

To Our Water Customers

This report is prepared in accordance with the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Public Health (CDPH) regulations under the Safe Drinking Water Act that requires water providers to report annual water quality information to their customers. This publication lists all constituents detected in your water supply over the last nine years (except for some Unregulated Contaminants) and information about your water source, what it contains, how it compares to state and federal standards, and other related information.

For more information about this report, or for any questions relating to your drinking water, please call Davis Public Works at 530-757-5686 and ask for Marie Graham, Rick Thompson, or Dianna Jensen. If you ever have a problem with your water supply after usual working hours, please call the non-emergency police number at 530-747-5400 (land line) or when using a cell phone call 530-758-3600 and you will be connected to a Public Works employee.

Water Conservation

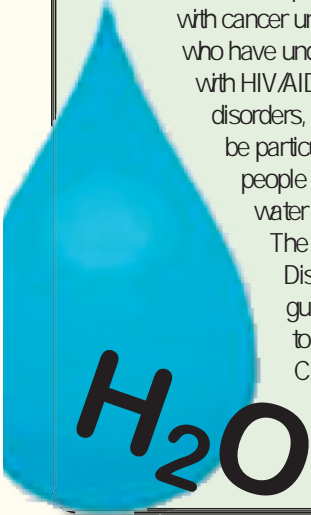
Please visit our web site at www.cityofdavis.org or contact the Public Works office at 530-757-5686 to obtain more information about the City's efforts to conserve water.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immunocompromised 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 may be particularly at risk of infections. These people should seek advice about drinking water from their health care providers.

The U.S. EPA/CDC (Center for Disease Control and Prevention) 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 1-800-426-4791.



H₂O

Where Does Our Water Come From?

During 2009, the City pumped water from 20 municipal wells. These wells draw water from aquifers beneath the City at depths ranging from 210 to 1,800 feet below ground surface. The water is filtered naturally by sands and clays as it passes through geologic formations.

Water Treatment Process

Each well has a designated chlorine tank that injects a 12.5 percent solution of liquid sodium hypochlorite at the well site. The City targets a 0.3 parts per million dosage prior to distribution. Precautions should be taken when using chlorinated water for medical uses, such as in dialysis machines, or when adding water to fish tanks or ponds. No fluoride is added to the water.

In 2007, the City installed a surface treatment facility at Well 29, located on Alhambra Drive. It is an activated carbon adsorption filter system that treats the groundwater to reduce odor before it is chlorinated and delivered into the distribution system.

Tap vs. Bottled Water

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council (NRDC), bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration (FDA) is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States. For a detailed discussion on the NRDC study results, visit their web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Source Water Assessment

A source water assessment for the City of Davis was completed in 2002. The goal of this project was to determine the water system's vulnerability to possible sources of contamination. Our groundwater is most vulnerable to historic and present-day land use activities. These activities include agricultural and light industrial use. Additionally, the water source is vulnerable to naturally occurring contaminants such as selenium and chromium. Overall, there is a slight to moderate threat that the City's water source could become contaminated by these land use patterns and activities. A copy of the complete assessment is available online at <http://swap.ice.ucdavis.edu/TSinfo/TSintro.asp>, or contact Marie Graham at 530-757-5686 or e-mail mgraham@cityofdavis.org.



The East Area Tank, located at the intersection of Mace Boulevard and I-80, south of the Park And Ride, is currently under construction. It will be a 4 million gallon aboveground concrete tank with a pump building. Water will be pumped to the tank, when water demand is low; and used to improve system pressure and to meet emergency demand.



City of Davis 2009 Annual Water Quality Report

What Does Our Water Contain?

Under the Title 22 California Code of Regulations, all public water systems are required to sample their source water and treated water for the presence of specific biological, inorganic, organic, and radioactive constituents. A public water system, such as the City's, is required to sample its source water every three years. For those wells that were not sampled in 2009, the most recent water quality results are used.

The City is also required to monitor the treated water every week for the presence or absence of coliform bacteria and for disinfection by-products. The City samples the system water weekly for bacteria and quarterly for disinfection by-products.

Although the City sampled for hundreds of constituents, only those that were detected (except for coliform bacteria) during routine sampling events are listed below as required by the California Code of Regulations under Title 22.

DETECTION OF A CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD		UNITS	MCL [MRDL]	PHG or (MCLG) [MRDLG]	RANGE DETECTED	WEIGHTED AVERAGE	POTENTIAL SOURCE OF CONSTITUENT
Aluminum	ppb	1000	60	ND - 150	ND	Erosion from natural deposits	
Arsenic	ppb	10	0.004	ND - 6.5	4.7	Erosion from natural deposits	
Barium	ppb	1000	(2000)	ND - 200	ND	Erosion from natural deposits	
Total Chromium	ppb	50	(100)	ND - 47	14.1	Erosion from natural deposits	
Fluoride	ppm	2	1	0.10 - 0.40	0.19	Erosion from natural deposits	
Nitrate (as NO ₃)	ppm	45	45	1 - 36	13.3	Runoff from fertilizer use; leaching from septic tanks and sewage; erosion from natural deposits	
Selenium	ppb	50	(50)	ND - 41	7.0	Erosion from natural deposits	
ORGANIC COMPOUNDS							
Chloroform	ppb	80	NS	ND - 0.75	ND	By-product of water chlorination	
Bromoform	ppb	80	NS	ND - 2.10	ND	By-product of water chlorination	
RADIOACTIVE CONSTITUENTS (2007)							
Gross Alpha	pCi/L	15	0	0.17 - 5.49	2.3	Erosion from natural deposits	
Radium 226	pCi/L	5	0.019	ND - 2.02	0.5	Erosion from natural deposits	
Radium 228	pCi/L	5	0.05	ND - 0.0839	0.0	Erosion from natural deposits	
Uranium	pCi/L	20	0.43	0.10 - 5.09	4.1	Erosion from natural deposits	
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes	ppb	80	NS	ND - 3.8	NA	By-product of water chlorination	
Total Haloacetic Acids	ppb	60	NS	ND - 3.0	NA	By-product of water chlorination	
Chlorine (free)	ppm	[4]	[4]	0.01 - 0.53	NA	By-product of water chlorination	
MICROBIOLOGICAL RESULTS							
Total Coliform Bacteria	% Positive	MCL	PHG	Samples Collected	Potential Source of Constituent		
	0%	5%	(0)	936	Naturally present in the environment		
DETECTION OF A CONSTITUENT WITH A SECONDARY DRINKING WATER STANDARD		UNITS	SMCL	PHG	RANGE DETECTED	WEIGHTED AVERAGE	POTENTIAL SOURCE OF CONSTITUENT
Aluminum	ppb	1000	60	ND - 160	ND	Erosion from natural deposits	
Chloride	ppm	500	NS	14 - 180	52	Erosion from natural deposits	
Color	Units	15	NS	0 - 5	0.2	Naturally occurring organic materials	
Copper	ppb	500	NS	ND - 65	ND	Erosion from natural deposits	
Iron	ppb	300	NS	ND - 230	ND	Erosion from natural deposits	
Manganese ¹	ppb	50	NS	ND - 170	17.1	Erosion from natural deposits	
Specific Conductance	µmhos/cm	1600	NS	470 - 1600	861	Substances that form ions when in water	
Sulfate	ppm	500	NS	25 - 330	81	Erosion from natural deposits	
Total Dissolved Solids ²	ppm	1000	NS	270 - 1100	525	Erosion from natural deposits	
Turbidity	Units	5	NS	ND - 4.5	ND	Naturally occurring	
Zinc	ppb	5000	NS	ND - 100	ND	Erosion from natural deposits	
DETECTION OF A CONSTITUENT WITHOUT A DRINKING WATER STANDARD		UNIT	RANGE DETECTED	WEIGHTED AVERAGE			
Alkalinity	ppm	200 - 500	337				
Bicarbonate	ppm	200 - 500	336				
Boron	ppb	520 - 1100	778				
Calcium	ppm	16 - 60	33				
Carbonate	ppm	3 - 9	1.7				
Chromium 6 (2006)	ppb	ND - 38	12.6				
Hardness	ppm	71 - 590	317				
Potassium	ppm	ND - 3	1.2				
Magnesium	ppm	8 - 110	59				
Sodium	ppm	46 - 110	79				
pH		7.6 - 8.4	8.0				

¹ In 2009, one well exceeded the SMCL for Manganese. This well was then designated as a stand-by well through a permit amendment from the California Department of Public Health. This well will only be operated during an emergency situation, such as low pressure. In the event that this well does supply water to the City, notification would be given as required under the Title 22 California Code of Regulations.

² One well exceeded the Secondary Upper Limit for Total Dissolved Solids. An elevated concentration is not a health hazard, but is regulated because high concentrations may affect the aesthetic qualities of water.

Lead and Copper Rule

Tap water samples were collected from thirty Davis homes in 2008 and analyzed for lead and copper. While low levels of each constituent were detected, none of the samples exceeded the Action Level. The highest amount detected for copper was .24 ppm and for lead was 2.5 ppb. The Action Level for these constituents is 1.3 ppm and 15 ppb, respectively.

Arsenic in Drinking Water

While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Definitions

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

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.

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. EPA.

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.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard.

NTU (Nephelometric Turbidity Units): The standard unit for turbidity measurements.

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

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 EPA.

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

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

SMCL (Secondary MCL): SMCLs are set to protect the odor, taste, and appearance of drinking water.

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

Unregulated Contaminant Monitoring Rule 2 (UCMR2) Compliance

The UCMR2 is a list of currently unregulated contaminants. The US EPA requires public water systems to sample their source water to determine if these contaminants are present. No contaminants on this list were detected in the Davis water supply.

Nitrate in Drinking Water

Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain enzyme deficiencies. If you are caring for an infant, or if you are pregnant, ask advice from your health care provider.

Radon

Radon is a radioactive gas that occurs naturally in some groundwater. It may pose a health risk when the gas is released from water into air, as occurs during showering, bathing, or washing dishes and clothes. Radon gas released from drinking water is a relatively small part of the total radon in air. Radon is released into homes and groundwater from soil. Inhalation of radon gas has been linked to lung cancer; however, the effects of radon ingested in drinking water are not yet clear. Samples taken from our wells during 2005 indicated a weighted average Radon concentration of 331 Pico Curies per Liter (pCi/L). If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information call the U.S. EPA's radon hotline at 1-800-SOS-RADON or call the State's radon program at 1-800-745-7236 or visit www.epa.gov/radon/hotlines.html.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Davis 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, contact the City of Davis, the Safe Drinking Water Hotline (1-800-426-4791) or <http://www.epa.gov/safewater/lead>.