



ZONE 7 WATER AGENCY

QUALITY ON TAP

2003

ANNUAL
CONSUMER
CONFIDENCE
REPORT

ABOUT THIS REPORT

This is an annual report on the quality of drinking water delivered by the Zone 7 Water Agency. We are proud to report that during calendar year 2003, as in years past, your tap water met or exceeded all federal and state standards for drinking water.

Since its formation more than 40 years ago, Zone 7 has placed a premium on water quality. Its well-trained and highly qualified staff employs state-of-the-art treatment and monitoring methods to ensure that the water you and your family use meets or exceeds the most rigorous standards. In order to safeguard the quality of your tap water, the California Department

of Health Services (DHS) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. We treat our water according to the Department's regulations, which are at least as, and in many cases, more stringent than federal (U.S. EPA) standards.

You, as a consumer, have a right to know what is in your drinking water and where that water comes from. It is the goal of this Annual Consumer Confidence Report to answer questions you may have so that you may make informed choices regarding the water you and your family use. For more information, please contact Gurpal Deol, Zone 7 Water Quality Laboratory Supervisor, at **925-447-0533**.

As a member of the public, you are afforded numerous opportunities to participate in decisions surrounding the quality of your tap water. Regular meetings of the Zone 7 Board of Directors are open to the public and are scheduled the third Wednesday of each month at 7 p.m. in the Board Room. Special meetings, also open to the public, are held as needed. Meeting agendas are posted online at Zone

7's website (www.zone7water.com) or are available by calling **925-484-2600, Ext. 223**.

Educational Information

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. For more information about contaminants and potential health effects, call the EPA's Safe Drinking Water Hotline (**1-800-426-4791**).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy or 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 individuals should seek advice about drinking water from their health care providers. U.S. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are also from the Safe Drinking Water Hotline.

ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA POTABLE. TRADÚZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

ZONE 7'S SOURCES OF SUPPLY

Zone 7's primary source of supply is surface water from the State Water Project (SWP). Originating north of the Sacramento–San Joaquin Delta in the Feather River watershed, state water is brought into the Valley by the South Bay Aqueduct (SBA).

A second source of surface water is the local supply conserved in Del Valle Reservoir. The area's third major water source is the main groundwater basin. The groundwater basin stores natural recharge and artificially recharged SWP and Del Valle Reservoir supplies. Groundwater is pumped year-round and is pumped at higher rates to meet drought year and summer peak demands.

Surface water is treated at Zone 7's three water treatment plants: Del Valle Water Treatment Plant, Patterson Pass Water Treatment Plant and a new 8-million-gallons-per-day (MGD) ultrafiltration (UF) water treatment plant approved by DHS during 2003. The plant is located adjacent to the existing Patterson Pass Water Treatment but operates independently. New treatment technology is very effective in pathogen removal. The UF plant consists of 0.01 micron Aquasource membrane filters, an upflow solids contact clarifier and a chlorine contact tank.

Groundwater is disinfected to protect you against microbial contaminants. Zone 7's water system has the flexibility to address security concerns.

The following assessments of the drinking water sources for Zone 7 have been conducted:

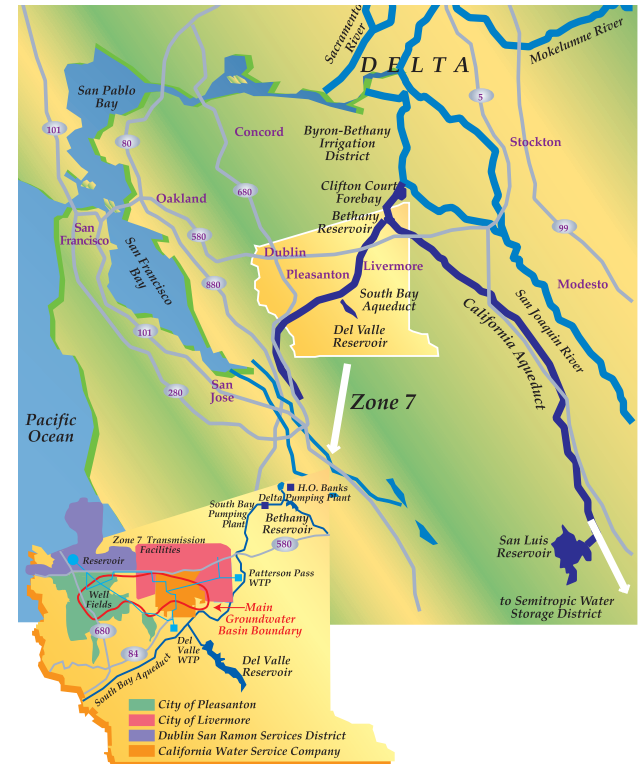
An assessment of the South Bay Aqueduct was completed in December 2002.

Many of the contaminants, such as pathogens, organic carbon and nutrients detected in the SBA water supply originate in the Sacramento and San Joaquin watersheds and the Delta. There are numerous contaminant sources such as agricultural drainage, wastewater treatment plant discharges and urban runoff. Recreational usage of the water also contributes contaminants to the Delta. In addition, seawater intrusion contributes salt and bromide to the water supply. The SBA source water is also vulnerable to cattle grazing in the watersheds of Bethany Reservoir, Del Valle Reservoir and along the open canal sections of the aqueduct. A small amount of irrigated vineyard land currently drains into the SBA.

Not all water in the Bay Area comes from the same source, or passes through the Delta. This can account for some of the apparent variations in the taste, odor and hardness of the delivered drinking water in different water service areas.

Although the SBA water source is considered vulnerable to various possibly contaminating activities, it is important to note that there are multiple barriers for physical removal of contaminants and disinfection of the source water at the water treatment plants. All drinking water standards are met in the treated water that is delivered to customers in the Zone 7 Water Agency service area.

Groundwater Sources: From source water assessment, wells are considered most vulnerable to chemical/petroleum



Zone 7 serves all of eastern Alameda County, wholesaling treated water to local retailers and distributing untreated water to local agriculture and golf courses.

pipelines, leaking tanks, dry cleaners, gas stations, groundwater contaminant plumes, machine shops, photo processing/printing, and sewer collection systems. These activities have potential to contaminate water supplies, but no organic contaminants from these activities have ever been detected in Zone 7 groundwater supply.

For a copy of any summary report or to review any complete assessment, please contact Zone 7.

As a resident, you can do your part to prevent water pollution by using yard and garden chemicals wisely, keeping your car free from oil leaks and recycling automotive fluids, and following other tips available from Zone 7.

DEFINITIONS OF KEY TERMS

- 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 and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

- 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.

- Maximum Residual Disinfectant Level (MRDL)** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

- Maximum Residual Disinfectant Level Goal (MRDLG)** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by the U.S. Environmental Protection Agency.

- 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.

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

- Treatment Technique (TT)** A required process intended to reduce

the level of a contaminant in drinking water.

- Action Level (AL)** The concentration of a contaminant which, if

exceeded, triggers treatment or other requirements which a water system must follow.

JANUARY–DECEMBER 2003 WATER

REGULATED CONTAMINANTS

DISTRIBUTION SYSTEM			
CONTAMINANT	MCL	DLR	PHG MCLG* MRDLG**
Total trihalomethanes (TTHMs), ug/L	80	0.5	NA
Haloacetic acids (HAAs), ug/L	60	1	NA
Total coliform bacteria	5% of monthly samples are positive		0*
Chloramines Residual, mg/L as Chlorine	Maximum Residual Disinfectant Level (MRDL) = 4.0		4**
WATER SUPPLY SOURCES			
CONTAMINANT	MCL		PHG MCLG*
Turbidity	TT = 1 NTU		NA
	TT = percentage of samples <0.3 NTU		NA
Inorganic Chemicals			
Aluminum (ug/L)	1000	50	600
Barium (ug/L)	1000	100	2000
Chromium total (ug/L)	50	10	100*
Selenium (ug/L)	50	5	50*
Fluoride (mg/L)	2	0.1	1
Nitrate (as NO3) (mg/L)	45	2	45
Radionuclides (a)			
Gross Alpha (pCi/L)	15	3	NA
Gross Beta (pCi/L)	50	4	NA
Uranium (pCi/L), (a)	20	1	0.5
REGULATED CONTAMINANTS W			
Conductivity (umhos/cm)	1600		–
Chloride (mg/L)	500		–
Sulfate (mg/L)	500	0.5	–
Total Dissolved Solids (mg/L)	1000		–
UNREGULATED CONTAMINANTS B			
Boron (ug/L)	AL = 1000	100	–
Vanadium (ug/L)	AL = 50	3	–
Additional Parameters — Included to a			
Corrosivity (Units)	(b)		–
Alkalinity (as CaCO3) (mg/L)	–		–
Hardness total (as CaCO3) (mg/L)	–		–
Calcium (mg/L)	–		–
Magnesium (mg/L)	–		–
Potassium (mg/L)	–		–
Sodium (mg/L)	–		–
pH (Units)	–		–
Silica (mg/L)	–		–
Total Organic Carbon (mg/L)	–	0.7	–
Total Radon (pCi/L)	(a)	100	–

(a) Data are from latest monitoring in 2002, (b) Zone 7 strives to supply non-aggressive water (Corrosivity > 12) by pH adjustment on surface treated water. Ab Disinfectant Level Goal, NA = Not Applicable. TT = Treatment Technique, NTU = Nephelometric Turbidity Unit, ug/L = Micrograms per liter, mg/L = Milli

DETECTED CONTAMINANTS

The table below shows the average level and range of each detected regulated contaminant. Detected secondary standards, unregulated chemicals and additional

parameters are also listed.

In addition to the regulated organic contaminants, Zone 7 monitors unregulated contaminants for regulatory requirements. Unregulated contaminant

monitoring helps EPA and the DHS to determine where certain contaminants occur and whether the contaminants need to be regulated in the future. Zone 7's frequency for monitoring

WATER QUALITY DATA — CONTAMINANTS DETECTED IN WATER SUPPLY

CONTAMINANTS WITH PRIMARY MCLs, established by the State of California Department of Health Services

* Highest running annual average		Range of individual samples	
45		ND-77	
17		ND-35	
Highest percentage of monthly positive samples			
0%			
Running Annual Average (RAA)		Range of Monthly Average Chloramines	
1.5		1.3-2.0	

Del Valle Water Treatment Plant		Patterson Pass Water Treatment Plant		Mocho Wellfield		Stoneridge Well		Hopyard Wellfield	
Highest Level Found = 0.27 NTU		Highest Level Found = 0.16 NTU		Average	Range	Average	Range	Average	Range
100%		100%		Not Applicable		Not Applicable		Not Applicable	
Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
ND	ND	ND	ND	ND	ND-180	ND	ND-57	ND	ND-81
ND	ND	ND	ND	220	140-350	250	210-320	180	100-360
ND	ND	ND	ND	ND	ND	ND	ND-10	ND	ND
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND-5
0.1	ND-0.2	0.1	ND-0.2	ND	ND-0.2	0.1	ND-0.2	0.1	ND-0.3
ND	ND-2	ND	ND-3	19	9-26	16	15-17	12	9-14
ND	ND	ND	ND	4	ND-7	4	3-5	4	ND-6
ND	ND-4	ND	ND	ND	ND-4	ND	ND	ND	ND-5
ND	ND	ND	ND	ND	ND-3	ND	ND	2	ND-4

CONTAMINANTS WITH SECONDARY MCLs, established by the State of California Department of Health Services

424	262-650	416	268-704	967	811-1202	637	623-658	794	756-856
66	38-134	82	42-150	95	81-132	40	37-42	56	46-66
26	13-49	25	13-49	72	60-93	35	33-36	55	45-66
238	151-364	233	159-374	581	484-766	380	364-396	487	452-558

CONTAMINANTS REQUIRING MONITORING, established by the State of California Department of Health Services

170	90-310	160	90-320	610	410-920	340	260-420	450	300-600
ND	ND	ND	ND	ND	ND-9	4	ND-8	ND	ND-8

Additional information to assist consumers in making health or economic decisions, i.e. low-sodium diet, water softening, etc.

12.3	11.9-13.2	12.1	11.8-12.7	12.4	12.1-12.7	12.3	12.2-12.4	12.3	12.1-12.6
81	54-130	83	55-96	291	227-358	236	226-244	285	255-297
96	60-146	82	61-115	397	268-498	250	242-255	319	267-358
22	11-35	21	9-39	87	52-104	51	48-56	75	56-86
10	6-17	9	3-14	43	34-61	29	25-33	32	27-41
1.8	1.1-3.3	2.2	1.1-4.8	1.8	1.3-2.2	1.5	1.3-1.7	1.6	1.3-1.8
50	28-92	58	32-89	57	40-76	40	34-47	54	32-78
8.7	8.4-9.2	8.6	8.2-9.1	7.5	7.3-7.8	7.8	7.6-7.9	7.6	7.3-7.8
12	8-17	14	9-28	25	20-30	26	22-30	24	21-26
1.8	1.1-2.8	1.5	1.1-2.1	ND	ND-1.0	ND	ND	ND	ND-0.8
NA	NA	NA	NA	230	180-270	290	270-340	250	230-260

*ater. Abbreviations/Units: MCL = Maximum Contaminant Level, DLR = Detection Limit for Purposes of Reporting (DHS established), PHG = Public Health Goal, MCLG = Maximum Contaminant Goal, MRDLG = Maximum Residual Limit, AL = Action level, ND = Monitored for but not detected at or above DLR. ND or value in the range column indicates that more than one analysis performed.

WATER QUALITY MANAGEMENT

unregulated organic contaminants is the same as for regulated organics. (The State allows water agencies to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative, are more than one year old.)

- **TOC (Total Organic Carbon)** has no health effects. However, TOC provides a medium for the formation of disinfection byproducts. These byproducts include THMs (trihalomethanes) and HAAs (haloacetic acids). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer. Regulatory TOC removal requirements are applicable to conventional water treatment plants only. Treatment operation is optimized for maximum TOC removal and Zone 7 THMs and HAAs levels are well below MCLs. TOC comes from various natural and man-made sources.

- **Turbidity** is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

- **Sodium and Hardness**—Although sodium and hardness do not have MCLs, they are of concern to many consumers who are worried about sodium intake and believe hardness of the water could affect their health. Therefore, monitoring is required and detections are included in the table along with the other water quality data. Hardness is the sum of naturally occurring polyvalent cations present

in the water, generally calcium and magnesium. Sodium refers to naturally occurring salt in the water.

Where do contaminants come from?

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, and can pick up substances resulting from the presence of animals or from human activity.

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 result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, 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.

In order to ensure that tap water is safe to drink, U.S. EPA and the California Department of Health Services 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.

Major Sources for Detected Primary Standards

- **Aluminum** Erosion of natural deposits.
- **Barium** Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
- **Chromium** Discharge from steel and pulp mills; erosion of natural deposits.
- **Fluoride** Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
- **Nitrate** Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
- **Gross alpha** Erosion of natural deposits.
- **Gross beta** Decay of natural and man-made deposits.
- **Uranium** Erosion of natural deposits.
- **Turbidity** Soil runoff.
- **Selenium** Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufactur-

PRIMARY STANDARDS

CONTAMINANTS NOT DETECTED IN ZONE 7 WATER SUPPLY

ers; runoff from livestock lots (feed additive).

Delivered Water Quality

Zone 7 strives to deliver equal and comparable quality water to all its customers. Representative turnouts in the distribution system are monitored on a weekly and monthly basis to assess water quality. Conductivity and hardness are good indicators of water quality. A monthly delivered water quality report is posted on the Zone 7 website and made available to retailers.

Zone 7's Water Quality Management Program

Zone 7 recently completed the development of its Water Quality Management Program with the aid of active customer involvement over the last two years.

The program will help guide operations and establish capital facilities needs and design guidelines. The program has identified about \$20 million worth of capital improvement projects to mitigate earthy-musty taste and odor from surface water supplies and hardness from groundwater supplies. These projects will be implemented as soon as feasible, over the next decade.

ORGANIC CHEMICALS

Synthetic Organic Chemicals (SOCs)

Alachlor*
Atrazine*
Bentazon
Benzo(a)pyrene*
Carbofuran
Chlordane*
2,4-D
Dalapon
Dibromochloropropane (DBCP)*
Di(2-ethylhexyl)adipate*
Di(2-ethylhexyl)phthalate*
Dinoseb
Diquat
Endothall
Endrin*
Ethylene Dibromide (EDB)*
Glyphosate
Heptachlor*
Heptachlor Epoxide*
Hexachlorobenzene*
Hexachlorocyclopentadiene*
Lindane*
Methoxychlor*
Molinate*
Oxamyl
Pentachlorophenol
Picloram
Polychlorinated Biphenyls
Simazine*
Thiobencarb*
Toxaphene
2,3,7,8-TCDD (Dioxin)
2,4,5-TP (Silvex)

Volatile Organic Chemicals (VOCs)

Benzene
Carbon Tetrachloride
1,2-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
Dichloromethane
1,2-Dichloropropane
1,3-Dichloropropene
Ethylbenzene
Methyl-tert-butyl ether (MTBE)
Monochlorobenzene
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Trichlorofluoromethane
1,1,2-Trichloro-1,2,2-Trifluoroethane
Vinyl Chloride
Xylenes

RADIONUCLIDES**

Combined Radium-226
and Radium-228
Tritium, Strontium-90

INORGANIC CHEMICALS

Arsenic	Cyanide
Antimony	Mercury
Asbestos	Nickel
Beryllium	Nitrite (as nitrogen)
Cadmium	Thallium

None of the primary contaminants listed above were detected at or above DLR in Zone 7 water supply during 2003 monitoring.

* Zone 7 in-house monitoring

** Latest monitoring conducted in 2002.

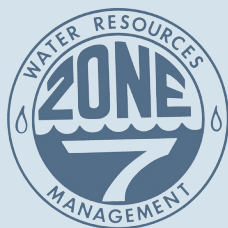
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ZONE 7 WATER AGENCY
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Zone 7 Water Agency was created by area voters in 1958. It is one of 10 active zones of the Alameda County Flood Control and Water Conservation District, a public agency established by voters in 1949 to address the County's water supply, drainage, and flood control problems. Zone 7 serves water to all of eastern Alameda County and a population of more than 181,000, wholesaling treated water to local retailers, including the Cities of Livermore and Pleasanton, the Dublin San Ramon Services District and the California Water Service Company. In addition to Zone 7 supply, the City of Pleasanton and Cal Water have their own water production wells. Zone 7 also distributes untreated water to agriculture and golf courses.