runoff and Leaching from Fertilizer Use; Septic Tank and Sewage; Natural Deposit Erosion
Secondary Standards* – Tested in 2023						
Chloride (ppm)	500*	n/a	89.2	55.5 – 111	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	n/a	ND	ND – 5	No	Naturally-occurring Organic Materials
Manganese (ppb)	50*	n/a	2.74	ND – 78	No	Leaching from Natural Deposits
Odor (threshold odor number)	3*	n/a	1	ND – 3	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	1,001	918 – 1,085	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	217	187 – 240	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	612	528 – 672	No	Runoff or Leaching from Natural Deposits
Turbidity (NTU)	5*	n/a	ND	ND – 0.3	No	Soil Runoff
Unregulated Chemicals – Tested in 2023						
Alkalinity, total as $CaCO_3$ (ppm)	Not Regulated	n/a	138	116 – 154	n/a	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL = 1	n/a	0.137	0.133 – 0.141	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	n/a	74.7	68.8 – 81.4	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as $CaCO_3$ (ppm)	Not Regulated	n/a	297	282 – 321	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	n/a	17	16 – 19	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	27.9	25 – 29.9	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8	7.5 – 8.5	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	4.18	4.05 – 4.21	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	n/a	91.6	74.2 – 112	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	1.8	1.8	n/a	Various Natural and Man-made Sources

ppb = parts per billion; **ppm** = parts per million; **pCi/L** = picoCuries per liter; **µmho/cm** = micromhos per centimeter; **NTU** = nephelometric turbidity units; **MCL** = Maximum Contaminant Level; **PHG** = California Public Health Goal; **MCLG** = federal MCL Goal; **MRDL** = Maximum Residual Disinfectant Level; **MRDLG** = Maximum Residual Disinfectant Level Goal; **NL** = Notification Level; **n/a** = not applicable; **TT** = treatment technique

*Chemical is regulated by a secondary standard.

Turbidity – combined filter effluent Irvine Ranch Water District Baker Water Treatment Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Chemical
1) Highest single turbidity measurement (NTU)	0.1	0.034	No	Soil Runoff
2) Percentage of samples less than or equal to 0.3 NTU	95%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. **NTU** = nephelometric turbidity units
Low turbidity in the treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT).
A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly.

Source Water Assessments

USEPA requires water suppliers to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWDSC completed its SWA in December 2002. The most recent SWA for IRWD's Santiago Reservoir was completed in 2001. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed.

Every five years, water suppliers are required by DDW to examine possible sources of drinking water contamination in their water sources. The watershed sanitary survey for MWDSC's Colorado River supply was recently updated in 2020 and for the State Water Project supply in 2021. The IRWD's watershed sanitary survey for Santiago Reservoir (Irvine Lake) was updated in 2019.

Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed, and wastewater. Water supplies from Northern California's State Water Project are most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation, and wastewater. Water supplies from the Santiago Reservoir are most vulnerable to contamination from septic systems and wildfires.

Copies of the most recent summary of either Watershed Sanitary Surveys or the SWAs can be obtained by calling SMWD Customer Service at (949) 459-6400.

2023 Santa Margarita Water District Distribution System Water Quality

Disinfection Byproducts	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	48	34 – 59	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	60	17	7.9 – 25	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4 / 4)	1.46	0.92 – 1.77	No	Disinfectant Added for Treatment
Aesthetic Quality					
Color (color units)	15*	1	ND – 1	No	Erosion of Natural Deposits
Odor (threshold odor number)	3*	1	1	No	Erosion of Natural Deposits
Specific Conductance (µmho/cm)	1,600*	848	374 – 1,088	No	Substances that Form Ions in Water
Turbidity (NTU)	5*	<0.10	ND – 0.35	No	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	571	380 – 698	No	Erosion of Natural Deposits
Unregulated Chemicals – Tested in 2023					
Alkalinity, total as $CaCO_3$ (ppm)	Not Regulated	110	70 – 128	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as $CaCO_3$ (ppm)	Not Regulated	209	100 – 296	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	12	6 – 17	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	84	57 – 100	n/a	Salt Present in Water; Naturally Occuring

Eight locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; forty-three locations are tested monthly for color, odor, and turbidity.
MRDL = Maximum Residual Disinfectant Level; **MRDLG** = Maximum Residual Disinfectant Level Goal *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

Microbiological	MCL	MCLG	Highest Number of Detections	Number of Months in Violation	Typical Source of Contaminant
E. coli	(a)	0	0	0	Human and animal fecal waste

(a) Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.

Lead and Copper Action Levels at Residential Taps

	Action Level (AL)	Public Health Goal	90th Percentile Value	Sites Exceeding AL / Number of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	0.2	ND	0 / 51	No	Corrosion of Household Plumbing
Copper (ppm)	1.3	0.3	0.064	0 / 51	No	Corrosion of Household Plumbing

Every three years, at least 50 residences are tested for lead and copper at-the-tap. Santa Margarita Water District tested 51 homes in the most recent set of samples collected in 2021.
Lead was not detected in any sample. Copper was detected in 9 samples; none exceeded the Action Level (AL).
A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Unregulated Chemicals Requiring Monitoring in the Distribution System

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Haloacetic acids (HAA5) (ppb)	n/a	n/a	7.23	2.73 – 12.8	2020
Haloacetic acids (HAA6Br) (ppb)	n/a	n/a	5.57	3.82 – 7.38	2020
Haloacetic acids (HAA9) (ppb)	n/a	n/a	11.7	6.17 – 18.2	2020

About Lead in Tap 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 lead service lines and home plumbing. SMWD 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, (800) 426-4791, or at: www.epa.gov/safewater/lead.

Your Water: Always Available, Always Assured

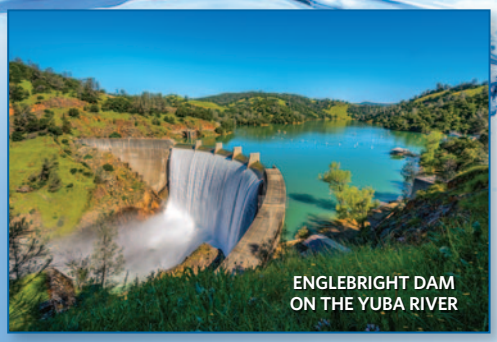
The Diemer Water Treatment Plant, located in the hills above Yorba Linda, processes up to 520 million gallons of clean water per day — enough to fill the Rose Bowl every 4 hours.

The water is a blend from both the Colorado River Aqueduct and the State Water Project.

At 212-acres, it's one of the largest water treatment plants in the U.S. It provides nearly half of Orange County's total water supply.

Water flowing from Diemer meets — or exceeds — all state and federal regulations. And it is kept safe from the treatment plant to your tap by constant testing throughout the distribution network. This constant surveillance ensures your drinking water stays within the requirements mandated by the federal Safe Drinking Water Act.

Where Does Our Water Come From?


ENGLEBRIGHT DAM
ON THE YUBA RIVER

...and How Does It Get to Us?

Have you ever wondered where your water comes from? Here in the Santa Margarita Water District, our water is surface water imported by the MWDSC and IRWD. MWDSC's imported water sources are the Colorado River and the State Water Project, which draws water from the Sacramento-San Joaquin River Delta.

Water from Northern California travels to us through a complex delivery system known as the California State Water Project. Designed and built in the 1960s, the State Water Project is one of the largest public water and power utilities in the world, providing drinking water for more than 25 million people statewide.

Managed by the California Department of Water Resources, the project stretches over 700 miles, from Lake Oroville in the north to Lake Perris in the south. Water stored in Lake Oroville, Folsom Lake, and other tributaries, and fed by snow melt from the Sierra Mountains, flows into the Sacramento and San Joaquin rivers, and from there into reservoirs in the Bay-Delta region.

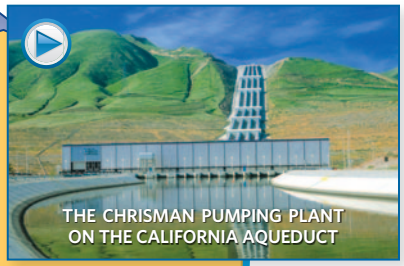
From the Bay-Delta, giant pumps lift the water into the 444-mile-long California Aqueduct, there to flow southward to cities and farms in central and Southern California. Composed mainly of concrete-lined canals, the Aqueduct also includes over 20 miles of tunnels, more than 130 miles of pipelines, and 27 miles of siphons. Along the way, the water is pumped 2,882 feet over the Tehachapi Mountains. The Edmonston Pumping Plant alone lifts millions of gallons a day up 1,926 feet, the highest single water lift in the world.

Is it any wonder the State Water Project is the largest single consumer of power in the State of California?

Managed by the Metropolitan Water District of Southern California, the Colorado River Aqueduct begins near Parker Dam on the Colorado River. There, the Gene Pumping Station lifts the water over 300 feet, and it begins its 242 mile journey to Lake Mathews, just outside the City of Corona. Along the way, the water passes through two reservoirs, five pumping stations, 62 miles of canals, and 176 miles of tunnels, buried conduit and siphons. All told, the water is lifted four times, a total of more than 1,300 feet.

After its journey across the Mojave Desert, the water descends into the Coachella Valley and through the San Gorgonio Pass. Near Cabazon, the aqueduct flows underground, passing beneath the San Jacinto Mountains and continuing until it reaches its terminus at Lake Mathews. From there, 156 miles of distribution lines, along with eight more tunnels, delivers the water throughout Southern California.


THE GENE PUMPING STATION
ON THE COLORADO AQUEDUCT


THE CHRISMAN PUMPING PLANT
ON THE CALIFORNIA AQUEDUCT

Total Dissolved Solids, Alkalinity, and Hardness

Total Dissolved Solids (TDS) is an indicator of the aesthetic characteristics of drinking water, and a gauge of a broad array of chemical constituents within the water. It is a measure of all the combined inorganic and organic substances, and while it is not associated with any health effects, TDS can impact the appearance and taste of water.

TDS is mainly inorganic salts, as well as a small amount of organic matter. Common inorganic salts found in water include calcium, magnesium, potassium and sodium, along with nitrates, chlorides and sulfates. These minerals originate from a variety of sources, both natural and through human activity.

Alone, dissolved solids are usually not a health hazard. Some people, in fact, buy mineral water, which has naturally elevated levels of dissolved solids. The USEPA includes TDS as a secondary standard, meaning it is a voluntary guideline for aesthetic and cosmetic effects. Kept within the established guidelines, TDS can impart a favorable taste to water. Too low, however, can give water a flat taste.

There are issues, however, with high levels of TDS. Increased TDS concentrations can produce hard water, which stains household fixtures, corrodes pipes, and imparts a metallic taste.

Total Dissolved Solids
Average Amount: **571 mg/L**
Range: **380 – 698 mg/L**

Alkalinity
Average Amount: **110 mg/L**
Range: **70 – 128 mg/L**

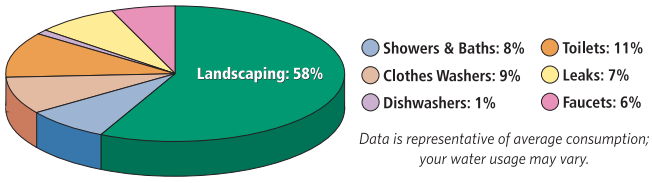
Hardness
Average Amount: **209 mg/L**
Range: **100 – 296 mg/L**

Within the SMWD system, however, you can be assured that TDS are kept well within the established secondary standards.

Where Do We Use Water the Most?

Outdoor watering of lawns and gardens makes up approximately 60% of home water use. By reducing your outdoor water use — by either cutting back on irrigation or planting more drought tolerant landscaping — you can dramatically reduce your overall water use.

Save the most where you use the most: Make your outdoor use efficient.



Data is representative of average consumption; your water usage may vary.

Water Conservation is Always a Priority

Southern California has an arid climate and wise water use needs to become a part of everyone's daily lives. For as finite as our water resources are, they get smaller every year. Simple water saving acts like the ones listed here can save countless gallons of water every day.

- Soak pots and pans instead of letting water run while you scrub them clean. ***This both saves water and makes the job easier.***
- Keep a pitcher of drinking water in the refrigerator. ***This can save gallons of water every day and it's always cold!***
- Plug the sink instead of running water to rinse your razor. ***This can save upwards of 300 gallons of water a month.***
- Use a broom instead of a hose to clean off sidewalks and driveways. ***It takes very little time to sweep and the water savings quickly adds up.***
- Check your sprinkler system for leaks, overspray, and broken sprinkler heads and repair promptly. ***This can save countless gallons each time you water.***
- Water plants in the early morning. ***It reduces evaporation and ensures deeper watering.***
- Check your toilets for leaks and make sure to close showers and faucets properly. ***This can save countless gallons of water.***

How Can You Learn More?

There's a wealth of information on the internet about Drinking Water Quality and water issues in general. Some good sites to begin your own research are:

Metropolitan Water District of So. California:
www.mwdh2o.com

California Department of Water Resources:
www.water.ca.gov

The Water Education Foundation: www.watereducation.org

To learn more about **Water Conservation & Rebate Information**:
http://smwd.com/conservation

And to see the Aqueducts in action, checkout these two videos:

Wings Over the State Water Project: youtu.be/8A1v1Rr2neU

Wings Over the Colorado Aqueduct: youtu.be/KipMQh5t0f4

We Invite You to Learn More About Your Water's Quality

For information about this report, or your water quality in general, please contact Customer Service at (949) 459-6420 or custservice@smwd.com.

The Santa Margarita Water District has two Regular Board meetings each month. Meeting details can be found on the District's website at https://smwd.com/meetings.

Please feel free to participate in these meetings.

For more information about the health effects of the listed contaminants in the following tables, call the USEPA hotline at (800) 426-4791. The USEPA also maintains a water-related website at www.epa.gov/safewater.

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