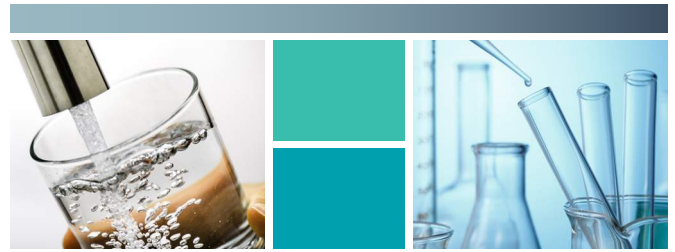


City of Oceanside Water Quality Report 2019



City of Oceanside's Tap Water Supply Met All State and Federal Health Standards in 2019

The City of Oceanside is committed to providing you with safe drinking water. Your water is routinely tested for about 90 different substances to ensure the water is of the highest quality. This report lists the substances that were detected during 2019 and includes details about where your water comes from. For more information about your water, contact Lori Rigby at (760) 435-5912.

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse la ciudad de Oceanside a (760) 435-4500 para asistirlo en español.

Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as individuals 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 for infections. These people should seek advice about drinking water from their health care providers. The United States Environmental Protection Agency (US 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 at (800) 426-4791.

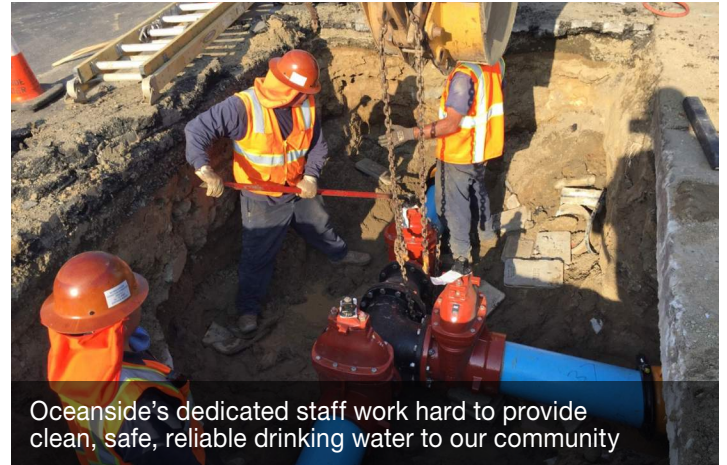


The City's Water Treatment Process

The City of Oceanside's Water Utilities Department is responsible for treating the City's drinking water to ensure viruses, bacteria and pathogens are removed, and the water meets or exceeds federal and state health standards. The City's treatment facilities are maintained and operated by highly trained individuals who are required to hold water treatment certifications.

Imported untreated water is treated at the **Robert A. Weese Filtration Plant**. This plant successfully uses a direct filtration process which consists of rapid mix, flocculation, filtration and disinfection to treat water to drinking water standards and is capable of treating up to 25 million gallons per day.

The **Mission Basin Groundwater Purification Facility (MBGPF)** uses reverse osmosis (RO) to treat local brackish groundwater extracted from the Mission Basin to provide 10% of the City's drinking water. The RO treatment process reduces salt concentration in the groundwater. Additional treatment is done using the Granular Activated Carbon filtration system which removes additional contaminants commonly found in groundwater.



Oceanside's dedicated staff work hard to provide clean, safe, reliable drinking water to our community



The Water Utilities Department maintains and operates the Robert A. Weese Filtration Plant 24/7



Reverse osmosis filters are used to treat the City's groundwater

Oceanside delivers . . .

20 million gallons per day
of clean drinking water to homes
and businesses

Where Our Water Comes From

Approximately 90% of the water we use in Oceanside is imported from hundreds of miles away. This is surface water from lakes and rivers in Northern California and the Colorado River Basin. The Metropolitan Water District (MWD) imports this water to Southern California via a 242-mile-long aqueduct that carries Colorado River water from Lake Havasu, and a 444-mile-long aqueduct bringing water from the Sacramento-San Joaquin Delta. Both aqueducts terminate in Lake Skinner in Riverside County, where these waters are combined. San Diego County Water Authority (SDCWA) purchases this imported water from MWD and distributes it to water agencies throughout San Diego County, including the City of Oceanside.

Did You Know a New Source of Water is Coming to Oceanside?

Imported water currently provides 90% of Oceanside's water but it comes with challenges. It is subject to changing costs out of the City's control, requires an enormous amount of energy and expense to transport, and is vulnerable to natural disasters like earthquakes and drought.

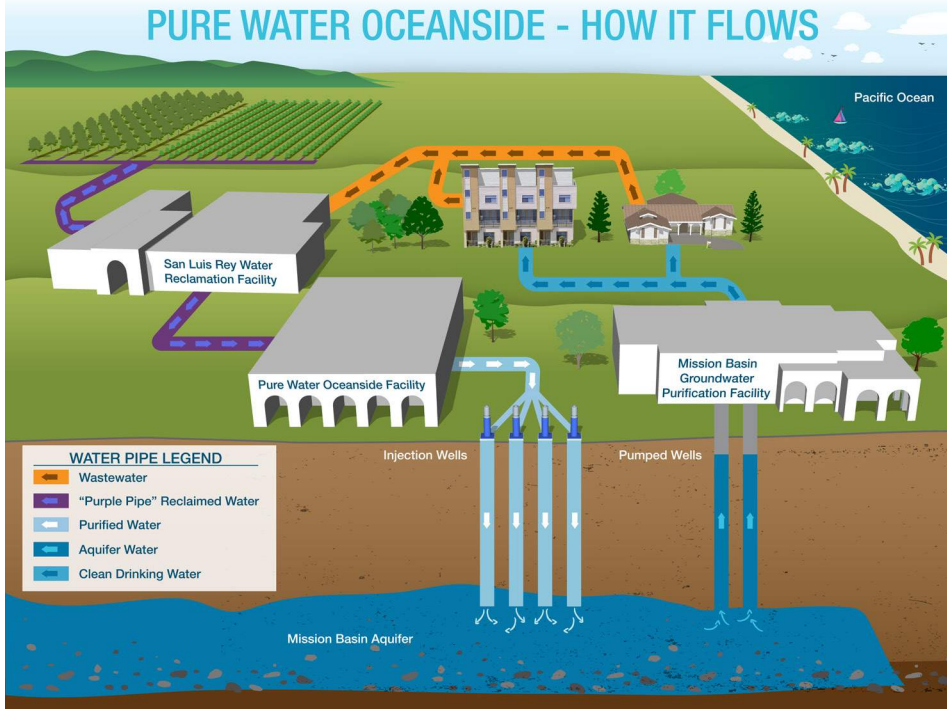
Based on our current high reliance on imported water, Oceanside's City Council set a goal of a 50% local water supply by 2030. The City then identified a local source of water that will **REDUCE** reliance on imported water, **CREATE** a local and sustainable water source for Oceanside and **DIVERSIFY** our water supply.

The Project - Pure Water Oceanside is under construction now!

When complete, it will produce enough water to provide more than 30% of the City's daily water supply. Pure Water Oceanside is an advanced water purification process that will purify recycled water. The creation of this new, local source will provide customers with high-quality drinking water that is clean, safe, environmentally sound and drought-proof.



PURE WATER OCEANSIDE - HOW IT FLOWS



Pure Water Oceanside

is a **smart investment** that will help stabilize water costs over time.



Reduce reliance on imported water



Financially competitive with imported and desalinated water rates



Improve groundwater resources



Enhance resiliency during droughts and climate change



Increase local, sustainable water supplies



Environmentally sound



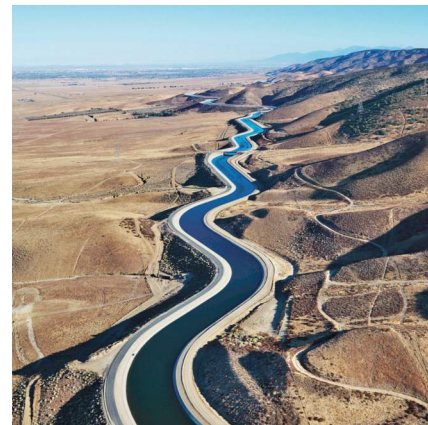
WATER PURIFICATION How it Works

- 1 Filtration
- 2 Reverse Osmosis
- 3 Ultraviolet Light Advanced Oxidation
- 4 Groundwater Basin Injection
- 5 Treatment Mission Basin Groundwater Purification Facility
- 6 Delivery

THE PROCESS

Source Water Assessment

In December 2002, MWD completed its source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered most vulnerable to urban/stormwater runoff, wildlife, agriculture, recreation and wastewater. A summary of the assessment can be obtained by contacting MWD at (213) 217-5696. The Carlsbad Desalination Plant completed a source water assessment (Watershed Sanitary Survey) in August 2005. The survey was performed to investigate potential contaminant sources in the Pacific Ocean in the vicinity of the intake structure and in the watershed of the Agua Hedionda Lagoon. The potential contaminant sources evaluated in the Watershed Sanitary Survey are not likely to impact the water quality at the desalination plant. A summary of the assessment can be obtained by contacting the Carlsbad Desalination Plant at (702) 606-8742.



Groundwater Assessment

An assessment of the current groundwater sources for the City was completed in February 2002. The sources are considered most vulnerable to contamination from the following activities: sewer collections and/or agricultural/irrigation wells. A copy of the complete assessment is available at the City of Oceanside Water Utilities Department at 300 North Coast Highway in Oceanside. You may request a summary of the assessment at (760) 435-5800.

Contaminants in Source Water

The sources of drinking water (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.

Utilities Commission Meetings

The Oceanside Utilities Commission meets bi-monthly in the City Council Chambers at 300 North Coast Highway. The public is welcome to participate in these meetings. For more information, please call (760) 435-5800.

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 which can also come from gas stations, urban stormwater runoff, agricultural application and septic systems.

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

SDCWA Tier 2 Violation

The San Diego County Water Authority (SDCWA) experienced a treatment process failure at its regional treatment plant on April 21-22, 2019. Water in the treatment plant was not in contact with the proper dosage of ozone disinfectant for the required amount of time. On April 21-22, 2019, a segment of the disinfection treatment facility did not provide the intended disinfection of pathogens. Upon being notified of the malfunction, a review of the overall pathogen removal at the treatment plant was performed. The required pathogen removal was most likely achieved, but this is unable to be confirmed given the malfunction. SDCWA implemented policy and engineering changes to immediately identify and correct improper valve conditions that led to the April 21-22 incident. SDCWA has prepared new procedures for ensuring the continuous disinfection treatment facility is operating as designed and required. Inadequately treated water may contain disease causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Although the City of Oceanside did not have a violation at either of our treatment plants, the City received 16% of its water from the SDCWA which blended with our own.

Fluoride

Fluoride is naturally occurring in small amounts in Oceanside's water sources and no additional fluoride is added during the water treatment process at either Robert A. Weese or MBGPF. Only imported treated water from SDCWA has fluoride added during water treatment; this treated water is delivered to the area south of Oceanside Blvd. Treated water has an average of 0.7 mg/L. Water delivered to all other areas in the City has fluoride levels with an average of 0.2 mg/L. If the City's treatment plants are not operational, fluoride can vary in levels up to 0.8 mg/L depending on how much purchased treated water is being delivered.

Lead

The drinking water is tested for lead every three years and was last tested in 2018. Samples were collected inside fifty-two private homes and at the

entry points to the water distribution system. There was no lead detected in the water entering the distribution system and no detections of lead collected in private homes. Thirty-four kindergarten through twelfth-grade schools requested lead sampling in 2018 and all locations were sampled by the City of Oceanside and one elementary school was sampled in 2019. Lead in drinking water is primarily from materials and components associated with service lines and private plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Oceanside is responsible for providing high quality drinking water, but cannot control the variety of materials used in private plumbing components. 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 have concerns 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 or at www.epa.gov/safewater/lead.

Contaminants in Drinking Water

To ensure tap water is safe to drink, the US EPA and the State Water Resources Control Board (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 water poses a health risk. More information about contaminants and potential health effects can be obtained from the USEPA's Safe Drinking Water Hotline at (800) 426-4791 or www.epa.gov/safewater.

Drinking Water Disinfection

It is important to disinfect treated drinking water in order to destroy pathogens that can make people sick. The disinfection must be present in the drinking water system all the way to each home, business and industry. To achieve this long lasting residual, the City uses chloramines to disinfect the drinking water from each source. Chloramines provide a stable residual throughout the distribution system delivering safe drinking water to each of our customers.

Unit	MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Source Waters					Sources in Drinking Water	
					R.A. Weese surface water	MBGPF ground water	SDCWA surface water	MWD surface water	Carlsbad Desalination Plant		
PRIMARY DRINKING WATER STANDARDS (PDWS) -- Mandatory Health-Related Standards											
Combined Filter Effluent Turbidity (a)	NTU	TT=1 NTU	NA	NA	Highest %<0.3 NTU	0.15 100	NA NA	0.02 100	0.07 100	0.06 100	Soil runoff
INORGANIC											
Aluminum (b)	mg/L	1	0.6	0.05	Range Average	0.048 - 0.14 0.09	NA ND	ND ND	ND - 0.94 0.051	ND ND	Erosion of natural deposits; residue from surface water treatment process
Arsenic	µg/L	10	0.004	2	Range Average	NA 1	NA 0.47	NA 3	NA ND	ND ND	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium	mg/L	1	2	0.1	Range Average	NA 0.11	NA 0.04	NA 0.05	NA ND	ND ND	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Fluoride Natural	mg/L	2	1	0.1	Range Average	0.12 - 0.27 0.2	0.07 - 0.20 0.1	0.1 - 0.2 0.2	0.1 - 0.2 0.2	NA NA	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Fluoride (c) Added	mg/L	2.0	Optimal Control 1	0.1	Range Average	NA Not added	NA Not added	0.5 - 0.7 0.7	0.3 - 0.8 0.7	0.6 - 0.8 0.7	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Selenium	µg/L	50	30	5	Range Average	NA 2.2	NA ND	NA ND	ND ND	ND - 5.89 ND	Discharge from mines, chemical manufacturers and refineries; erosion of natural deposits
Nitrate as N	mg/L	10	10	0.4	Range Average	0.12 - 0.19 0.14	0.97 - 1.88 1.24	0.2 - 0.4 0.3	NA ND	ND ND	Runoff & leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Copper (d)	mg/L	1.3 (AL)	0.3	0.05	Range for 50 homes sampled = ND - 0.370 90th percentile for 50 homes sampled = 0.138					Internal corrosion of household plumbing; leaching of wood preservatives; erosion of natural deposits	
Lead (d)	µg/L	15 (AL)	0.2	5	Range for 50 homes sampled = ND 90th percentile for 50 homes sampled = 0					Internal corrosion of household plumbing; discharges from industrial manufacturers; erosion of natural deposits	
ORGANIC											
Trichloroethylene (TCE)	µg/L	5	1.7	0.5	Range Average	NA NA	ND - 2.7 0.7	NA ND	ND ND	ND ND	Discharge from metal degreasing sites and other factories
MICROBIOLOGICAL											
Total Coliform Bacteria (e)	%	5	(0)	NA	Range Average	Distribution System = ND					Naturally present in the environment
RADIOLOGICAL (f)											
Gross Alpha	pCi/L	15	(0)	3	Range Average	NA 2.12	3.6 - 4.7 4.2	ND ND	ND - 4 ND	ND ND	Erosion of natural deposits
Gross Beta	pCi/L	50	(0)	4	Range Average	NA NA	NA NA	ND - 3.5 2.3	ND - 5 ND	ND ND	Decay of natural and man-made products
Uranium	pCi/L	20	0.43	1	Range Average	NA 1.97	3.8 - 3.9 3.8	1.0 - 1.1 1.1	ND - 3 ND	ND ND	Erosion of natural deposits
Disinfection by Products (DBP)											
Total Chlorine (g)	mg/L	(RAA) [4.0]	[4.0]	NA	Distribution System wide range = 0.09 - 3.5 Distribution System highest RAA = 2.7					Drinking water disinfectant added for treatment	
HAA5 (h)	µg/L	(LRAA) 60	NA	1	Distribution System wide range = 2.6 - 28 Distribution System highest LRAA = 29					By-product of drinking water disinfection	
Total Trihalo-methanes (h)	µg/L	(LRAA) 80	NA	1	Distribution System wide range = 13.3 - 76.2 Distribution System highest LRAA = 57					By-product of drinking water disinfection	

The data tables above and on the following page list all the substances detected in the drinking water during 2019 or the most recent sampling within the last five years. The presence of these substances does not necessarily constitute a health risk. The table contains the name of each substance, unit of measurement, the highest level allowed, the ideal goals, reportable detection level, amount detected and the usual source of the substance. Some substances are not tested each year because the concentrations do not vary significantly from year to year. For these substances, the table includes data from the most recent testing completed.

	Unit	MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Source Waters					Sources in Drinking Water
						R.A. Weese surface water	MBGPF ground water	SDCWA surface water	MWD surface water	Carlsbad Desalination Plant	
SECONDARY STANDARDS – Aesthetic Standards											
Chloride	mg/L	500	NA	NA	Range	55 - 86	105 - 127	NA	68 - 78	66 - 94	Runoff/leaching from natural deposits; seawater influence
					Average	67	115	75	73	79	
Color	Units	15	NA	NA	Range	ND - 3	ND - 3	ND	ND - 2	ND	Naturally occurring organic materials
					Average	ND	ND	ND	1	ND	
Odor	Units	3	NA	NA	Range	ND	ND	NA	NA	ND	Naturally occurring organic materials
					Average	ND	ND	1	1	ND	
Sulfate	mg/L	500	NA	NA	Range	62 - 223	123 - 153	NA	90 - 108	10 - 19	Runoff/leaching from natural deposits; industrial wastes
					Average	117	136	89	99	12	
Total Dissolved Solids	mg/L	1000	NA	NA	Range	304 - 560	483 - 578	NA	330 - 379	147 - 282	Runoff/leaching from natural deposits
					Average	402	535	340	354	212	
Turbidity (i)	Units	5	NA	NA	Distribution System wide range = 0.10 - 0.40 Distribution System wide average = 0.15					Soil runoff	
Iron	µg/L	300	NA	NA	Range	NA	ND - 19	ND	ND	ND	Leaching from natural deposits; industrial wastes
					Average	NA	ND	ND	ND	ND	
Manganese	µg/L	50	NA	NA	Range	NA	ND - 4.2	ND	ND	ND	Leaching from natural deposits
					Average	NA	0.82	ND	ND	ND	
UNREGULATED CONTAMINANTS (UCMR4) (j)											
Manganese	µg/L	NA	NA	NA	Range	ND	NA	NA	NA	NA	Leaching from natural deposits
					Average	ND	0.97	NA	NA	NA	
HAA9	µg/L	NA	NA	NA	Range	Distribution System wide range = 10 - 32					By-product of drinking water chlorination
					Average	Distribution System wide average = 23					
Total Organic Carbon (k)	mg/L	NA	NA	NA	Range	NA	NA	NA	NA	NA	Naturally occurring element
					Average	3	NA	NA	NA	NA	
Bromide (k)	µg/L	NA	NA	NA	Range	NA	NA	NA	NA	NA	Naturally occurring element
					Average	58.0	NA	NA	NA	NA	
ADDITIONAL PARAMETERS											
Alkalinity as CaCO ₃	mg/L	NA	NA	NA	Range	74 - 112	80 - 100	NA	84 - 87	37 - 75	Leaching from natural deposits
					Average	89	87	86	86	62	
Boron	µg/L	1000(NL)	NA	100	Range	NA	NA	NA	NA	460 - 733	Fertilizer and pesticide runoff; Leaching from natural deposits
					Average	NA	NA	120	120	596	
Calcium	mg/L	NA	NA	NA	Range	26 - 71	44 - 61	NA	33 - 39	16 - 25	Leaching from natural deposits
					Average	40	51	34	36	19	
Magnesium	mg/L	NA	NA	NA	Range	11 - 27	23 - 31	NA	14 - 16	0.6 - 1.3	Leaching from natural deposits
					Average	16.0	26	14	15	0.8	
pH	pH units	NA	NA	NA	Range	8.1 - 8.5	7.9 - 8.6	7.6 - 8.5	8.1 - 8.2	6.0 - 8.7	Measure of the acidic or basic character of water
					Average	8.2	8.1	8.2	8.1	8.5	
Sodium	mg/L	NA	NA	NA	Range	NA	NA	NA	62 - 69	48 - 78	Salt present in the water, usually naturally occurring
					Average	92	74	64	66	62	
Total Hardness	mg/L	NA	NA	NA	Range	110 - 290	200 - 280	NA	139 - 164	39 - 62	Sum of magnesium and calcium, naturally occurring in the environment
					Average	164	237	140	152	48	
Total Hardness	grains/gal	NA	NA	NA	Range	6.4 - 16.9	11.7 - 16.4	NA	8.1 - 9.6	2.3 - 3.6	Sum of magnesium and calcium, naturally occurring in the environment
					Average	9.6	14	8.2	8.9	2.8	

You Can Count on Oceanside to . . .



DELIVER
clean, safe and reliable water every day



SUPPLY
affordable, cost effective and cost-competitive water/wastewater rates



PROVIDE
a reliable source of drinking water



ENSURE
a dependable wastewater collection system



MAINTAIN
water and wastewater services to improve your quality of life, safeguard the economy and sustain the environment

Terms and Abbreviations

- AL - Regulatory Action Level**, the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- DLR - Detection Limit for Purposes of Reporting**, the lowest level that can be reliably detected and quantified.
- Grains Per Gallon** - a unit of water hardness defined as 1 grain (64.8 milligrams) of calcium carbonate dissolved in 1 US gallon of water (3.785 liters). It translates to 17.1 parts per million.
- HAA5** - sum of Five Regulated HAAs, i.e., Monochloroacetic Acid, Monobromoacetic Acid, Dichloroacetic Acid, Dibromoacetic Acid and Trichloroacetic Acid.
- HAA9** - sum of Bromochloroacetic Acid, Bromodichloroacetic Acid, Chlorodibromoacetic Acid, Dibromoacetic Acid, Dichloroacetic Acid, Monobromoacetic Acid, Monochloroacetic Acid, Tribromoacetic Acid and Trichloroacetic Acid.
- LRAA** - Locational Running Annual Average
- MCL - Maximum Contaminant Level**, 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.
- MCLG - Maximum Contaminant Level Goal**, 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.
- MRDL - Maximum Residual Disinfectant Level**, 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.
- MRDLG - Maximum Residual Disinfectant Level Goal**, 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.
- NA - Not Applicable** or not specified
- ND - Not Detected**
- NTU** - Nephelometric Turbidity Units
- pCi/L - Picocuries per liter**, a measure of radiation
- PDWS - Primary Drinking Water Standard**, MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- PHG - Public Health Goal**, 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.
- RAA - Running Annual Average**, the monthly average of all samples computed each quarter and averaged for four consecutive quarters.
- TT - Treatment Technique**, a required process intended to reduce the level of a contaminant in drinking water.

Table Footnotes

- a) Turbidity is a measure of the cloudiness of the water. We monitor it because it indicates the effectiveness of our filtration system. Treatment plant effluent turbidity is recorded every 15 minutes. The turbidity of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month. Turbidity for the Carlsbad Desalination Plant effluent is required to be less than or equal to 0.1 NTU in 95% of the measurements taken each month. Turbidity shall not exceed 1.0 NTU at any time.
- b) Aluminum also has a secondary MCL of 2 mg/L.
- c) MWD started fluoridation treatment in 2007. Some MWD water is used to supplement Oceanside's treated water. Oceanside does not currently fluoridate during treatment.
- d) Lead and Copper are sampled every three years at consumers' taps and was last sampled in 2018. If the Action Level is exceeded in 10% of the samples (90th percentile) then the water supplier must modify the treatment process to prevent the leaching of these metals into the water from the plumbing. None of the samples exceeded the Action Levels.
- e) No more than 5.0% of all monthly samples taken in the distribution system may be Total Coliform positive. In 2019 there were 1,628 samples taken throughout the City and none were positive.
- f) Some locations are analyzed up to every nine years. R.A. Weese was sampled in 2017, MBGPF was sampled in 2019, MWD was sampled in 2017, and SDCWA was sampled in 2016.
- g) Compliance is based on a running annual average (RAA) of 30 distribution system samples taken each month. The City of Oceanside uses chloramines for disinfection.
- h) Compliance is based on a locational running annual average (LRAA) of 8 distribution system sample locations taken every quarter.
- i) Turbidity is also tested at 30 locations each month within the distribution system and reported under Secondary Standards.
- j) UCMR4 = Unregulated Contaminants Monitoring Rule 4. The EPA requires monitoring in order to determine if there is a need to regulate these compounds. Testing for R.A. Weese and MBGPF was completed in 2018.
- (k) Total Organic Carbon and bromide results were collected from Weese source water.