2011 Conservation Update and Water Quality Report

Conservation:
It's Not Just for Droughts Anymore

If you've lived in California for any length of time, you know that droughts come and go. When droughts come, we're all pretty conscientious about our water use. When droughts go, it's easy to fall back into our water-wasting ways. But we can't afford to do that this time around, and here's why.

Growing population We have the same amount of water today as we did when the dinosaurs roamed the earth, and yet, the state's population continues to grow.

Delta in Trouble Nearly two-thirds of Californians receive water transported though the Sacramento-San Joaquin Delta, and it's in trouble. The network of waterways and levees that make up the Delta need significant investment, and even then, flowing too much water through the Delta could hurt sensitive ecosystems.

Colorado River Must Be Shared California depends upon water from the Colorado River, but other states have claimed their share, and California has been ordered to reduce its take.

Groundwater Sustainability Groundwater is an important resource across the state. We need to reduce our use to ensure that we don't harm underground aquifers.

20 by 2020 In response to these challenges, the California Legislature passed a law in 2009 requiring a 20% reduction is per-person water use by 2020, with an interim required reduction of 10% by 2015.

Conservation isn't difficult, but it is essential. Read on to see how you can help us ensure a reliable supply for you and for future generations.

Make a Big Impact in Your Own Backyard

A significant portion of urban residential water use – more than half in most cases – occurs outdoors. That means you can make a big difference by using water efficiently in your own backyard. It all comes down to reducing evaporation, avoiding runoff, and watering only as much as your landscape needs.

- Select native plants whenever possible. Consult your local nursery for a list of water-friendly plants.
- Wait until fall or winter to plant. New plants require more water than established growth.
- Keep low-water-using plants away from "thirsty" plants.
- Keep shade plants in the shade. It sounds obvious, but this will help prevent them from drying out.
- Place water-loving plants at the bottom of slopes where they will benefit from water runoff.
- Use mulch to reduce evaporation.
- Water at dawn or dusk, when temperatures are lower; also, be aware of any ordinance your local government may have about when you can water.
- Install a rain sensor or turn off automatic sprinklers when it rains.
- Check your sprinklers regularly for broken heads, leaks, and overspray.
- A lawn requires more water than native plants, but if you do have grass water it only when necessary; if you step on the grass and it springs right back up, it probably doesn't need water.

Fix a Leak and Save a Lot

Leaks are sneaky; they waste a lot of water and can have a real impact on your water bill. Leaks can occur in pipes, faucets, hoses, sprinkler timers, water softeners, water heaters, and water filtration units, but the most common culprit for indoor leaks is the toilet. To find out if your toilet leaks, listen for the sound of running water. You can also place a dye tablet or a few drops of food coloring in the tank. Don't flush the toilet. If the colored water makes its way into the bowl, the toilet is leaking.

Other indications of household leaks include:

- Dripping faucets
- Unusual wet spots in the house or yard
- Discoloration spreading on a ceiling
- Rooms that are unusually or unseasonably warm or humid

Since we're discussing leaks, it's a good time to speak about mold, too. Molds can be found almost anywhere; they are part of the natural environment. Outdoors, molds play a part in nature by breaking down dead organic matter such as fallen leaves and dead trees. But indoors, mold growth should be avoided. The key to mold control is moisture control. In addition, maintaining the relative humidity between 30 and 60 percent will help control mold.

When excessive moisture accumulates in buildings or on building materials, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed. Respond to water damage within 24-48 hours to prevent mold growth, which depends on moisture. Mold growth can be reduced if the relative humidity near surfaces can be maintained below the dew point. This can be done by:

1. reducing the moisture content (vapor pressure) of the air;
2. increasing air movement at the surface; or
3. increasing the air temperature (either the general space temperature or the temperature at building surfaces).

More information about mold, how to clean it up, and other prevention and control tips can be found by visiting the United States Environmental Protection Agency's webpage at www.epa.gov/mold/preventionandcontrol.html.

Save Water without Breaking a Sweat

No matter where you live – single-family home, duplex, condominium, or apartment – you have many opportunities to save water. And it's easy. Here are a few ways you can save water without breaking a sweat.

- Put your food waste into a compost pile or trash can instead of the garbage disposal, which requires flowing water.
- When you're making coffee, tea, or other water-based beverages, make only as much as you can drink. This not only saves the amount of water left in the pot, it also saves the water that is used to produce the coffee and tea in the first place.
- If you like to take baths (and who doesn't?), plug the tub before you start the water. Even if the water takes time to heat up, you can adjust the temperature as the water runs.
- Never let water run right from the faucet to the drain. If you can't simply turn it off, maybe you can capture the water for later use somewhere else. You ficus plant won't mind!
- Use a commercial car wash instead of washing your car yourself. Modern car washes are generally very water-efficient.
- You can find many more tips online by visiting www.saveourh2o.org/.

Critical Steps to Ensuring Water Quality

Protecting the health and safety of Team Travis is our highest priority, and we are vigilant in our efforts to ensure that our water meets or surpasses state and federal water quality standards. But how are these standards set?

The Safe Drinking Water Act, passes by Congress in 1974, authorizes the United States Environmental Protection Agency (USEPA) to set national standards for drinking water quality based on sound science that weighs potential health risks, available technology, and costs. The USEPA then reviews every regulated constituent every six years to determine whether the standard should be updated. The USEPA also evaluates emerging contaminants, and we conduct extensive sampling for emerging contaminants to provide the USEPA with data.

At a minimum, the California Department of Public Health (CDPH) must adopt and enforce USEPA standards. If it chooses, it can set even more stringent standards, and CDPH often does. Similar to the USEPA, the CDPH takes a methodical approach to setting standards.

First, the CDPH receives a Public Health Goal for a constituent from the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA), which is the level of a contaminant at which there are no know health effects. CDPH then determines how prevalent the contaminant is, whether commercial laboratories have the technology to analyze and detect the contaminant at the goal level, and what the costs would be to monitor and treat the contaminant to meet the goal level. It eventually sets the standard as close as is technically and economically feasible to the Public Health Goal, while placing the greatest emphasis on protecting public health.

Know What's Happening with Your Water

Most of us don't think much about our water as long as we have clean and plentiful supply when we need it. But considering how important water is to our health, safety, and well-being, it's good to know a few basics. In previous sections, we have provided information on using this limited resource wisely. Here, we offer some information on common water quality issues.

Sand or Sediment in the Water

Dirt or sand can occur naturally in ground water or get into water lines during repairs. Water lines are flushed to help remove dirt and sand from the water when necessary, but sometimes sediment makes its way into home plumbing. If you notice particles in your water – or if a faucet has not been used for a period of time and rust or residue from pipes has collected, discoloring your water – let the water run for a minute and it should return to normal. (For you super savers out there: while the water runs, collect the water in a bucket for use in your garden!) After the water returns to normal, remove your faucet's aerator and rinse it to remove collected sediment.

Water Heaters

Milky or bubble water is generally caused by harmless air bubbles. If the water is allowed to sit, the air will dissipate and the water will clear.

Home Treatment Devices

According to the USEPA, home treatment devices are rarely necessary for health reasons, but if you choose to install one, be sure to follow the manufacturer's maintenance instructions, including those in refrigerators. Improperly maintained units can cause water quality problems, such as bacteria growing in carbon filters that are not replaced as recommended.

Spots on Dishes

Spots are caused by minerals in hard water that remain after the water has evaporated. The spots can be reduced by a dishwasher rinse agent.

Weird Coffee

If your coffee has an oily appearance, try cleaning your coffee maker with vinegar and water as directed by the manufacturer.

Chlorine Smell

In many places, drinking water is treated to prevent the spread of germs that can cause serious illness. Sometimes, this disinfection may give your water a chlorine taste or smell. If it does, try refrigerating your water before drinking it.

Protecting the Water Supply

One of our most important responsibilities is protecting our water sources from pollution and contamination, and you can help!

If you have a garden, be aware that fertilizers and other chemicals can get into the groundwater if used excessively. Even organic products contain substances that can cause water quality problems. Work with a gardener or nursery to make sure that you are using appropriate amounts of anything that could impact the environment.

If you take medication, you can also help protect our water supply by responsibly disposing of drugs that are expired or no longer needed. Do not flush them down the toilet or put them in the sink. Instead, contact a pharmacy, your doctor, or the drug's manufacturer for safe disposal instructions. Or, check to see if your city or county participates in National Drug Take-Back Day (www.deadiversion.usdoj.gov/drug_disposal/takeback/).

Understand Where Contaminants Come From

All 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 Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap and bottled) 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 some substances resulting from the presence of animals or 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 stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, which 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, which 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, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the CDPH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health.

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

What about Fluoride?

In The United States, water fluoridation has been widely practiced since 1960, and more than 65% of the largest cities in the United States currently have fluoridated drinking water. Fluoride is believed by medical and dental professionals to be a safe, effective way to prevent tooth decay, and water fluoridation is strongly supported by local, state, and national health agencies, including the American Medical Association, American Dental Association, the CDPH, and the CDC.

However, since 1960, there has been a significant change in the amount of fluoride that the average American ingests from other sources (such as toothpaste). For this reason the Department of Health and Human Services is considering lowering the recommended level of fluoride in fluoridated water to 0.7 parts per million (ppm) from its current range of 0.7 to 1.2 ppm. The USEPA has also announced that it is considering reducing the maximum contaminant level (MCL) for fluoride, which is currently 4.0 ppm. The state of California's MCL for fluoride is 2.0 ppm.

More information about fluoridation, oral health, and current issues can be found on the CDPH web site at www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx.

Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing.

The 60th Civil Engineering Utilities Shop is responsible for providing high quality drinking water through routine maintenance and flushing of the water distribution system, 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 two 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 or at water.epa.gov/drink/info/lead/index.cfm.

Water Main Flushing

"Flushing" is a procedure in which certain fire hydrants are opened under controlled conditions to remove minerals and sediment that build up in water lines over time or enter during water line repairs. Fire hydrants are also sometimes opened in order to ensure that they are operating properly. Because of our focus on water conservation, we only conduct flushing when necessary to ensure good water quality or when local fire agencies require fire protection data.

Although it may seem wasteful to the casual observer, flushing is an important – and necessary – water utility activity. It is endorsed by the American Water Works Association and conducted in accordance with guidelines set by the CDPH. If flushing is being conducted in your area, your service should not be interrupted, but you could notice a temporary dip in water pressure. If you notice any discoloration or sediment in your water after we have flushed, please allow water to run from your outside hose bib until it clears.

Water Hardness

Water's "hardness" is a measure of the amount of minerals (generally calcium and magnesium) it contains. Water is considered soft it its hardness is less than 75 ppm, moderately hard at 75 to 150 ppm, hard at 150 to 300 ppm, and very hard at 300 ppm or higher.

Hard water is generally not a health concern, but it can have an impact on how well soap lathers and is significant for some industrial and manufacturing processes. Hard water may also lead to mineral buildup in pipes or water heaters.

Some people with hard water opt to buy a water softener for aesthetic reasons. However, some water softeners add salt to the water, and this can cause problems at wastewater treatment plants. People on low-sodium diets should be aware that some water softeners increase the sodium content of the water.

Read All About It: Two Current Quality Issues

Two constituents have been in the news lately: perchlorate and chromium-6 (hexavalent chromium).

Bioenvironmental Engineering samples its water for both of these constituents. Although the USEPA has not yet established a standard for perchlorate, the CDPH has. Travis water must meet or surpass the state maximum contaminant level (MCL) for perchlorate, which is 6 parts per billion (ppb).

Although there is no state standard for chromium-6, there is a state standard for total chromium (chromium -6 plus chromium-3). Because chromium-6 is a subset of total chromium, chromium-6 levels could not possibly exceed total chromium levels. Travis water meets or surpasses the current MCL for total chromium, which is 50 ppb.

Where Chromium-6 Comes From

Chromium-6 occurs naturally at low levels in many ground and surfaces waters. It is also used to product stainless steel and textile dyes, preserve wood, and tan leather, among other things. Public health agencies are studying several scientific issues to determine what the limit for chromium-6 in drinking water should be.

More about Perchlorate

Perchlorate can occur both naturally and through manufacturing, but large concentrations of it are more often associated with fertilizer, military installations, or the manufacturing of rockets, fireworks, flares, automobile air bags, and other things that use solid propellants. Because perchlorate is highly water-soluble, it has the potential to be a groundwater contaminant. California established a drinking water maximum contaminant level of 6 ppb for perchlorate in 2007, which is still one of the strictest perchlorate standards in the country.

Put the Standards into Perspective

Water quality standards become increasingly stringent as technology advances, enabling us to detect increasingly minute quantities of substances in water. Most substances are limited on a “parts per million” or “parts per billion” basis. To put that into perspective…

One part per million is:

- One inch in a journey of almost 16 miles.
- A 2.5- inch square on a football field.
- One half of one word in War and Peace.

One part per billion is:

- One inch is six round trips from Los Angeles to New York.
- Three seconds out of 100 years.
- Three tenths of one inch of the Great Wall of China.

How to Read This Table

Bioenvironmental Engineering tests your water for more than 100 regulated contaminants and dozens of unregulated contaminants. A list of regulated contaminants can be found by contacting Bioenvironmental Engineering at (707) 423-5490. The table in this report lists only those contaminants that were detected. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The CDPH 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.

In the table, water quality test results are divided into three main sections: “Primary Drinking Water Standards”, “Secondary Drinking Water Standards and Unregulated Compounds”, and “Other Regulated Substances”. Primary standards protect public health by limiting the levels of certain constituents in drinking water. Secondary standards are set for substances that could affect the water’s taste, odor, or appearance. Selected unregulated substances (hardness and sodium, for example) are listed for your information.

Know the Lingo: Key Definitions

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 Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs protect public health and are set as close to the PHGs (or MCLGs) as are economically and technologically feasible. Secondary MCLs relate to the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant 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.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant in necessary for control of microbial contaminants.

Notification Level (NL): A health-based advisory level for an unregulated contaminant in drinking water. It is used by the CDPH to provide guidance to drinking water systems.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health, along with their monitoring, reporting, and water treatment requirements.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no know or expected risk to health. PHGs are set by the California Environmental Protection Agency’s Office of Environmental Health Hazard Assessment.

Secondary Drinking Water Standard (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.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other required action by the water provider.

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

Variances and Exemptions: CDPH permission to exceed an MCL or not comply with a TT under certain conditions.

µS/cm = microSiemens per centimeter (measure of specific conductance)

N/A = not applicable

ND = not detectable at testing limit

NTU = nephelometric turbidity unit

pCi/L = picoCuries per liter (measure of radioactivity)

ppb = parts per billion (micrograms per liter)

ppm = parts per million (milligrams per liter)

Primary Drinking Water Standards

Chemical or Constituent	Units	MCL [MRDL]	PHG (MCLG) [MRDLG]	Exceeded Standard?	Result	Typical Source of Contaminant
Inorganic Contaminants						
Aluminum	ppm	1.0	0.6	No	0.1	Erosion of natural deposits; residual from water treatment process
Copper	ppm	1.0	0.3	No	0.153	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride Treatment	ppm	2.0	1.0	No	0.886	Water additive that promotes strong teeth
Lead	ppb	15	0.2	No	0.58	Internal corrosion of household plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Nitrate (as nitrate, NO_3)	ppm	45	45	No	10.1	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrite (as nitrogen, N)	ppm	1.0	1.0	No	ND	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors - STAGE 1						
TTHMs (Total Trihalomethanes)	ppb	80	N/A	No	46.1	Byproduct of drinking water disinfection
Halocetic Acids	ppb	60	N/A	No	22.2	Byproduct of drinking water disinfection
Total Organic Carbon[1,2]	ppm	TT = RAA ≥ 1.0	N/A	No	100% of samples ≥ 1.0	Various natural and man-made sources
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors - STAGE 2						
TTHMs (Total Trihalomethanes)	ppb	80	N/A	No	63.3	Byproduct of drinking water disinfection
Halocetic Acids	ppb	60	N/A	No	15.6	Byproduct of drinking water disinfection
Radioactive Contaminants						
Alpha Particle Activity	pCi/L	15	(0)	No	1.84	Erosion of natural deposits
Beta Particle Activity	pCi/L	50	(0)	No	3.59	Decay of natural and man-made deposits
Radium 226	pCi/L	1.0	(0)	No	0.075	Erosion of natural deposits
Radium 228	pCi/L	1.0	(0)	No	0.028	Erosion of natural deposits
Uranium	pCi/L	20	0.43	No	1.37	Erosion of natural deposits
Clarity - Turbidity[3]						
TT = 1.0 NTU	NTU	1.0	N/A	No	0.07	Soil runoff
TT = 95% of samples 0.3 ≤ NTU	NTU	0.3	N/A	No	100% of samples ≤ 0.3	Soil runoff
Microbiological Contaminants						
Total Coliform Bacteria	N/A	> 5% of total monthly samples	(0)	No	1	Naturally present in the environment

Secondary Drinking Water Standards and Unregulated Compounds

Chemical or Constituent	Units	MCL	PHG (MCLG)	Exceeded Standard?	Result	Typical Source of Contaminant
Aluminum	ppb	200	N/A	No	100	Erosion of natural deposits; residual from water treatment process
Chloride	ppm	500	N/A	No	19	Runoff/leaching from natural minerals
Hardness	ppm	N/A	N/A	No	119	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring.
Manganese	ppb	50	N/A	No	32	Leaching from natural minerals
Odor	N/A	3	N/A	No	1.6	Naturally-occurring organic materials
Sodium	ppm	N/A	N/A	No	18	Salt present in the water and is generally naturally occurring
Specific Conductance	µS/cm	1600	N/A	No	365	Substances that form ions when in water
Sulfate	ppm	500	N/A	No	50	Runoff/leaching from natural minerals
Total Dissolved Solids	ppm	1000	N/A	No	226	Runoff/leaching from natural minerals

Other Regulated Substances

Detection of Coliform Bacteria

Microbiological Contaminants	MCL	MCLG	No. of Detections	Months in Violation	Typical Source of Contaminant
Total Coliform Bacteria	More than one sample in a month with a detection	0	1	0	Naturally present in the environment
Fecal Coliform or *E. coli*	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform	0	0	0	Human and animal fecal waste

Detection of Lead and Copper

Metals	Units	AL	PHG	No. of Sites Exceeding AL	Result	Samples Collected	Typical Source of Contaminant
Lead	ppb	15	2.0	0	1.5	30	Internal corrosion of household plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper	ppm	1.3	0.17	0	0.25	30	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

[1]Total organic carbon (TOC) has no health effects; however, TOC provides a medium for the formation of disinfection byproducts. These byproducts include total trihalomethanes (TTHMs) and haloacetic acids (HAAs). The treatment technique dictates that a removal ratio of 1.0 or higher must be achieved.

[2]Compliance is based on the annual running average (RAA) determined quarterly. This means that every three months, we average all samples taken during the prior twelve-month period.

[3]Turbidity is a measurement of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. For compliance, at least 95% of all samples must be less than or equal to 0.3 NTU and no one sample may be greater than 1.0 NTU.

Questions or comments about this report or the

data contained in it can be directed to:

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