City of Davis (Public Water System #5710001)
Water Quality Report for Year 2015

Important Information About Your Water Quality

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。

What Does Our Water Contain?

The Safe Drinking Water Act requires all water purveyors to sample their source and treated water for biological, inorganic, organic, and radioactive constituents. The State Board allows systems to monitor for certain constituents less than once per year but all constituents that have been detected in the source water must be reported for a period of nine years, or one compliance cycle.

DETECTION OF AN INORGANIC CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD	Unit	Regulatory Limits		City of Davis Groundwater		Major Sources in Drinking Water
		MCL (AL) [MRDL]	PHG or (MCLG) [MRDLG]	Range Detected	Weighted Average	
Arsenic	ppb	10	0.004	<2.0 - 5.7	3.2	Erosion from natural deposits; runoff from orchards; glass & electrical production wastes
Barium	ppm	1	(2)	0.027 – 0.22	0.093	Erosion from natural deposits; discharges of oil drilling wastes and from metal refineries
Hexavalent Chromium*	**ppb**	**10**	**0.02**	**<1.0 - 40**	**12**	**Erosion from natural deposits; discharge from electroplating factories; leather tanneries, wood preservatives, chemical synthesis, refractory production and textile manufacturing facilities.**
Total Chromium	ppb	50	(100)	<10 - 44	16	Erosion from natural deposits; discharge from steel and pulp mills; chrome plating
Fluoride	ppm	2.0	1	<0.1 - 0.30	0.18	Erosion from natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nickel	ppb	100	12	<10 - 33	<10	Erosion from natural deposits; discharge from metal factories
Nitrate (as N)	ppm	10	10	<.023 – 9.8	2.9	Runoff from fertilizer, leaching from septic tanks and sewage, erosion from natural deposits
Selenium	ppb	50	30	<2.0 - 35	6.4	Erosion from natural deposits; discharge from petroleum, glass, and metal refineries; discharge from mines and chemical manufacturers; runoff from livestock lots
ORGANIC CONSTITUENTS						
Chloroform	ppb	80	NS	<0.50 – 0.86	<0.50	By-product of water chlorination
RADIOACTIVE CONSTITUENTS (TESTED IN 2012)						
Gross Alpha	pCi/L	15	(0)	<1.07 - 8.69	1.7	Erosion from natural deposits
Combined Radium	pCi/L	5	(0)	0.04 - 1.3	0.8	Erosion from natural deposits
Uranium	pCi/L	20	0.43	<1.0 - 3.4	1.2	Erosion from natural deposits
Sampled From the Distribution System: **DISINFECTION BY-PRODUCTS**				Range Detected	Maximum Concentration	
Total Trihalomethanes	ppb	80	NS	<0.5 – 1.5	N/A	By-product of water chlorination
Residual Chlorine	ppm	[4.0]	[4.0]	0.02 - 0.99	N/A	By-product of water chlorination
MICROBIAL RESULTS	**% Positive**	**MCL**	**MCLG**	**Samples Collected**		
Total Coliform Bacteria	1.08%	5%	0%	939		Naturally occurring in the environment

DETECTION OF A CONSTITUENT WITH A SECONDARY DRINKING WATER STANDARD	Unit	SMCL	PHG	Range Detected	Weighted Average	Major Sources in Drinking Water
Chloride	ppm	500	NS	17 - 200	53	Erosion from natural deposits; seawater influence
Copper	ppm	1	NS	<.005 – .120	0.013	Erosion from natural deposits; internal corrosion of household plumbing; leaching from wood preservatives
Iron	ppb	300	NS	<30 - 60	<30	Erosion from natural deposits; industrial wastes
Manganese	ppb	50	NS	<10 - 44	7.4	Erosion from natural deposits
Specific Conductance*	**µS/cm**	**1600**	**NS**	**480 - 1600**	**929**	**Substances that form ions when in water**
Sulfate	ppm	500	NS	27 - 330	73	**Erosion from natural deposits**
Total Dissolved Solids*	**ppm**	**1000**	**NS**	**300 - 1100**	**576**	**Erosion from natural deposits**

*Please read below for information about our violations

DETECTION OF A CONSTITUENT WITHOUT A DRINKING WATER STANDARD	Unit	Range Detected	Weighted Average
Alkalinity	ppm	200 - 500	363
Bicarbonate	ppm	190 - 500	349
Boron*	**ppb**	**500 - 1100**	**907**
Calcium	ppm	15 - 75	36
Carbonate	ppm	<3 - 8	2
Hardness	ppm	66 - 740	306
Potassium	ppm	<2.0 - 2.5	2.3
Magnesium	ppm	7 -130	52
Sodium	ppm	58 - 110	104
pH	(No unit)	8.0 - 8.3	8.2

*Please read below for information about our violations

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 USEPA.
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.
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.
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 CA 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.

About Our Violations

Chromium Six: Prior to July 1, 2014, Chromium Six (also known as Hexavalent Chromium) had been regulated under the Primary Drinking Water Standard (PDWS) for Total Chromium (the sum of the level of Chromium Six plus Chromium Three). California's regulation was adopted in 1997 and set the Maximum Contaminant Level (MCL) for Total Chromium at 50 parts per billion (ppb).

The State adopted a PDWS for Chromium Six that went into effect on July 1, 2014. The MCL was set at 10 ppb and all water systems were required to sample their source waters for this constituent by January 1, 2015. If the Chromium Six concentration is over the new MCL then the water supplier may opt to continue monitoring the source water quarterly during calendar year 2016.

Eleven of our twenty wells exceeded the MCL for Chromium Six in 2015. The City was required to monitor these wells every quarter and to submit a Corrective Action Plan to address this problem. The plan was submitted in August and is pending approval by the Board.

The City will continue to monitor our source water and post results on our website at CityofDavis.org. During 2015, the City operated the wells whose concentration of Chromium Six was below the MCL as lead wells and operated the wells with levels above the MCL only when necessary to meet system demands.

Total Dissolved Solids and Specific Conductance: These secondary standards have "Consumer Acceptance Contaminant Level Ranges" that are categorized as Recommended, Upper, or Short Term. Fourteen City wells that draw groundwater from the intermediate zoned aquifers have levels of Specific Conductance and Total Dissolved Solids in the Upper category.

Boron: Well 15, has concentrations of Boron that exceed the notification level of 1000 parts per billion (ppb). 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.

If you have any additional questions, please contact the Public Works Department at 530-757-5686 or visit CityofDavis.org. For information about the health effects of Chromium Six, please contact the Yolo County Environmental Services at 530-666-8646 or contact the Safe Drinking Water Hotline at 1-800-426-4791.

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 USEPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The State Board 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. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791)

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, that can be naturally occurring or can 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, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban stormwater 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.

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, 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 visit http://water.epa.gov/drink/info/lead/index.cfm.

Lead and Copper Rule

Tap water samples were collected from 31 Davis homes in 2014 and analyzed for lead and copper. None of the samples exceeded the Regulatory Action Level for Copper (1.3 parts per million) or Lead (15 parts per billion). Concentrations of Copper ranged from Not Detected to 0.33 parts per million. Lead was detected in one sample at a level of 8.6 parts per billion.

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 US EPA 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.

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 US EPA/CDC (Centers for Disease Control) 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 US EPA's Safe Drinking Water Hotline.

Where Does Our Water Come From?

During 2015, the City pumped water from 18 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.

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 0.5 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, the source water is treated for manganese removal.

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 http://swap.ice.ucdavis.edu/TSinfo/TSintro.asp, or contact Marie Graham at (530) 757-5686 or e-mail mgraham@cityofdavis.org.

Unregulated Contaminant Monitoring Rule 3

As part of the Safe Drinking Water Act Amendments of 1996, the U.S. Environmental Protection Agency (EPA) is required to create a list every five years of up to 30 unregulated contaminants to be monitored in public water supplies. This list is derived from the Candidate Contaminant List (CCL) and represents compounds for which the EPA may consider as candidates for regulation. The City sampled selected wells and sampling stations in 2014 and 2015 for organic and inorganic compounds. The table below lists the unregulated constituents that were detected in the source water and in the distribution system. Unregulated Contaminant Monitoring Rule 3 results must be reported for five years after the first sampling event.

Please contact the Public Works Department Works at PWWeb@CityofDavis.org or (530) 757-5686 if you have any questions about these results.

Unregulated Contaminants Rule 3 Results

Location	Unit	Total Chromium Jan. /Aug.	Molybdenum Jan. /Aug.	Strontium Jan. /Aug.	Vanadium Jan. /Aug.	Hexavalent Chromium Jan. /Aug.	Chlorate Jan. /Aug.	Chloromethane* Jan. /Apr. /Aug.
Well 14**	**ppb**	**8.2/9.1**	**2.4/1.9**	**520/600**	**13/13**	**7.4/8.7**	**870/160**	**ND/NA/ND**
Well 20	ppb	4.6/38	1.8/1.4	670/660	9.4/12	7/38	74/240	2.2/ND/ND
Well 21	ppb	6.4/6.1	2.4/1.7	790/1100	11/11	6.1/5.3	54/120	ND/NA/ND
Well 22	ppb	3.8/12	2.9/2.5	610/700	15/15	3.9/11	62/94	ND/NA/ND
Well 24***	ppb	31/8.4	1.6/1.9	610/580	11/8.6	30/10	83/170	ND/NA/ND
Well 26	ppb	15/20	1.8/1.5	640/720	11/11	14/20	37/110	ND/NA/ND
Well 27	ppb	20/18	2.3/2.3	600/580	12/12	19/17	28/40	ND/NA/ND
Well 30	ppb	6.7/8.2	2.1/2.1	350/370	9/16	5.8/8.6	100/63	ND/NA/ND
Well 32	ppb	ND/ND	3.6/3.5	190/180	1.3/1.1	0.71/ND	49/180	ND/NA/ND
Well 33	ppb	ND/ND	4/3.8	210/180	4.6/3	0.2/ND	ND/ND	ND/NA/ND
Well 7	ppb	26/26	1.6/1.6	860/850	12/12	27/25	640/690	ND/NA/ND
Well EM3	ppb	13/14	1.5/1.6	740/680	9.9/9.6	14/13	ND/ND	ND/NA/ND
SS-012	ppb	24/40	1.6/1.4	500/690	10/12	25/41	59/130	ND/NA/ND
SS-017	ppb	12/30	2.5/2.4	450/750	11/13	12/28	51/130	ND/NA/ND
SS-018	ppb	ND/ND	3.4/3.6	180/180	1.2/1.2	0.54/0.11	270/220	ND/NA/ND
SS-023	ppb	ND/9	3.6/2.5	190/480	1.3/7.8	ND/8.7	54/150	ND/NA/ND

ND (Not Detected): Indicates that the substance was not found by laboratory analysis.
NA: **(Not Applicable):** Indicates that no sampling occurred.

**Chloromethane* was detected at Well 20 in January 2014. A repeat sample was taken in April and a scheduled sample was taken in August. Chloromethane was not detected in either of these two samples. Chloromethane was not detected at any other well site.

***Well 14 Chlorate Notification:* Chlorate is an unregulated contaminant that was a candidate for the Unregulated Contaminant Monitoring Rule 3. Chlorate was tested at designated well heads after chlorination and was detected at a range from Non-Detected to 870 parts per billion. The State has set a notification at 800 ppb. Chlorate is used in the manufacturing of dyes, explosives, matches, printing fabrics, paper pulp processing, weed killers and is also a by-product of certain types of water disinfectants. The most likely source of Chlorate in the Davis water would be from our source water interacting with Sodium Hypochlorite which is used for disinfection purposes.

****Well 24* was sampled in August 2014 and in January 2015.

To Our Water Customers

This report is prepared in accordance with the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board – Division of Drinking Water 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 contact Davis Public Works at PWWeb@CityofDavis.org or (530) 757-5686 and ask for Marie Graham, Richard Tsai, or Stan Gryczko. 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.

Community Participation

The Davis 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.

SURFACE WATER PROJECT

The Surface Water Project will provide 10.2 million gallons per day (MGD) of water from the Sacramento River to Davis customers and 1.8 MGD to the UC Davis campus. The Davis water system now relies solely on groundwater. The schedule for first water delivery to the City is for June of 2016 with supplies increasing over a period of months. Completion of all local pipeline construction will occur in the fall of 2016. When the Project is complete the City will rely on surface water as its primary source with groundwater used during peak demand times. The Project components include an intake structure, a raw water pipeline, a water treatment plant, and treated water pipelines to Davis and partner city, Woodland. More information is available about the Woodland Davis Clean Water Agency at www.WDCWA.com.