

# ANNUAL WATER QUALITY REPORT 1999

Los Vaqueros Reservoir improves water quality for Central and East Contra Costa County. Photo by: Stephen Joseph

## Your Drinking Water

### A Report on the Quality of Your Tap Water

From the Cities of Antioch, Martinez and Pittsburg, Diablo Water District (Oakley) and the Contra Costa Water District

#### To Our Customers:

To ensure that your tap water is clean and safe to drink, your water provider employs state-of-the-art treatment technology and carefully protects its sources of water. In 1999, the treated tap water delivered to your home met all primary drinking water standards set by the state and federal governments.

Primary standards are set for contaminants that could affect health. For more information, see the Treated Water Table and Raw Water Tables on pages 4-7.

This report presents a "snapshot" of the quality of your drinking water in 1999. It will provide you with answers to the questions you may have about your tap water. It contains information about the quality of water delivered to customers by the Contra Costa Water District; the cities of Antioch, Martinez and Pittsburg; and the Diablo Water District in Oakley. This

report is required each year by the California Department of Health Services and the U.S. Environmental Protection Agency (EPA).

**For more information about the tap water in your community, please call one of the following points of contact for your water provider:**

- CCWD (Central Contra Costa):  
Jean Zacher - (925) 688-8156
- City of Antioch:  
Lori Sarti - (925) 779-7024
- City of Martinez:  
Alan Pellegrini - (925) 372-3587
- City of Pittsburg:  
John Edwards - (925) 439-4026
- Diablo Water District (Oakley):  
Danny Bowers - (925) 625-2112

**A Note to Bay Point Residents:** California Cities Water Company is your tap water provider. You should receive a separate report from them containing information about your drinking water. If you have questions or need more information, call California Cities Water Company at 1-800-999-4033.

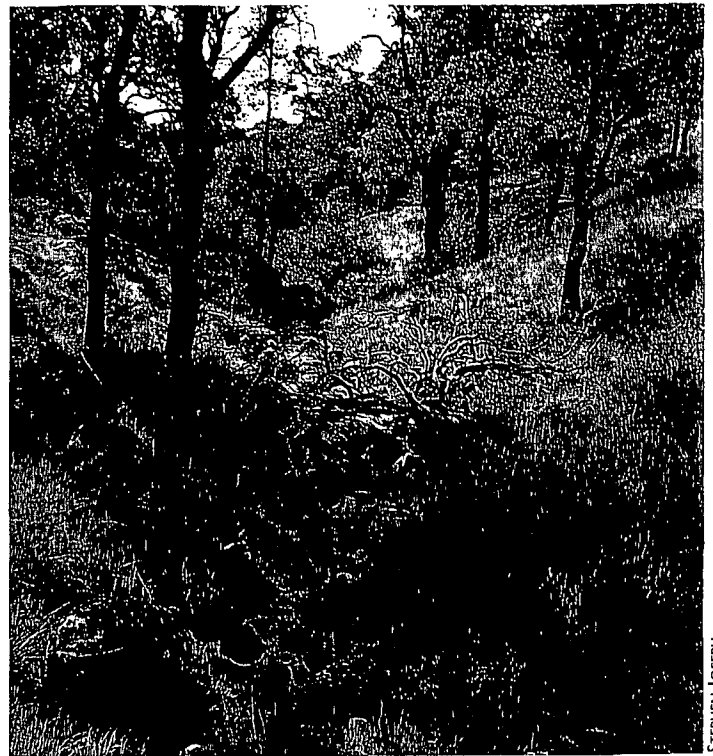
## All Drinking Water Systems are Required by the California Department of Health Services to Provide Consumers With the Following Information:

**All drinking water, including bottled water, in all communities 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.**

The sources of drinking water (both tap 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. It can also pick up substances resulting from the presence of animals or from human activity.

### *Contaminants that may be present in source water before it is treated 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 result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides, which 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 that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.



STEPHEN JOSEPH

*Streams are among the bodies of water that contribute to your water supply.*

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the California Department of Health Services prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Limits are also established by the U.S. Food and Drug Administration for contaminants in bottled water that must provide the same protection for public health.

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.

**For more information about contaminants and potential health effects, or for EPA and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection from Cryptosporidium and other microbial contaminants, call the EPA's Safe Drinking Water Hotline at: 1-800-426-4791**

# The Source of Your Water

**The primary source of water for 430,000 residents in Central and Eastern Contra Costa County is the surface water of the Sacramento-San Joaquin Delta.**

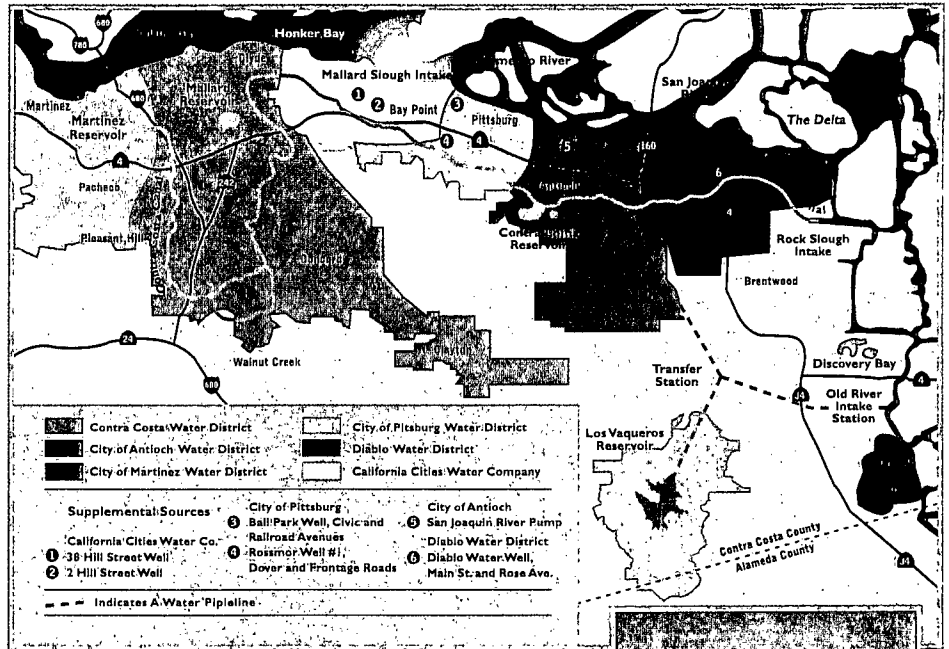
Originating from rivers within California's mountain ranges, the water flows into the Sacramento and San Joaquin rivers, eventually finding its way into the Delta. Delta water is drawn from Rock Slough near Oakley, Old River near the Town of Discovery Bay, and Mallard Slough in Bay Point. The untreated water is transported in the Contra Costa Canal, which starts at Rock Slough, then stretches west to Clyde, south to Walnut Creek, and north to Martinez. CCWD can also store water in the Los Vaqueros Reservoir south of Brentwood, the Contra Loma Reservoir in Antioch, the Mallard Reservoir in Concord, and the Martinez Reservoir in Martinez.

The Contra Costa Water District treats this water and provides it to about 220,000 residents in Clayton, Clyde, Concord, Pacheco, Port Costa, and parts of Pleasant Hill, Martinez and Walnut Creek. CCWD also sells untreated water (raw water) from the canal to the following water purveyors: the cities of Antioch, Martinez and Pittsburg, the California Cities Water Company (Bay Point), and the Diablo Water District (Oakley). These five agencies treat, distribute and bill for the water themselves. Most of these agencies, as well as CCWD, can draw groundwater from wells or surface water from their own reservoirs or the Sacramento or San Joaquin rivers as supplemental supplies. (Please refer to the map for locations.)

A Watershed Sanitary Survey was completed by CCWD and the City of Antioch in May of 1997. This survey assessed the vulnerability of the Sacramento-San Joaquin Delta to potential forms of contamination. Contamination could potentially come from industrial and municipal wastewater discharges, urban runoff, highway runoff, agricultural runoff, pesticides

(insecticides/herbicides/fungicides), grazing animals, concentrated animal facilities, wild animals, mine runoff, recreational activities, traffic accidents/spills (including cars, trucks, trains, ships and aircraft), seawater intrusion, geologic hazards, and solid and hazardous waste disposal facilities.

The survey concluded that these potential sources of contamination are regularly mitigated by the natural flushing of the



Delta, controls at the contamination sources or existing water treatment practices. After completion of the Sanitary Survey, the Los Vaqueros Reservoir was completed and filled. This reservoir provides another means of mitigation because water can be drawn from it when water can not be taken directly from the Delta.



Contra Costa Canal

**An update to the current survey is scheduled to be completed by May 2002, as required by statute. More information can be obtained by calling (925) 688-8156.**

# Test Results for Treated and Raw Water

## Treated Water: Primary Drinking Water Standards

Constituent Name	CCWD				DIABLO WATER DIST.		CITY OF ANTIOCH	
	MCL	PHG (MCLG)	Average	Range	Average	Range	Average	Range
Nitrate as NO <sub>3</sub> (mg/L)	45	45	ND	ND-2.85	3.6	ND-8.6	ND	ND-3
Fluoride (mg/L)	2	1	0.66	0.19-0.94	0.73	0.62-0.80	0.86	0.60-1.24
Aluminum (mg/L)	1	n/a	ND	ND	0.074	ND-0.18	ND	ND-0.06
Arsenic (ug/L)	50	n/a	ND	ND	ND	ND	ND	ND
Selenium (ug/L)	50	(50)	ND	ND	ND	ND	ND	ND
Total Trihalomethanes (ug/L)	100	n/a	22.3	14.7-30	0.9	ND-4.4	43	33-57
Total Coliform	>5% of monthly samples	0	0.04%	0-0.47%	0.15%	0-1.8%	0	0
Constituent Name	MCL	PHG (MCLG)	Maximum value	Lowest monthly % of samples that meet requirements	Maximum value	Lowest monthly % of samples that meet requirements	Maximum value	Lowest monthly % of sample that meet requirements
Turbidity (NTU)	TT=5NTU	n/a	0.05	100%	0.05	100%	0.18	100%
Lead/Copper Study	Action limit		# of sites exceeding Action Limit	90% percentile	# of sites exceeding Action Limit	90% percentile	# of sites exceeding Action Limit	90% percentile
EPA Lead Study (ug/L)	15		0	ND	2†	ND	0	ND
EPA Copper Study (mg/L)	1.3		0	0.057	0	ND	0	0.1
Date of Study				Aug-99		Aug-99		Sep-97

† No Lead was detected in the drinking water supplied to customers. Two of 46 homes tested showed some lead from internal plumbing fixtures. Subsequent retesting showed lead levels far below action levels.

## Treated Water: General Treated Water Quality Parameters

Constituent Name	CCWD		DIABLO WATER DIST.		CITY OF ANTIOCH		CITY OF MARTINEZ		CITY OF PITTSBURG	
	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Boron (ug/L)	114	75-147	141	50-250	ND	ND	NR	NR	NR	NR
pH	8.81	8.68-8.95	8.8	8.6-9.0	8.5	7.8-9.0	8.97	8.61-9.27	8.5	8.4-8.5
Bromide (mg/L)	0.12	ND-0.16	0.14	ND-0.21	NR	NR	NR	NR	NR	NR
Ammonia (mg/L)	0.26	0.21-0.31	0.3	0.23-0.44	0.05	0.03-0.15	NR	NR	NR	NR
Silica Dioxide (mg/L)	8.9	7.9-10.6	13.6	12.5-16.0	NR	NR	NR	NR	NR	NR
Alkalinity (mg/L)	65	57-80	76	60-94	67	45-102	76	52-105	93	69-114
Hardness (mg/L)*	79	63-90	86	55-115	83	54-156	88	56-128	115	76-151
Calcium (mg/L)	15	10.0-19	16	8.0-24	19	13-28	18	14-22	n/a	31
Magnesium (mg/L)	9.2	7.3-10.3	9.6	6.6-13	7.5	6.1-9.0	9.4	7.8-11	n/a	17
Potassium (mg/L)	1.93	1.5-2.0	2	1.4-2.7	1.1	1.1-1.2	1.9	1.3-2.5	n/a	4
Sodium (mg/L)	41	31-52	48	30-67	35	1.1-77	40	28-52	n/a	82
Disinfection Byproducts										
Constituent Name	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Bromate (ug/L)	NR	NR	7.3	ND-15	NR	NR	5	ND-13	NR	NR
Haloacetic acids (ug/L)	9.4	ND-12.5	ND	ND-8.1	9	1.4-22	2.0	ND-2.9	5	3-6.0
Haloacetonitriles (ug/L)	5.3	ND-9.9	1.9	ND-6.1	NR	NR	NR	NR	NR	NR

General Treated Water Quality Parameters are provided as a courtesy of your water provider because this information is often useful for household purposes.

CITY OF MARTINEZ		CITY OF PITTSBURG		Likely Source of Contaminants
Average	Range	Average	Range	
3.2	ND-6.4	ND	ND	By-product of drinking water chloramination.
0.8	0.08-1.1	0.81	0.78-0.83	Water additive that promotes strong teeth; erosion of natural deposits
ND	ND	ND	ND	Erosion of natural deposits; residue from some surface water treatment processes
ND	ND	n/a	3	Erosion of natural deposits
ND	ND	n/a	5	Erosion of natural deposits; discharge from petroleum refineries and chemical manufacturers
4	0.7-8	7	4.0-11	By-product of drinking water chlorination
0.14%	0-1.7%	0	0	Naturally present in the environment
Maximum value	Lowest monthly % of samples that meet requirement	Maximum value	Lowest monthly % of samples that meet requirement	
0.05	100%	0.33	100%	Soil runoff.
# of sites exceeding Action Limit	90% percentile	# of sites exceeding Action Limit	90% percentile	
0	ND	0	ND	Internal corrosion of household plumbing systems.
0	0.063	0	0.057	Internal corrosion of household plumbing
	Jun-97		Dec-97	

ND = Not Detected
NA = Not Analyzed
NR = Not Required
n/a = not applicable
SI = Saturation Index
AL = Regulatory Action Level
MCL = Maximum Contaminant Level
PHG = Public Health Goal
MCLG = Maximum Contaminant Level Goal
NTU = Nephelometric Turbidity Units
ppm = parts per million; or milligrams per liter (mg/L)
ppb = parts per billion; or micro-grams per liter (ug/L)
TT = Treatment Technique
< = less than; not detected
> = greater than
* Corrosivity:
(-) tends to corrode
(+) non-corrosive
*Hardness Classification:
Soft: 0-50 mg/L
Moderately Hard: 50-150 mg/L
Hard: 150-300 mg/L
Very Hard: 300+ mg/L

## Understanding the Tables:

These pages contain detailed information about the the water that comes from your tap after it is treated (Treated Water) and before it is treated (Raw Water). Your water is regularly tested for more than 120 chemicals and other substances, as well as radioactivity. Only substances that were detected in the treated and raw water are listed in the tables.

### Definitions

**Public Health Goal (PHG):** 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 Environmental Protection Agency.

**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 are set by the U.S. Environmental Protection Agency. *PHGs and MCLGs are non-mandatory goals based solely on public health considerations using the most recent scientific research available. When these goals*

*are set, the technological and economic feasibility of reaching these goals is not considered.*

**Maximum Contaminant Level (MCL):** 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 or technologically feasible.

**Primary Drinking Water Standard (PDWS):** MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**Secondary Drinking Water Standards:** Secondary MCLs are set for contaminants that affect the odor, taste or appearance of water.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Regulatory Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

# Water Quality Notifications

## CCWD Treated Water:

The following incident was fully reported, with public notice, when it occurred. On Feb 26, 1999, an event at the Bollman Water Treatment Plant in Concord caused an inadequate amount of chlorine to be injected into the water for one hour. This water was subsequently mixed thoroughly with 6 million gallons of water that was properly chlorinated. As a

result, all water that left the treatment plant for delivery to Central Contra Costa residents was adequately chlorinated and remained so in the distribution system. This was confirmed by bacteriological testing.

## Cryptosporidium:

Some samples of raw (untreated) water in the Contra Loma Reservoir and Contra Costa Canal contained cryptosporidium, however

**Cryptosporidium was not detected in your treated drinking water.** Cryptosporidium is a microbial pathogen found in surface

### Treated Water: Secondary Drinking Water Standards

Constituent Name	MCL	PHG (MCLG)	CCWD		DIABLO WATER DIST.		CITY OF ANTIOCH	
			Average	Range	Average	Range	Average	Range
Iron (ug/L)	300	n/a	107	ND-127	108	ND-130	ND	ND
Manganese (ug/L)	50	n/a	10	1.8-41	4.4	1.4-6.1	ND	ND
Corrosivity (SI) (+) non-corrosive (-) tends to corrode	non-corrosive	n/a	+0.34	+0.08-+0.75	+0.59	+0.35-+1.01	+0.02	-0.33 -+ 0.22
Color	15 units	n/a	ND	ND-5	5	ND-5	ND	ND
Odor	3 units	n/a	1	1	1	1	ND	ND-1
Turbidity (NTU)	5	n/a	0.18	0.04-1.45	0.089	0.029-0.31	0.05	0.04-0.09
Zinc (mg/L)	5	n/a	0.05	ND-0.05	0.055	ND-0.07	ND	ND
MBAS (ug/L)	500	n/a	ND	ND	ND	ND	ND	ND-0.16
Total Dissolved Solids (mg/L)	1000	n/a	212	183-232	258	224-300	207	60-320
Chloride (mg/L)	500	n/a	39	23-61	42	15-60	52	16-115
Sulfate (mg/L)	500	n/a	50	44-62	56	34-82	36	29-43
Specific conductance (umhos)	1600	n/a	355	298-418	416	270-560	300	240-400

### CCWD Raw Water Sources: Primary Drinking Water Standards

	MCL	PHG (MCLG)	CONTRA LOMA		MALLARD SLOUGH		OLD RIVER	
			Average	Range	Average	Range	Average	Range
Total Alpha (pCi/L)	15	(0)	n/a	1.3	n/a	1.4	n/a	3.3
Total Beta (pCi/L)	50	(0)	n/a	ND	n/a	ND	n/a	ND
Strontium-90 (pCi/L)	8	n/a	n/a	ND	n/a	ND	n/a	ND
Tritium (pCi/L)	20,000	n/a	n/a	1125	n/a	ND	n/a	ND
Uranium (pCi/L)	20	(0)	n/a	ND	n/a	ND	n/a	3
Combined Ra226 & Ra228 (pCi/L)	5	(0)	n/a	2.9	n/a	ND	n/a	1.3
<b>SECONDARY DRINKING WATER STANDARDS</b>								
Methyl tert butyl ether (MTBE)-ug/L	5	n/a	ND	ND	ND	ND	ND	ND

### Supplemental Raw Water Sources: Primary Drinking Water Standards

	MCL	PHG (MCLG)	CITY OF ANTIOCH San Joaquin River		DWD Oakley Well	CITY OF PITTSBURG			
			Average	Range	Range	Rossmoor Well		Ballpark Well	
						Average	Range	Average	Range
Total Alpha (pCi/L)	15	(0)	ND	ND-1.6	6.2-9.0	n/a	6.3	n/a	1
Total Beta (pCi/L)	50	(0)	NR	NR	ND-7.6	n/a	10.9	n/a	10.6
Tritium (pCi/L)	20,000	n/a	NR	NR	ND-1160	n/a	ND	n/a	ND
Uranium (pCi/L)	20	(0)	ND	ND	4.1-6.4	n/a	5.4	n/a	ND
Combined Ra226 & Ra228 (pCi/L)	5	(0)	NR	NR	ND-2.4	n/a	0.7	n/a	1.3

water throughout the United States. It is spread to water through human and animal activity. Current test methods do not identify whether cryptosporidium organisms are dead or if they are capable of causing disease. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. To address cryptosporidium, the State of California has implemented a Cryptosporidium Action Plan, and your water provider is treating your drinking water to the requirements of this plan. In addition, the City of Martinez, Diablo Water District and Contra Costa Water District are treating water with ozone, which is

potentially the most effective disinfectant currently available. Swallowing cryptosporidium may cause cryptosporidiosis, an abdominal infection characterized by nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome this disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised people to talk to their doctors about precautions they can take to avoid infection. Cryptosporidium must be swallowed to cause disease, and it may be spread through means other than drinking water.

CITY OF MARTINEZ		CITY OF PITTSBURG		MAJOR SOURCES
Average	Range	Average	Range	
ND	ND	n/a	ND	Corrosion byproduct of distribution system plumbing
ND	ND	n/a	ND	Byproduct of drinking water treatment process
+0.48	+0.14-+0.88	n/a	+0.42	Natural or artificially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
ND	ND	n/a	ND	Naturally-occurring organic materials
1.9	1.0-2.0	1.8	1.6-2.0	Naturally-occurring organic materials
0.05	0.04-0.05	0.17	0.04-0.33	Soil runoff
ND	ND	n/a	ND	Runoff/leaching from natural deposits
0.02	ND-0.04	n/a	ND	Municipal and industrial waste discharges
250	160-340	260	167-357	Runoff/leaching from natural deposits
45	18-89	66	38-95	Runoff/leaching from natural deposits
48	35-61	n/a	55	Runoff/leaching from natural deposits
353	265-440	n/a	620	Substances that form ions when in water; seawater influence

### Methyl-tertiary Butyl Ether:

Four times a year, CCWD checks untreated water at numerous locations in its reservoirs and canal for Methyl-tertiary Butyl Ether (MTBE). (MTBE is an oxygenate additive to gasoline used to meet federal and state clean air emissions standards.) In October 1999, a sample taken from the Los Vaqueros Reservoir indicated an MTBE level of 18 parts per billion (ug/L). It appears this result was caused by sample contamination. All other samples taken in 1999, as well as a follow-up sample taken in March 2000, showed no detectable level of MTBE. Samples can be contaminated in a number of ways, including improper collection, contaminated sample bottles or lab error. To protect water quality at Los Vaqueros, recreational gasoline boats are not allowed on the reservoir because they can be a source of MTBE.

ROCK SLOUGH		LOS VAQUEROS		MAJOR SOURCES
Average	Range	Average	Range	
n/a	5.1	n/a	1.8	Erosion of natural deposits
n/a	7.1	n/a	ND	Decay of natural and manmade deposits
n/a	ND	n/a	+2.1	Decay of natural and manmade deposits
n/a	ND	n/a	1045	Decay of natural and manmade deposits
n/a	3.2	n/a	ND	Erosion of natural deposits
n/a	3.1	n/a	ND	Erosion of natural deposits
ND	ND	ND	ND-18*	*Sample contamination determined to be most likely cause of one detection in Los Vaqueros. See MTBE statement above.

*A Note to Our Customers:* If you received water from any of the providers on pages 4 and 5, the CCWD raw water sources table to the left also applies to you because your provider receives raw water from CCWD. Please review this chart in addition to the results from your city or water district.

### MAJOR SOURCES

- Erosion of natural deposits
- Erosion of natural deposits
- Decay of natural and manmade deposits
- Erosion of natural deposits
- Erosion of natural deposits

*A Note to Our Customers:* The Supplemental Raw Water Sources Table to the left reports results of testing on water used by individual providers as a supplement to the raw water they received from CCWD through the Contra Costa Canal. The City of Martinez is not listed in the Supplemental Raw Water Sources table because it does not supplement.



Contra Costa Water District  
P.O. Box H20  
Concord, CA 94524

CARRIER ROUTE  
PRESORT  
BULK RATE  
U.S. Postage  
PAID  
Concord, CA  
Permit #513

## ANNUAL WATER QUALITY REPORT 1999

### How to Get Involved In the Quality of Your Water

#### Contra Costa Water District:

The Board of Directors meets in regular session at 6:30 p.m. on the first and third Wednesday of each month. Meetings are held in the Board Room at the Contra Costa Water District Center, 1331 Concord Ave., Concord. For meeting agendas, contact the District Secretary at (925) 688-8024.

#### City of Martinez:

The Martinez City Council meets in regular session at 7 p.m. on the first and third Wednesday of each month. Meetings are held in Council Chambers at 525 Henrietta Street, Martinez. For meeting agendas, contact the City Clerk at (925) 372-3512.



#### City of Pittsburg:

The Pittsburg City Council meets in regular session at 7 p.m. on the first and third Mondays of each month. Meetings are held in Council Chambers at 65 Civic Drive, Pittsburg. For meeting agendas, call (925) 252-4850.

#### City of Antioch:

The Antioch City Council meets in regular session at 7 p.m. on the second and fourth Tuesday of each month. Meetings are held in Council Chambers at Third and H streets, Antioch. For meeting agendas, contact the City Clerk at (925) 779-7009.

#### Diablo Water District (Oakley):

The Board of Directors meets in regular session at 7:30 p.m. on the fourth Wednesday of each month. Meetings are held at 2107 Main Street, Oakley. For meeting agendas, contact the District at (925) 625-3798.

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

*This report contains information about your drinking water. If you know someone who does not read English well, please help them translate and understand it.*