

# City of Fairfield 2006 Drinking Water Consumer Confidence Report



The following individuals make-up the water distribution division: (From left to right) **Andreas Bierwagen; Stan Hinkle; Lee Heinemeyer; George Shimboff; Richard Banuelos; Joe Lodel; Mike Lauziere; Matt Kernan; Ann Wendland; Richard Vasquez; Shane Errecart; Jim Pritchard; Frank Padilla and Mark Miller.** Front row kneeling: **Alan Davis; Pete Peirce.** (Not pictured): **James Allen, Mike Lamphear, Tom Gregory, Nick Smaystrla, Garrett Sylwesiuk and Edwin Franke.**

## Water Quality Concerns

**Sensitive Populations** — Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons (such as people with HIV/AIDS, people who are undergoing chemotherapy and people who have undergone organ transplants), infants, and some elderly people can be particularly at risk for serious health impacts from infections. These people should seek advice about drinking water from their health care providers.

**Lead & Copper** — Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels may be higher in some homes in the community as a result of materials used in house plumbing. None of the samples Fairfield tested in 2005 exceeded the Action Levels for lead or copper. The next round of testing is in 2008.

**Cryptosporidium** — is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these

organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease and it may spread through means other than drinking water. One of the most effective ways of killing cryptosporidium in drinking water is through ozonation and both of the City's two treatment plants use this new process.

**Arsenic** — The California Department of Health Services continues to research the health effects of low levels of arsenic, a mineral known to cause cancer in humans at high concentrations and linked to other health effects such as skin damage and circulatory problems. No arsenic has been found in Fairfield's drinking water.

**Security** — The City of Fairfield has performed a comprehensive vulnerability assessment for the water system resources. If you should see any items of concern or notice anything suspicious, please contact the City of Fairfield at **(707) 428-7594.** ■

Este folleto contiene información muy importante sobre su agua potable. Si quiere una copia en Español llame a **Sandra Gonzalez** al **707-428-7672.** Para recibir más información en Español comuníquese con **Laura de Albidress** al **707-428-7680** extensión **107.**

### For More Information Call

For questions regarding this report

**(707) 428-7594x105**

Water Billing Questions

**(707) 428-7346**

Water Repairs **(707) 428-7415**

After Hours Water Repairs

**(707) 428-7300**

EPA Safe Drinking Water Hotline

**(800) 426-4791**

Para información en Español

**(707) 428-7680x107**

Cover photos show some of the water distribution responsibilities which includes, main line repair, backflow prevention testing, service line replacement, system flushing and chlorine residual monitoring.



Water Quality in the City of Fairfield is measured at both the point of entry (water treatment plant) and at the tap of our customers. This year's report highlights the efforts and activities of the Water Distribution division - the people who make sure the drinking water gets to your home or business without loss of quality.

This report shows the results of our monitoring for the period of January 1 - December 31, 2006. This last year, as in years past, your tap water met all USEPA and State Drinking Water Health Standards. The City of Fairfield has prepared this report and delivered it as required by law. Included are details about where your water comes from, what it contains, and how it compares to State and Federal standards.

# Drinking Water

In order to ensure that tap water is safe to drink, the US Environmental Protection Agency (USEPA) and the State Department of Health Services (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

The tables below list the drinking water contaminants that were detected for the period of January 1 - December 31, 2006. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Their presence does not necessarily indicate that water poses a health risk. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. More information about contaminants and potential health effects can be obtained by calling the **USEPA's Safe Drinking Water Hotline (1-800-426-4791)**.

# Treated Water

DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD					
Substance (reporting units)	MCL	PHG (MCLG)	Drinking Water		Contaminant Sources
			Range	Average	
Aluminum (ppm)	1	0.6	ND-0.069	0.039	Erosion of natural deposits; residue from some surface water treatment processes.
Barium (ppm)	1	2	ND-0.271	0.065	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits.
Nickel (ppb)	100	12	ND-0.0104	0.0013	Erosion of natural deposits, discharge from metal factories.
Nitrate (ppm) (as nitrate)	45	45	ND-3.06	1.32	Runoff and leaching from fertilizer use, leaching from septic tanks and sewage; erosion of natural deposits.
Flouride (ppm) (Natural Source)	2.0	1.0	ND-0.199	0.111	Erosion of natural deposits.

DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD					
Substance (reporting units)	MCL	PHG (MCLG)	Drinking Water		Contaminant Sources
			Range	Average	
Aluminum (ppb)	200	NA	ND-69	39.0	Erosion of natural deposits; residue from some surface water treatment processes.
Chloride (ppm)	500	NA	8.0-21.5	11.6	Runoff/leaching from natural deposits; seawater influence.
Color (Units)	15	NA	ND-7	0.42	Naturally-occurring organic materials.
Odor (Units)	3	NA	1-2	1.4	Naturally-occurring organic materials.
Silver (ppb)	100	NA	11.5-42.1	22.4	Industrial discharges
Sulfate (ppm)	500	NA	25.1-55.6	41.6	Runoff/leaching from natural deposits; industrial wastes.
Specific Conductance (micromhos)	1600	NA	239-442	327	Substances that form ions when in water; seawater influence.
Total Dissolved Solids (ppm)	1000	NA	130-339	218	Runoff/leaching from natural deposits.
Turbidity (NTU)	5	NA	0.028-0.145	0.040	Soil runoff

SAMPLING RESULTS FOR SODIUM AND HARDNESS					
Substance (reporting units)	MCL	PHG (MCLG)	Drinking Water		Contaminant Sources
			Range	Average	
Hardness (ppm)	NA	NA	73-172	139	Generally found in ground and surface water.
Sodium (ppm)	NA	NA	18.7-43.6	26.8	Generally found in ground and surface water.

DETECTION OF UNREGULATED CONTAMINANTS					
Substance (reporting units)	NL	PHG (MCLG)	Drinking Water		Contaminant Sources
			Range	Average	
Boron (ppb)	1000	NA	170-210	190	Unregulated contaminant monitoring helps EPA and the State determine where certain contaminants occur and whether the contaminants need to be regulated.
Vanadium (ppb)	50	NA	ND-5.6	2.56	Unregulated contaminant monitoring helps EPA and the State determine where certain contaminants occur and whether the contaminants need to be regulated.
Substance (reporting units)	MCL	PHG (MCLG)	Source Water		Contaminant Sources
			Range	Average	
Cryptosporidium (organisms/L)	TT	NA	ND-0.7	0.07	Naturally present in the environment.

# Source Water

The sources of drinking water (both tap water and bottled water) 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 substances resulting from the presence of animals or from human activity.

Fairfield's source water originates from Lake Berryessa and the Sacramento Delta. Water is transported for treatment through the Putah South Canal and the North Bay Aqueduct.

Treatment of source water is divided between two conventional water treatment plants, the Waterman Treatment Plant and the North Bay Regional Water Treatment Plant, (NBR is jointly owned by the Cities of Fairfield and Vacaville).

Contaminants that may be present in source water before treatment include:

**Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals, 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**, may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

**Organic chemical contaminants**, include 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 applications, and septic systems.

**Radioactive contaminants**, can be naturally-occurring or be the result of oil and gas production and mining activities.



Matthew Schmidt is collecting weekly water quality samples.

# Source Water Assessment

Under State law, water utilities are required to check water supplies for possible contaminating activities which may put the source water at risk. This assessment does not mean that the water is necessarily affected by those activities at this time, but that the utility should be aware of these potential concerns and take necessary measures to protect the drinking water sources.

**Lake Berryessa** (Updated September 2006): A Source Water Assessment has been completed and shows that the most significant potential sources of contamination are illegal activities/ unauthorized dumping, herbicide application, storm drain discharge points, and recreational use.

**Sacramento Delta** (completed December 2002): A Source Water Assessment has been completed and shows that the most significant potential sources of contamination are recreational use, urban & agricultural runoff, grazing animals, herbicide application, and seawater intrusion. An updated assessment will be completed in 2007.

A copy of the complete assessments and associated vulnerability summaries can be obtained through the **California Department of Health Services, Drinking Water Field Operations Branch, San Francisco District Office, 850 Marina Bay Parkway, Building P 2nd floor, Richmond, CA 94804** or by contacting **Ms. Betty Graham, Senior District Engineer, California Department of Health Services at (510) 620-3454**.



Mike Lamphear (left) and Richard Banuelos (right) are performing uni-directional flushing to enhance water quality.

## Abbreviations

- 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. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- MCLG - Maximum Contaminant Level Goal:** The level of a contaminant in drinking water below which there is no known or expected risk to health. Set by USEPA.
- MRDL - Maximum Residual Disinfectant Level:** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- MRDLG - Maximum Residual Disinfectant Level Goal:** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by USEPA.
- NA - Not Applicable**
- ND - Not Detected**
- NL - Notification Level**
- NTU - Nephelometric Turbidity Units:** The standard unit for turbidity measurements.
- 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 California EPA.
- ppb - Parts per billion:** or micrograms per liter (ug/L)
- ppm - Parts per million:** or milligrams per liter (mg/L)
- TOC - Total Organic Carbon**
- TT - Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water.

# Distribution System Monitoring Results

DETECTION OF COLIFORM BACTERIA				
Substance	MCL	MCLG	Distribution System	Contaminant Sources
Total Coliform Bacteria	5%	0	3.05% (Highest monthly value)	Naturally present in the environment

For 2006, the City of Fairfield on average collected 31 samples each week to monitor the bacteriological integrity of the distribution system.

DISINFECTION BYPRODUCTS PRECURSORS, DISINFECTION BYPRODUCTS AND DISINFECTANT RESIDUALS					
Substance	Compliance Ratio	Range	Average	Contaminant Sources	
DBP Precursors (TOC)	More than or equal to 1.0	2.21-3.67	2.72	Various natural and man-made sources.	
Substance (reporting units)	MCL	PHG (MCLG)	Range	Highest Running Annual Average	Contaminant Sources
Trihalomethanes (ppb)	80	NA	12.9-50.1	29.5	By-product of drinking water chlorination.
Haloacetic Acids (ppb)	60	NA	3.1-12.0	7.3	By-product of drinking water chlorination.
Substance (reporting units)	MRDL	MRDLG	Range	Average	Contaminant Sources
Chlorine (ppm)	4.0	4.0	ND-1.42	0.57	Drinking water disinfectant added for treatment.

TURBIDITY AS A MEASURE OF FILTER PERFORMANCE (Measures the relative clarity of the water produced.)				
Substance (reporting units)	MCL	PHG (MCLG)	Entry Point to Distribution System	Contaminant Sources
Turbidity (NTU)	TT = 1 Percentage of samples ≤0.3	NA	0.145 (Highest Level) 100%	Soil runoff

RESULTS OF DRINKING WATER FLUORIDATION					
Substance (reporting units)	MCL Control Range	MCL Optimal Level	Range Detected	Average Detected	Contaminant Sources
Fluoride (ppm)	0.7- 1.3	0.8	0.68-1.03	0.862	Water additive that promotes strong teeth.

DETECTION OF LEAD AND COPPER IN CUSTOMER TAPS						
Substance (reporting units)	AL	MCLG	No. of Samples (Collected in 2005)	90th Percentile Detected	No. Sites exceeding AL	Contaminant Sources
Lead (ppb)	15	2	50	ND	0	Plumbing corrosion; erosion of natural deposits.
Copper (ppm)	1.3	0.17	50	0.055	0	Plumbing corrosion; erosion of natural deposits.

All of Fairfield's testing results for 2006 were within state and federal water standards.