

## Public Meeting Information

**ANKENY**  
Ankeny City Council • 1st and 3rd Monday of each month at 5:00 p.m.  
410 West 1st Street • Ankeny, Iowa 50021

**BONDURANT**  
Bondurant City Council • 1st and 3rd Monday of each month at 6:00 p.m.  
Bondurant City Hall • 200 2nd NE • Bondurant, Iowa 50035

**CLIVE**  
Clive City Council • 1st, 3rd, & 5th\* Thursday of each month (\*5 week months)  
Clive City Hall • 1900 NW 114th St. • Clive, Iowa 50325

**CUMMING**  
Cumming City Council • 2nd and 4th Monday each month  
City Hall • Cumming, Iowa 50061

**DES MOINES**  
Board of Water Works Trustees • 4th Tuesday each month at 9:00 a.m.  
Des Moines Water Works • 2201 Valley Drive • Des Moines, Iowa 50321

**EARLHAM**  
Earlham City Council • 2nd Monday of each month at 7:00 p.m.  
Earlham City Hall • Earlham, Iowa 50072

**JOHNSTON**  
Johnston City Council • 1st and 3rd Monday of each month at 7:00 p.m.  
City Hall • 6221 Merle Hay Road • Johnston, Iowa 50131

**NEW VIRGINIA**  
New Virginia City Council • 1st Saturday of each month at 8:00 a.m.  
Fire Station meeting room

**NORWALK**  
Norwalk City Council • 1st and 3rd Thursday of each month at 7:00 p.m.  
705 North Avenue • Norwalk, Iowa 50211

**PLEASANT HILL**  
Pleasant Hill City Council • 2nd and 4th Tuesday of each month at 6:30 p.m.  
Pleasant Hill City Hall • 5151 Maple Drive • Pleasant Hill, Iowa 50317

**POLK COUNTY RURAL WATER DISTRICT #1**  
Annual Meeting in January each year • Call for date  
660 NW 66th Avenue, Suite 2 • Des Moines, Iowa 50313

**SOUTHEAST POLK RURAL WATER DISTRICT**  
Board of Directors • 3rd Wednesday of each month • Contact office for time  
6540 NE 12th Avenue • Altoona, Iowa 50009


**URBANDALE**  
Water Board of Trustees • Meets monthly • Call 278-3940 for information  
Urbandale Water Department • 3720 86th Street • Urbandale, Iowa 50322

**WARREN WATER**  
Board of Directors • 3rd Monday each month at 7:00 p.m.  
Warren Water Office • 1204 East 2nd Avenue • Indianola, Iowa 50125

**WAUKEE**  
Waukee City Council • 1st and 3rd Monday each month at 7:00 p.m.  
Waukee City Hall • 230 Highway 6 • Waukee, Iowa 50263

**WINDSOR HEIGHTS**  
Windsor Heights City Council • 1st and 3rd Monday each month at 4 p.m.  
Windsor Heights City Hall • 1133 66th Street • Windsor Heights, Iowa 50311

**XENIA RURAL WATER DISTRICT - Southwest & Woodward**  
Board of Directors • Thursday of 3rd full week of each month  
2398 141st Street • Bouton, Iowa 50039



Des Moines Water Works

City of Ankeny • City of Bondurant • City of Clive Water Department • City of Cumming  
Des Moines Water Works • City of Earlham • Johnston Water Department  
City of New Virginia • City of Norwalk • City of Pleasant Hill  
Polk County Rural Water District #1 • SE Polk Rural Water District  
Urbandale Water Department • Warren Water District • City of Waukee  
City of Windsor Heights • Xenia Rural Water District - Southwest & Woodward

Quality Water • Quality Service

2002 Consumer  
Confidence Report

# Treating the Present, Assessing the Future

In 2001, DMWW experienced record levels of nitrate in the Des Moines and Raccoon Rivers, continuing the 27-year upward trend of nitrate contamination in our source waters. In the past several years, a number of Iowa beaches have been closed and Iowans have been

and non-point source pollution can be prevented by developing and employing good management practices (see box below).

## D M W W's Source Water Assessment

The Safe Drinking Water Act of 1996 required that all water suppliers identify the topographic area of the entire watershed upstream of the intake structure. A contaminant inventory that identified the possible sources of contaminants in the watershed, and assess the susceptibility of contamination in the watershed was then compiled.

After compiling and analyzing all the information gathered during the project, a final report, called the "Source Water Assessment" (SWA), was compiled. DMWW concluded that there are numerous potential sources of contamination within our watersheds. From this information, a list of the top 10 sources of contaminants with the

highest potential to negatively impact our source water was created. The reason these 10 potential sources are contained in this list is that a release of contaminants from these sources would severely impact both our source waters and potentially our drinking water. It would then become DMWW's responsibility to effectively remove the contaminant(s) from the water, despite the cost to DMWW or our customers.

- DMWW's top 10 contaminant source list includes:
1. National pipelines (petroleum)
  2. Non-point source pollution (row crops, soil erosion)
  3. Agricultural facilities/animal feed lots/confinements
  4. Wastewater treatment facilities
  5. Environmental clean-up sites (Brownfields)
  6. Solid waste disposal facilities (land fills)

## Source Water and Contaminants

Source water is the body of water that a public drinking water supplier uses to obtain its raw water supply for treatment. The two main types of source water are surface water, such as rivers, lakes, and reservoirs, and ground water. DMWW uses surface water from the Des

**“For agricultural producers to change, they have to be able to understand the impact within their role within the watershed.”**  
*-Jerry Hatfield  
 Director  
 National Soil Tilth Laboratory*

The other type of contamination, called non-point source is difficult to identify, measure, isolate and control. These sources can include erosion, agricultural runoff, and failing septic systems. In Iowa, a significant source of non-point source contamination is row crop agriculture.

It is important to understand that both point source

7. National and non-national priority site (clean up site)
8. Pesticide/fertilizer facilities
9. Airports
10. Business and industry discharges.

The list was developed to help determine where to focus future management efforts. While DMWW is concerned with all the categories in the top 10 list, these are not the only concerns with regard to source water quality. The types of contaminants we currently find in our source water are bacterial or microbial, with high nitrate levels seasonally. DMWW is also diligently

new reports indicating a presence of pharmaceuticals, such as hormonal disruptors and antimicrobials, in our source waters.

## The Future

Armed with the information  
DMWW has detailed in the SWA, the

citizens of the Des Moines metropolitan area, as well as the citizens living throughout the Des Moines and Raccoon River watersheds, can take action to help protect and improve our source water quality. This is beneficial to everyone receiv-

in our drinking water, as well as the thousands receiving drinking water from other utilities drawing from the same sources. In addition, it will improve recreation and leisure opportunities, such as fishing, swimming, and boating, as well as ensuring quality of life and a better future for our families. Most importantly, it will allow DMWW to continue providing

# How To Get With The Flow

For more information about watershed protection efforts and volunteer opportunities in our community and the state of Iowa, contact:

**U.S. Department of Agriculture**

National Soil Tillage Laboratory  
Jerry Hatfield  
2150 Pammel Drive  
Ames, Iowa 50011-4420  
Phone: (515) 294-5723  
E-mail: [hatfield@nstl.gov](mailto:hatfield@nstl.gov)

## ISU Extension Polk County

Barbara Hug  
5201 NE 14th Street  
Des Moines, Iowa 50313-2005  
Phone: (515) 261-4204  
E-mail: bhug@iastate.edu

[www.extension.iastate.edu/polky/water](http://www.extension.iastate.edu/polky/water)

**Iowa Environmental Council**  
711 East Locust  
Des Moines, Iowa 50309  
Phone: (515) 244-1194  
E-mail: [iecmal@earthweshare.org](mailto:iecmal@earthweshare.org)  
[www.earthweshare.org](http://www.earthweshare.org)

## LOWATER

Rich Leopold  
502 East 9th Street  
Des Moines, Iowa 50319  
Phone: (515) 281-3252  
E-Mail: richard.leopold@dnr.state.ia.us  
[www.iowater.net](http://www.iowater.net)

**Agriculture's Clean Water Alliance**

4536 NW 114th Street  
 Urbandale, Iowa 50322  
 Phone: 1-800-797-4322  
 E-mail: [wolf@acwa-rrws.org](mailto:wolf@acwa-rrws.org)





SUBSTANCE	HIGHEST LEVEL ALLOWED (MCL)		DMWW RANGE USING DES MOINES RIVER WATER		DMWW RANGE USING RACCOON RIVER WATER		DMWW RANGE USING TREATMENT PLANT AT MAFFITT RESERVOIR		DMWW MAXIMUM DETECTED LEVEL		EPA MCLG (EPA GOAL)	SOURCES OF CONTAMINANT
MICROBIOLOGICAL CONTAMINANTS												
Turbidity	0.5	NTU	nd-0.24 NTU		nd-0.17 NTU		nd-0.24 NTU		0.24 NTU		N/A	Soil Runoff
RADIOACTIVE CONTAMINANTS												
Gross Alpha Excluding Uranium Strontium-90	15.0 N/A	pCi/L	N/A nd-0.5 pCi/L		0.5 N/A pCi/L		11.1 N/A pCi/L		11.1 0.5 pCi/L		N/A N/A	Erosion of Natural Deposits Erosion of Natural Deposits
INORGANIC CONTAMINANTS												
Fluoride	4.0	mg/L	0.20-1.2 mg/L		0.19-1.3 mg/L		0.29-1.2 mg/L		1.3 mg/L		4.0 mg/L	Additive to Promote Strong Teeth
Nitrate (as N)	10.0	mg/L	1.8-9.3 mg/L		1.7-7.2 mg/L		1.2-9.4 mg/L		9.4 mg/L		10.0 mg/L	Runoff from Fertilizer Use
Sodium	unregulated		10.0-51.0 mg/L		14.0-20.0 mg/L		9.1-24.0 mg/L		51.0 mg/L		unregulated	Erosion of Natural Deposits
Sulfate	unregulated		27.0-90.0 mg/L		39.0-75.0 mg/L		30.0-74.0 mg/L		90.0 mg/L		unregulated	Erosion of Natural Deposits
ORGANIC CONTAMINANTS												
Atrazine	3.0	µg/L	N/A		nd		0.46		0.46 µg/L		3.0 µg/L	Runoff from Herbicide Use
Metolachlor	70.0*	µg/L	N/A		nd		1.6		1.6 µg/L		N/A	Runoff from Herbicide Use
Total Haloacetic Acids (HAA5)	N/A		N/A		N/A		8.0-11.0		11.0 µg/L		N/A	By-product of Drinking Water Disinfection
Total Trihalomethane	100.0	µg/L	34.0-55.0 µg/L		47.0 µg/L		14.0-41.0 µg/L		55.0 µg/L		0 µg/L	By-product of Chlorine Disinfection

UTILITY	COPPER ACTION LEVEL		COPPER 90th PERCENTILE**		LEAD ACTION LEVEL		LEAD 90th PERCENTILE**		# LEAD SAMPLES ABOVE AL	SOURCES OF CONTAMINANT
COPPER AND LEAD - Regulated at Customer Tap										
Ankeny	1.3	mg/L	0.036	mg/L	15.0	µg/L	16.2	µg/L	8 of 61 samples	Corrosion of Home Plumbing
Bondurant (see note below)	1.3	mg/L	0.626 <sup>1</sup>	mg/L	15.0	µg/L	7.0 <sup>1</sup>	µg/L	0 of 10 samples	Corrosion of Home Plumbing
Clive	1.3	mg/L	0.032	mg/L	15.0	µg/L	0	µg/L	0 of 33 samples	Corrosion of Home Plumbing
Cumming	1.3	mg/L	0	mg/L	15.0	µg/L	3.0	µg/L	0 of 5 samples	Corrosion of Home Plumbing
Des Moines Water Works	1.3	mg/L	nd <sup>2</sup>	mg/L	15.0	µg/L	10.0 <sup>2</sup>	µg/L	5 of 64 samples	Corrosion of Home Plumbing
Earlham	1.3	mg/L	<0.01	mg/L	15.0	µg/L	<1.0	µg/L	0 of 10 samples	Corrosion of Home Plumbing
Johnston	1.3	mg/L	0.007 <sup>3</sup>	mg/L	15.0	µg/L	0.02 <sup>3</sup>	µg/L	1 of 40 samples	Corrosion of Home Plumbing
New Virginia	1.3	mg/L	<0.020	mg/L	15.0	µg/L	<6.0	µg/L	0 of 5 samples	Corrosion of Home Plumbing
Norwalk	1.3	mg/L	0.05	mg/L	15.0	µg/L	2.0	µg/L	0 of 20 samples	Corrosion of Home Plumbing
Pleasant Hill	1.3	mg/L	<0.01 <sup>2</sup>	mg/L	15.0	µg/L	<1.0 <sup>2</sup>	µg/L	0 of 20 samples	Corrosion of Home Plumbing
Polk Cty Rural WD #1	1.3	mg/L	nd <sup>2</sup>	mg/L	15.0	µg/L	13.0 <sup>2</sup>	µg/L	1 of 10 samples	Corrosion of Home Plumbing
SE Polk Rural Water	1.3	mg/L	0.036	mg/L	15.0	µg/L	<5.0	µg/L	1 of 12 samples	Corrosion of Home Plumbing
Urbandale	1.3	mg/L	0.020 <sup>3</sup>	mg/L	15.0	µg/L	6.0 <sup>3</sup>	µg/L	2 of 30 samples	Corrosion of Home Plumbing
Warren Water District	1.3	mg/L	<0.02 <sup>2</sup>	mg/L	15.0	µg/L	<5.0 <sup>2</sup>	µg/L	0 of 20 samples	Corrosion of Home Plumbing
Waukee	1.3	mg/L	<0.02 <sup>3</sup>	mg/L	15.0	µg/L	<6.0 <sup>3</sup>	µg/L	1 of 41 samples	Corrosion of Home Plumbing
Windsor Heights	1.3	mg/L	nd <sup>2</sup>	mg/L	15.0	µg/L	10.0 <sup>2</sup>	µg/L	(see DMWW results)	Corrosion of Home Plumbing
Xenia Rural Water	1.3	mg/L	0.035	mg/L	15.0	µg/L	<5.0	µg/L	0 of 30 samples	Corrosion of Home Plumbing

\*Health Advisory Level \*\* 90% of samples must be below Action Level \*\*\*Screening level. If 50 pCi/L is exceeded, further testing must be performed.

<sup>1</sup>1998 data - testing not required in 2001 <sup>2</sup>1999 data - testing not required in 2001 <sup>3</sup>2000 data - testing not required in 2001

**BONDURANT NITRATE TESTING RESULTS:** Nitrate test results for water produced at the Bondurant water treatment facility on 1/10/2001 (prior to using DMWW water) was 8.7 mg/L. The EPA limit is 10.0 mg/L. The City of Bondurant began using DMWW water as of January 15, 2001.

**NOTE:** The EPA requires monitoring of over 80 drinking water contaminants. Those listed above are the only contaminants detected in your drinking water. For a complete list or for more information about contaminants, please contact Des Moines Water Works or your local water utility. Contact information for each water utility is listed on page 4 of this publication.

	The following utilities had distribution violations in 2001. The specifics of each violation and corrective actions are provided in detail. If you have any questions, please contact the utility.		
	UTILITY	VIOLATION	CORRECTIVE ACTION
	<b>City of Ankeny</b>	..... Lead exceeded 90th percentile Action Level (AL)	..... Public education and continue lead & copper testing
	<b>DMWW</b>	..... Sampling violation	..... Public notification
	<b>City of Norwalk</b>	..... Total Coliform (TCR) monitoring violation (8/2001)	..... Public education, notification and retesting

## define -a: to discover and set forth the meaning of (as a word); b: to make distinct, clear, or

**Action Level (AL)** - The concentration of a contaminant that, if exceeded, triggers a treatment or other requirement that a water system must follow.

**Inorganic Chemicals** - Chemical substances of mineral origin, such as lead and copper.

**Maximum Contaminant Level (MCL)** - The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**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 allow for a margin of safety.

**Microbiological Contaminants** - Very small organisms, such as bacteria, algae, plankton, and fungi.

**NA** - Not applicable

**nd** - Not detected

**NTU** - Nephelometric Turbidity Units.

**Organic Contaminants** - Naturally occurring or synthetic substances containing mainly carbon, hydrogen, nitrogen, and oxygen. This includes most pesticides and industrial chemicals.

**pCi/L** - picocuries per liter; measure of radioactivity.

**µg/L** - micrograms per liter; parts of contaminant per billion parts of water. One part per billion (ppb) is equivalent to a single penny in ten million dollars.

**mg/L** - milligrams per liter; parts of contaminant per million parts of water. One part per million (ppm) is equivalent to a single penny in ten thousand dollars.

**Radionuclides** - Contaminants giving off ionizing radiation.

### DMWW PUBLIC NOTICE

Des Moines Water Works is required to collect one trihalomethane sample for its Fleur Drive Treatment Plant and four trihalomethane samples for its Maffitt Treatment Plant each quarter. The sampling error mentioned in the paragraph below concerned the Maffitt Treatment Plant. Four trihalomethane samples were collected each calendar quarter for the Maffitt Treatment Plant from the time the plant was placed online in May of 2000 through March of 2001. All of these samples were well below the maximum allowable level for trihalomethanes. At the end of one year of sampling, a new operating permit was issued, and Des Moines Water Works staff misunderstood the intent of the new permit, collecting only one compliance sample for the quarter that ended in June of 2001. This misunderstanding was due in large part to the fact that only one trihalomethane sample per quarter is required for the Fleur Drive Treatment Plant. Several other samples were collected for the Maffitt Treatment Plant during the quarter in question and all of these samples were well below the maximum allowable level for trihalomethane. These samples could not be used to meet the regulation because all four compliance samples must be taken within 24 hours of each other. We regret our error in meeting this monitoring requirement but emphasize that all samples tested were well below the maximum allowable level for trihalomethanes.

The Des Moines Water Works Maffitt Water Treatment Plant is required by state and federal regulations to test four water samples per quarter for trihalomethanes. Des Moines Water Works regrets its failure to collect the appropriate number of samples and will work to make sure that the testing schedule is observed in the future. Customers with questions or concerns about sampling schedules, or any other water issues, should contact Des Moines Water Works at 283-8700.

Water Treatment is a vital step to ensuring a safe, high quality product is delivered to Des Moines Water Works' customers. A new 25 million gallons per day (mgd) treatment plant at Maffitt Reservoir was placed into operation in mid-2000 to supplement the 80 year old, 100 mgd plant on Fleur Drive.

The Maffitt plant's main water source is shallow groundwater collected from wells along the river which utilize the earth's natural filtering through coarse sands and gravels to deliver a water free from river sediment. The 1.3 billion gallon Maffitt Reservoir serves as an emergency supply for the new plant. The Fleur Drive plant has the flexibility to draw water from either the Raccoon or the Des Moines Rivers in addition to the infiltration gallery. Des Moines Water Works plant operators, in consultation with our laboratory staff, will select the river source that has the highest quality water. The gallery collects water from the same shallow groundwater formation as the Maffitt plant. Additionally, in an emergency situation, the Fleur plant can draw up to 6 billion gallons of water from Saylorville Reservoir.

Both the Fleur and Maffitt plants purify the water in a similar fashion. The Fleur plant has an added pretreatment process that removes silt and dirt from the river water. Powdered carbon is also used only with river water to reduce dissolved organic matter.

This organic matter results from the natural decay of leaves and vegetation in addition to agricultural and municipal wastewater discharges. The Maffitt plant does not need this pretreatment step because shallow groundwater and the water from Maffitt Reservoir have no sediment to remove.

Lime softening is the second treatment process used

## Cryptosporidium

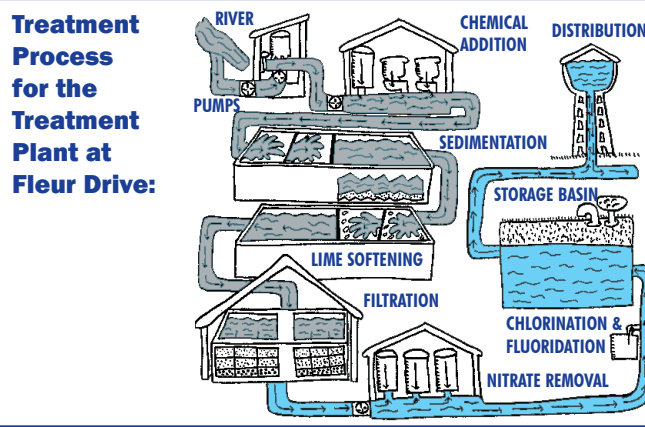
Cryptosporidium is a microscopic organism found in rivers and streams that can cause diarrhea, fever and gastrointestinal distress if ingested. It finds its way into the watershed through animal and human wastes.

Cryptosporidium is rarely found in the rivers from which we draw water and is effectively eliminated by a treatment process that includes sedimentation, filtration, and disinfection.

Cryptosporidium has NEVER been found in your drinking water.

## Delivering The Kind Of Treatment You Deserve

at the Fleur plant and is the first step at Maffitt. Through lime softening, hardness minerals, germs, and bacteria are removed. Softening produces an excellent by-product, calcium residue, used in agriculture by applying to farm fields and gardens as a soil stabilizer.



Following softening at both plants, the water is stabilized with carbon dioxide then filtered. During this process, all particles are removed as the water flows through the sand and gravel or anthracite coal and sand media. When necessary at the Fleur plant, a fraction of water receives nitrate removal through an ion exchange process and is blended with the rest of the post-filtered water to stay safely below the health standard for nitrate. The Maffitt plant water does not require nitrate removal since the shallow groundwater source contains reduced levels of nitrate compared with the rivers, and can be easily blended with nitrate-free water from Maffitt Reservoir to remain below the health standard. Once filtered, fluoride is added to help prevent dental cavities

### Shedding Light on Your Watershed

There are three sources of water fulfilling the needs of Des Moines Water Works customers. Approximately two-thirds is supplied by either the Raccoon or Des Moines River. The remaining one-third comes from the infiltration gallery system (shallow groundwater).

As rain and snow run across the slope of land in our watershed, they carry soil and pollution, depositing them in creeks leading to the Raccoon and Des Moines Rivers. Some precipitation sinks into the ground, dissolving substances that may enter our groundwater supplies. Everyone can contribute to improving watershed health by utilizing conservation practices that protect the land and the quality of water in our rivers. Improving environmental quality improves our quality of life now and in the future.

Des Moines and Raccoon R

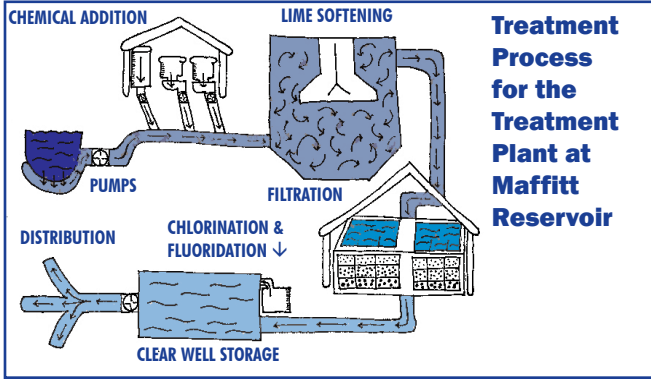
and chlorine is added to disinfect the water.

When the treatment process at both plants is completed, the treated water enters a storage tank prior to being pumped into the distribution network. Both plants have a sufficient number of pumps to provide a reliable supply of water in case one pump is down for repairs. Both plants also have emergency power supplies to maintain plant and pumping operation when electricity is interrupted.

The distribution system consists of more than 800 miles of pipe, 6,800 hydrants, 18,800 valves, 5 water storage tanks, and 3 booster pumping stations.

Throughout the treatment process, the laboratory staff performs tests to ensure the highest quality water is produced. Through a series of daily tests on the untreated water sources, the laboratory staff can also identify any necessary changes in the treatment process before the water enters the plant.

The laboratory also carries out a progressive research program and performs several research projects and studies throughout the year.



## A Message from the Environmental Protection Agency

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The Center for Disease Control has guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants. They are available from the Safe Drinking Water Hotline.



In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in your community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30

seconds to 2 minutes before using tap water.

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical and mental development. Children should show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Any bottled water that is labeled "drinking water" has to meet EPA's drinking water regulations. 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 EPA's Safe Drinking Water Hotline.

**SAFE DRINKING WATER  
HOTLINE:  
1-800-426-4791  
www.epa.gov/OGWDW**