City of Davis Water Quality Report For Year 2013

What Does Our Water Contain?

Under the Title 22 California Code of Regulations, all public water systems are required to sample their source and treated water for biological, inorganic, organic, and radioactive constituents. The California Department of Public Health allows systems to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. All source waters were sampled in 2013 for general minerals, inorganic chemicals, organic chemicals, and general physical characteristics. Only those constituents that were detected are listed below. If you want to see a listing of all the constituents that are tested, please visit water.cityofdavis.org and search for Summary of All Wells.

DETECTION OF A CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD	UNITS	REGULATORY LIMITS		CITY OF DAVIS GROUNDWATER		MAJOR SOURCES IN DRINKING WATER
		MCL [MRDL]	PHG or (MCLG) [MRDLG]	RANGE DETECTED	WEIGHTED AVERAGE	
Aluminum	ppb	1000	600	<50 - 76	<50	Erosion from natural deposits & residue from some surface water treatment processes
Arsenic	ppb	10	0.004	<2.0 - 7.5	4.1	Erosion from natural deposits, runoff from orchards, & glass & electrical production wastes
Barium	ppb	1000	(2000)	<28 - 230	87	Erosion from natural deposits, discharges of oil drilling wastes, and from metal refineries
Total Chromium	ppb	50	(100)	<10 - 44	10.8	Erosion from natural deposits, discharge from steel and pulp mills, & chrome plating
Fluoride	ppm	2	1	<0.1 - 0.28	0.16	Erosion from natural deposits, water additive that promotes strong teeth, discharge from fertilizer, & aluminum factories
Nickel	ppb	100	12	<10 - 18	<10	Erosion from natural deposits
Nitrate (as NO_3)	ppm	45	45	<2.0 - 42.0	10.3	Runoff from fertilizer use, leaching from septic tanks and sewage, erosion from natural deposits
Selenium	ppb	50	30	<2.0 - 33	4.5	Erosion from natural deposits, discharge from petroleum, glass & metal refineries, discharge from mines and chemical manufacturers, & runoff from livestock lots
ORGANIC COMPOUNDS						
Chloroform	ppb	80	NS	<0.5 - 1.1	<0.5	By-product of water chlorination
Bromoform	ppb	80	NS	<0.5 - 1.6	<0.5	By-product of water chlorination
RADIOACTIVE CONSTITUENTS (SAMPLED IN 2007 AND 2009)						
Gross Alpha	pCi/L	15	(0)	0.554 - 5.540	1.899	Erosion from natural deposits
Radium - 228	pCi/L	5	(0)	ND - 2.02	0.41	Erosion from natural deposits
Uranium	pCi/L	20	0.43	0.17 - 5.09	1.20	Erosion from natural deposits
DISINFECTION BY-PRODUCTS						
Total Trihalomethanes	ppb	80	NS	<2.0 - 7.6	<2.0- 5.2	By-product of water chlorination
Total Haloacetic Acids	ppb	60	NS	<2.0 - 13.0	<2.0 - 5.0	By-product of water chlorination
Residual Chlorine	ppm	[4]	[4]	0.03 - 1.0	NA	By-product of water chlorination
MICROBIOLOGICAL RESULTS						
Total Coliform Bacteria	% POSITIVE	MCL	MCLG	SAMPLES COLLECTED		POTENTIAL SOURCE OF CONSTITUENT
	0.20%	5%	0%	942		Naturally occurring 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	200	NS	<50 - 76	<50	Erosion from natural deposits & residue from some surface water treatment processes
Chloride	ppm	500	NS	16 - 200	43	Erosion from natural deposits & seawater influence
Copper	ppb	1000	NS	<5 - 22	9.3	Erosion from natural deposits, internal corrosion of household plumbing & leaching from wood preservatives
Iron	ppb	300	NS	<30 - 140	<30	Erosion from natural deposits & industrial wastes
Manganese	ppb	50	NS	<10 - 2400	10.8	Erosion from natural deposits
Specific Conductance	µS/cm	1600	NS	500 - 1700	780	Substances that form ions when in water
Sulfate	ppm	500	NS	26 - 320	61	Erosion from natural deposits
Total Dissolved Solids	ppm	1000	NS	290 - 1100	467	Erosion from natural deposits
Zinc	ppb	5000	NS	<50 - 53	<50	Erosion from natural deposits & industrial wastes

DETECTION OF A CONSTITUENT WITHOUT A DRINKING WATER STANDARD	UNIT	RANGE DETECTED	WEIGHTED AVERAGE
Alkalinity	ppm	210 - 590	317
Bicarbonate	ppm	200 - 590	309
Boron	ppb	520 - 1100	777
Calcium	ppm	15 - 72	29
Carbonate	ppm	<3 - 18	8.8
Chromium 6	ppb	1 - 41	11
Hardness	ppm	64 - 730	253
Potassium	ppm	<2 - 3	<2
Magnesium	ppm	7 - 130	43
Sodium	ppm	54 - 110	83
pH	(no unit)	8.2 - 8.5	8.4

Lead and Copper Rule Tap water samples were collected from 24 Davis homes in 2011 and analyzed for lead and copper. While low levels of copper were detected, none of the samples exceeded the Action Level. The highest amount detected for copper was 0.59 ppm and lead was not detected. The Action Level for lead is 15 ppb and 1.3 ppm for copper.

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 Safe Drinking Water Hotline (1-800-426-4791) or visit epa.gov/safewater/lead.

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.

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.

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.

NL (Notification Level): Health based advisory set by the Department for constituents without an MCL. This is not an enforceable standard, although requirements and recommendations may apply if detected above this level.

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.

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 epa.gov/radon/hotlines.html.

Boron Notification Two wells have concentrations of Boron that exceed or were at the notification level of 1000 parts per billion (ppb). These concentrations are 1100 ppb (Well 15); 1000 ppb (Well 22). Groundwater that contains Boron is derived from the leaching of rocks and soils that contain borate or borosilicate minerals. Boron is not a regulated contaminant but is considered a contaminant of concern. The high concentration of Boron in the Davis groundwater may have a detrimental impact on Boron sensitive plants. The babies of some pregnant women who drink water containing Boron in excess of the notification level, 1000 parts per billion (ppb), may have an increased risk of developmental effects, based on studies in laboratory animals.

Well 21 The City is monitoring Well 21 every quarter due to high concentrations of sulfates, total dissolved solids, electrical conductivity and hardness. All results are reported to CDPH.

For more information about the Davis water system and water conservation, visit Water.CityofDavis.org or call the Public Works Department at 757-5686.

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater. 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. In order to ensure that tap water is safe to drink, the U.S. EPA and the California Department of Public Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State regulations 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.

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 can result from urban storm water 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 storm water runoff, and residential uses;
Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban storm water runoff, agricultural applications, and septic systems;
Radioactive Contaminants that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about drinking water may be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Community Participation

The City Council and the Natural Resources Commission (NRC) receive public comments at their regularly scheduled meetings. Please check the City's web site at CityofDavis.org or call 530-757-5603 for Council dates or 530-757-5686 for NRC dates.

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City of Davis Public Works
23 Russell Blvd., Davis, CA 95616

Important Information About Your Water Quality

Public-Works.CityofDavis.org/Water

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

此份有关你的食水报告,内有重要资料和讯息,请找他人为你翻译及解释清楚。

City of Davis Water Quality Report

For Year 2013

Davis California

PWS ID# 5710001

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 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, Gary Wells, 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).

Surface Water Project Update

The Surface Water Project will provide 12 million gallons per day (MGD) of surface water from the Sacramento River to Davis water customers and 18 MGD to Woodland customers. The Davis water system now relies solely on groundwater. When this Project is completed, the City's water system will primarily use surface water and continue to use groundwater when water demand is at its highest. The Project includes the construction, operation and maintenance of a water intake facility at the Sacramento River, a water treatment facility and pipelines. A description of the Project is available from the City and at WDCWA.com. The water intake facility will be built and operated in conjunction with Reclamation District (RD) No. 2035 and would replace RD 2035's current intake facility. The water treatment facility and pipelines will be constructed, owned and operated by WDCWA for the benefit of Davis and Woodland. The two cities will continue to independently operate their individual water systems. Davis, Woodland and RD 2035 will each fund its pro rata share of the Project.

Where Does Our Water Come From?

During 2013, the City pumped water from 20 municipal wells. These wells draw water from aquifers beneath the City at depths ranging from 210 to 1,760 feet below ground surface. The water is filtered naturally by sands and clays as it passes through geologic formations.

Chromium 6

Hexavalent Chromium (Chrome 6) is a naturally occurring element and is also used for industrial purposes. Chrome 6 has been known to cause cancer in humans when inhaled; some laboratory experiments have linked Chrome 6 to causing cancer in laboratory animals when ingested. In August 2013, the California Department of Public Health (CDPH) proposed establishing a Maximum Contaminant Level (MCL) for Chromium 6 at 10 parts per billion. The CDPH will adopt this standard this April 15th if there is no change to their original proposal. If there will be changes, the MCL will go into effect June 15th. For more information, visit Water.CityofDavis.org/Water-Quality-Information.

Well 30

After a routine sample event that took place last February, high concentrations of Manganese were detected at Well 30 (2400 parts per billion). After discussing this problem with CDPH and with a local consulting group, the City redeveloped the well and hired a consultant firm to test each individual aquifer formation for Manganese and other constituents of concern. After these tasks were accomplished, the Manganese level fell below the MCL (50 parts per billion) for a short time, but further sampling has shown the levels to increase again. Further investigation at this site has begun.

Stage 2 Disinfection By-Product Rule

The City began compliance with Stage 2 of the Disinfection By-Product Rule in November of 2012 and continued to monitor the system throughout calendar year 2013. All analytical results were below the MCL established for Total Trihalomethanes and Total Haloacetic Acids. The City is in the process of requesting a reduced monitoring schedule from the State due to the low concentrations of disinfection by-products that were found in the distribution system.

Water Conservation

The City sends customers courtesy notices indicating if there are sudden changes in water use. If you receive a notice regarding changes in your recent water consumption, use it as an opportunity to check for leaks and to make sure your irrigation schedules are properly adjusted for the season. The City also occasionally provides customer rebates for water efficiency improvements that will reliably reduce water consumption. Please visit our web site at CityofDavis.org or contact the Public Works office at 530-757-5686 to obtain more information about the City's efforts to conserve water.

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 dosage of 0.3 parts per million in the distribution system. 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. At Well 32; we do treat for manganese removal with a filtration system as well as adding sodium hypochlorite.

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.

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 USEPA's Safe Drinking Water Hotline 1/800-426-4791.

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 summary of the assessment is available online at swap.ice.ucdavis.edu/TSinfo/TSintro.asp, or contact Marie Graham at mgraham@cityofdavis.org or 530-757-5686.

For more information about the Davis water system and water conservation, visit Water.CityofDavis.org or call the Public Works Department at 530-757-5686.