

2019 Water Quality Report



The City of
Seal Beach
Water Department

Gene Pumping Station
Parker Dam, Colorado River

Data for 2018

Your 2019 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 2018 drinking water quality testing and reporting.**

Your City of Seal Beach Water Department vigilantly safeguards its water supply and, as in years past, the water delivered to your home meets 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.

In some cases, the City goes beyond what is required by testing for unregulated chemicals that may have known health risks, but do not have drinking water standards. For example, the Orange County Water District (OCWD), which manages the groundwater basin, and the Metropolitan Water District of Southern California (MWD), which supplies treated imported surface water to the City, test for unregulated chemicals in our water supply.

Unregulated chemical monitoring helps the USEPA and DDW determine where certain chemicals occur and whether new standards need to be established for those chemicals.

Through drinking water quality testing programs carried out by OCWD for groundwater, MWD for treated surface water, and the Seal Beach Water Department for the distribution system, your drinking water is constantly monitored from source to tap for regulated and unregulated constituents.

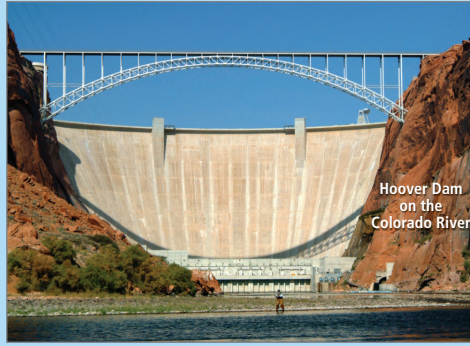
The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.



The Quality of Your Water Is Our Primary Concern

Sources of Supply

Your water supply is a blend of groundwater pumped from three local wells by the City of Seal Beach Water Department and water imported from Northern California and the Colorado River by the Municipal Water District of Orange County (MWDOC) via the MWD.



Groundwater comes from a natural underground aquifer that is replenished with water from the Santa Ana River, local rainfall, imported water, and the Groundwater Replenishment System. The groundwater basin is 350 square miles and lies beneath north and central Orange County from Irvine to the Los Angeles County border and from Yorba Linda to the Pacific Ocean. More than 20 cities and retail water districts draw from the basin to provide water to homes and businesses.

Orange County's Water Future

For years, Orange County has enjoyed an abundant, seemingly endless supply of high-quality water. However, as water demand continues to increase statewide, we must be even more conscientious about our water supply and maximize the efficient use of this precious natural resource.



OCWD, MWDOC, and the City of Seal Beach work cooperatively to evaluate new and innovative water management and supply development programs, including water reuse and recycling, wetlands expansion, recharge facility construction, ocean and brackish water desalination, surface storage, and water use efficiency programs. These efforts are helping to enhance long-term countywide water reliability and water quality.

A healthy water future for Orange County rests on finding and developing new water supplies, as well as protecting and improving the quality of the water that we have today. Your local and regional water agencies are committed to making the necessary investments in new water management projects today to ensure an abundant and high-quality water supply for our future.

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.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

- **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.
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production or mining activities.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gasoline stations, urban stormwater runoff, agricultural application, and septic systems.



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.

Immuno-Compromised 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, and some elderly persons and infants can be particularly at risk to infection. These people should seek advice about drinking water from their health care providers.



The USEPA and the national 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).

Questions about your water? Contact us for answers.

For information about this report, or your water quality in general, please contact Darrick Escobedo at (562) 431-2527 ext. 1409.

For information regarding opportunities to participate in decisions that may affect the quality of your water, please contact Darrick Escobedo at (562) 431-2527 ext. 1409.

For more information about the health effects of the listed contaminants in the following tables, call the USEPA hotline at (800) 426-4791.

Federal and State Water Quality Regulations

— Water Quality Issues that Could Affect Your Health —

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.

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 of supply (groundwater well or surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution system pipes. This "residual" 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 annual average level to 80 parts per billion and added HAAs to the list of regulated chemicals in drinking water. Your drinking water complies with the Stage 1 Disinfectants / Disinfection Byproducts Rule.

Stage 2 of the regulation was finalized by the 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.



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, MWD joined a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay. In line with recommendations from the DDW, as well as the U.S. Centers for Disease Control and Prevention, MWD adjusted the natural fluoride level in imported treated water from the Colorado River and State Water Project to the optimal range for dental health of 0.6 to 1.2 parts per million. Our three local groundwater wells are not supplemented with fluoride; they have naturally occurring fluoride levels of 0.43 parts per million or less. Fluoride levels in drinking water are limited under California state regulations at a maximum dosage of 2 parts per million.

2018 Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG, or (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
Inorganic Chemicals – Tested in 2018						
Aluminum (ppm)	1	0.6	0.124	ND – 0.31	No	Treatment Process Residue, Natural Deposits
Barium (ppm)	1	2	0.117	0.117	No	Refinery Discharge, Erosion of Natural Deposits
Bromate (ppb)	10	0.1	2	ND – 4.7	No	Byproduct of Drinking Water Disinfection
Fluoride (ppm)	2	1	0.7	0.6 – 0.9	No	Water Additive for Dental Health
Secondary Standards* – Tested in 2018						
Aluminum (ppb)	200*	600	124	ND – 310	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	94	92 – 95	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	n/a	ND	ND – 1	No	Naturally-occurring Organic Materials
Odor (threshold odor number)	3*	n/a	2	1 – 4	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	906	852 – 961	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	199	178 – 220	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	565	523 – 607	No	Runoff or Leaching from Natural Deposits
Unregulated Chemicals – Tested in 2018						
Alkalinity, total as CaCO ₃ (ppm)	Not Regulated	n/a	106	99 – 114	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	58	52 – 65	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as CaCO ₃ (ppm)	Not Regulated	n/a	240	219 – 262	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	n/a	14	13 – 15	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	23	21 – 25	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8.1	8.1	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	4.4	4.0 – 4.8	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	n/a	92	86 – 98	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	2.4	2.1 – 2.7	n/a	Various Natural and Man-made Sources

ppb = parts per billion; ppm = parts per million; µmho/cm = micromhos per centimeter; ND = not detected; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal; NL = Notification Level; 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	0.3 NTU	0.07	No	Soil Runoff
2) Percentage of samples less than 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
Germanium (ppb)	n/a	n/a	0.1	ND – 0.4	2018
Manganese (ppb)**	SMCL = 50	n/a	1.7	0.8 – 2.5	2018

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.

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 chart in this report shows 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 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.
- **Secondary MCLs:** 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.

How are Contaminants Measured?

Water is sampled and tested throughout the year. Contaminants are measured in:

- parts per million (ppm) or milligrams per liter (mg/L)
- parts per billion (ppb) or micrograms per liter (µg/L)
- parts per trillion (ppt) or nanograms per liter (ng/L)

What is a Water Quality Goal?

In addition to mandatory water quality standards, USEPA and 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 guideposts and direction for water management practices. The chart in this report includes 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 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.
- **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.

2018 City of Seal Beach Groundwater Quality

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Contaminant
Radiologicals							
Uranium (pCi/L)	20	0.43	<1	ND – 2.32	No	2018	Erosion of Natural Deposits
Inorganic Chemicals							
Fluoride (ppm)	2	1	0.39	0.31 – 0.46	No	2018	Erosion of Natural Deposits
Secondary Standards*							
Chloride (ppm)	500*	n/a	19.2	12.1 – 44	No	2018	Erosion of Natural Deposits
Specific Conductance (µmho/cm)	1,600*	n/a	406	369 – 517	No	2018	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	41.7	35.1 – 66.7	No	2018	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	263	224 – 331	No	2018	Erosion of Natural Deposits
Unregulated Chemicals							
Alkalinity, total (ppm as CaCO ₃)	Not Regulated	n/a	147	108 – 177	n/a	2018	Erosion of Natural Deposits
Bicarbonate (ppm as HCO ₃)	Not Regulated	n/a	174	126 – 216	n/a	2018	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	n/a	26.9	13.5 – 38.2	n/a	2018	Erosion of Natural Deposits
Hardness, total (ppm as CaCO ₃)	Not Regulated	n/a	82.9	37.6 – 127	n/a	2018	Erosion of Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	n/a	4.8	2.2 – 7.4	n/a	2018	Erosion of Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	3.9	1 – 7.8	n/a	2018	Erosion of Natural Deposits
pH (pH units)	Not Regulated	n/a	8.3	8.1 – 8.5	n/a	2018	Acidity, hydrogen ions
Potassium (ppm)	Not Regulated	n/a	1.6	1 – 2.3	n/a	2018	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	n/a	58.1	39.8 – 70.2	n/a	2018	Erosion of Natural Deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; NTU = nephelometric turbidity units; ND = not detected; n/a = not applicable; < = average is less than the detection limit for reporting purposes; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal
*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

Unregulated Chemicals Requiring Monitoring

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Bromide (ppm)	n/a	n/a	0.048	0.036 – 0.069	2018
Manganese (ppb)**	SMCL = 50	n/a	2.13	ND – 5.8	2018
Total Organic Carbon (Unfiltered) (ppm)	n/a	n/a	0.23	0.08 – 0.45	2018

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.

2018 City of Seal Beach Distribution System Water Quality

Disinfection Byproducts	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	30	9.3 – 38	No	Byproducts of chlorine disinfection
Haloacetic Acids (ppb)	60	24	ND – 82	No	Byproducts of chlorine disinfection
Chlorine Residual (ppm)	(4 / 4)	1.2	0.22 – 2.2	No	Disinfectant added for treatment
Aesthetic Quality					
Turbidity (NTU)	5*	0.12	0.12 – 0.15	No	Erosion of natural deposits

Four locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; eighteen locations are tested monthly for color, odor and turbidity. Color and odor were not detected in 2018.

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).

Lead and Copper Action Levels at Residential Taps

	Action Level (AL)	Health Goal	90 th Percentile Value	Sites Exceeding AL / Number of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	0.2	ND	0 / 31	No	Corrosion of household plumbing
Copper (ppm)	1.3	0.3	0.15	0 / 31	No	Corrosion of household plumbing

Every three years, at least 30 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2018. Copper was found in 13 homes; none exceeded the regulatory action level. Lead was not found in any home.

The regulatory action level is the concentration of lead or copper which, if exceeded in more than ten percent of the homes tested, triggers treatment or other requirements that a water system must follow.

In 2018, no school submitted a request to be sampled for lead.

Unregulated Chemicals Requiring Monitoring in the Distribution System

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Bromochloroacetic Acid (ppb)	n/a	n/a	2.7	1.1 – 3.7	2018
Bromodichloroacetic Acid (ppb)	n/a	n/a	1.4	0.7 – 2.1	2018
Chlorodibromoacetic Acid (ppb)	n/a	n/a	0.85	0.5 – 1.3	2018
Dibromoacetic Acid (ppb)	n/a	n/a	1.6	0.8 – 2.2	2018
Dichloroacetic Acid (ppb)	n/a	MCLG = 0	3.9	1.3 – 5.4	2018
Trichloroacetic Acid (ppb)	n/a	MCLG = 20	1.5	0.7 – 2.4	2018

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

U.S. Centers for Disease Control and Prevention

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 MWD's fluoridation program, please contact Edgar G. Dymally at (213) 217-5709 or by email at edymally@mwdh2o.com.

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 service lines and home plumbing. The City of Seal Beach Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing. 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 on the web at: www.epa.gov/safewater/lead.



Source Water Assessments Imported (MWD) Water Assessment

Every five years, MWDSC is required by DDW to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters.

The most recent watershed sanitary surveys of its source water supplies from the Colorado River was updated in 2015 and the State Water Project was updated in 2016.

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.

USEPA also requires MWDSC to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWDSC completed its SWA in December 2002. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed.

A copy of the most recent summary of either Watershed Sanitary Survey or the SWA can be obtained by calling MWDSC at (800) CALL-MWD (225-5693).

Groundwater Assessment

An assessment of the drinking water sources for the City of Seal Beach was completed in December 2002. The groundwater sources are considered most vulnerable to the following activities not associated with detected contaminants: sewer collection systems and military installations.

A copy of the complete assessment is available at State Water Resources Control Board, Division of Drinking Water, 2 MacArthur Place, Suite 150, Santa Ana, California 92707. You may request a summary of the assessment by contacting the City of Seal Beach Water Department at (562) 431-2527 ext. 1409.

You Can Depend On Us to Deliver Quality Water



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 there, always safe 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 purify and clarify water;
- ◆ 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.

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.*



City of Seal Beach

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