

QUALITY ON TAP 2004



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 2004, as in years past, your tap water met or exceeded all federal and state standards for drinking water.

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 and Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are also available from the Safe Drinking Water Hotline.

ANNUAL CONSUMER CONFIDENCE REPORT

Since its formation more than 40 years ago, Zone 7 has placed a premium on water quality, water supply and reliability. 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 DHS 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 925-454-5007.

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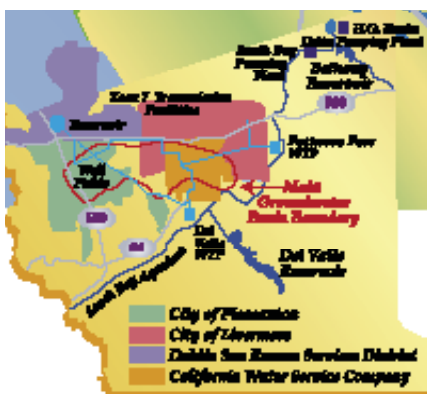
ZONE 7'S SOURCES OF SUPPLY

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 surface water stored in the Main Groundwater Basin. The groundwater basin stores natural recharge and artificially recharged SWP and Del Valle Reservoir supplies. This stored water 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 2004. The UF plant is located adjacent to the existing Patterson Pass Water Treatment Plant 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.

Stored surface water pumped from the groundwater basin is disinfected to protect you against microbial contaminants. Zone 7's water system has the flexibility to address security concerns.



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

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.

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 is practiced 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 were assessed from August 2000 to March 2002.

Wells are considered most vulnerable to chemical/petroleum 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 supplies.

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 Water Agency.

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 (see below) 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.
- Secondary Drinking Water Standards (SDWS)** MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels
- 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.
- Maximum Residual Disinfectant Level (MRDL)** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- 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.

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 contaminants, Zone 7 monitors unregulated contaminants for regulatory requirements. Unregulated contaminant monitoring helps EPA and DHS to determine where certain contaminants occur and whether the contaminants need to be regulated in the future.

- **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. Zone 7 TOC removal typically far exceeds regulatory requirements.

- **Turbidity** is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

- **Radon** is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your

home, test the air in your home. Testing is inexpensive and easy. Repair your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call the EPA's Radon Hotline (800-SOS-RADON).

Currently there are no regulatory monitoring requirements for radon, but a federal drinking water standard of 4,000 pCi/L with multimedia mitigation program was proposed in November 1999. Relatively low levels of radon were detected in Zone 7 groundwater supplies during 2004 monitoring.

JANUARY-DECEMBER 2004 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 = 95% of samples <0.3 NTU		NA
Total Organic Carbon (mg/L)	TT = Quarterly RAA Removal Ratio ≥ 1.0	0.3	NA
Inorganic Chemicals			
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 NO ₃) (mg/L)	45	2	45
Radionuclides			
Gross Alpha (pCi/L)	15	3	NA
Gross Beta (pCi/L)	50	4	NA
Uranium (pCi/L)	20	2	0.43
REGULATED CONTAMINANTS			
Corrosivity (Units)	Non-corrosive (a)		-
Conductivity (umhos/cm)	1600		-
Chloride (mg/L)	500		-
Sulfate (mg/L)	500		0.5
Total Dissolved Solids (mg/L)	1000		-
UNREGULATED CONTAMINANTS			
Boron (ug/L)	AL = 1000	100	-
Vanadium (ug/L)	AL = 50	3	-
Additional Parameters — Included to:			
Alkalinity (as CaCO ₃) (mg/L)	-		-
Hardness total (as CaCO ₃) (mg/L)	-		-
Calcium (mg/L)	-		-
Magnesium (mg/L)	-		-
Potassium (mg/L)	-		-
Sodium (mg/L)	-		-
pH (Units)	-		-
Silica (mg/L)	-		-
Total Radon (pCi/L)	-	100	-

(a) Zone 7 strives to
Abbreviations/Units: DLR = Detection Limit for Purposes of Reporting (DHS established). NA = Not Applicable

MAJOR SOURCES OF DETECTED CONTAMINANTS

- **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, and discharge from fertilizer and aluminum factories.
- **Nitrate** Runoff from fertilizer use, leaching from septic tanks and sewage, and 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 manufacturers; runoff from livestock lots (feed additive).
- **Total Organic Carbon** Various natural and manmade sources.

WATER QUALITY DATA - CONTAMINANTS DETECTED IN WATER SUPPLY

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

Highest running annual average	Range of individual samples
37	0.9-63
17	ND-43
Highest percentage of monthly positive samples	
0%	
Running Annual Average (RAA)	Range of Monthly Average Chloramines
1.8	1.4-2.1

EVERYDAY EQUIVALANTS

ONE MILIGRAM PER LITER (mg/L) = A SINGLE PENNY IN \$10,000
 ONE MICROGRAM PER LITER (ug/L) = ONE INCH IN A DISTANCE
 ROUGHLY EQUAL TO TWICE THE DIAMETER OF THE EARTH.

Del Valle Water Treatment Plant		Patterson Pass Water Treatment Plant		Mocho Wellfield		Stoneridge Well		Hopyard Wellfield	
Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Highest Level Found = 0.22 NTU		Highest Level Found = 0.20 NTU		0.15	0.06-0.49	0.07	0.05-0.09	0.13	0.06-0.46
Lowest % of samples ≤ 0.3 NTU = 100		Lowest % of samples ≤ 0.3 NTU = 100		Not Applicable		Not Applicable		Not Applicable	
Lowest Quarterly RAA Ratio = 1.7		Lowest Quarterly RAA Ratio = 1.4		Not Applicable		Not Applicable		Not Applicable	
ND	ND	ND	ND	210	140-340	230	220-270	150	110-210
ND	ND	ND	ND	ND	ND-10	10	ND-14	ND	ND-10
ND	ND	ND	ND	ND	ND-6	ND	ND	ND	ND-6
0.1	0.1-0.1	0.1	0.1-0.1	0.1	0.1-0.1	0.1	0.1-0.1	0.1	0.1-0.2
2.7	ND-6.6	2.1	ND-5.3	20	13-29	18	16-20	13	10-16
ND	ND	ND	ND	ND	ND-3	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND-12	ND	ND-6	ND	ND
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND-3

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

11.9	11.5 - 12.6	11.9	11.6 - 12.4	12.3	12.1 - 12.6	12.2	12.1 - 12.4	12.2	12.0 - 12.4
454	372-597	405	361-455	903	705-1142	633	550-690	757	758-859
82	55-130	72	52-105	93	63-132	47	40-59	59	48-78
28	17-42	25	14-40	70	56-87	37	32-44	58	44-74
270	206-362	239	198-282	572	482-752	398	370-448	476	422-520

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

170	110-260	100	ND-220	560	280-920	340	260-430	410	300-560
ND	ND	ND	ND	3	ND-5	5	4-6	3	ND-5

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

81	63-115	71	62-76	300	264-355	236	222-253	287	256-304
101	68-120	88	70-104	391	300-512	261	233-297	331	293-361
23	16-30	19	15-24	85	71-104	48	42-74	75	68-84
11	7-13	10	7-11	43	28-65	24	23-35	35	30-41
2.3	1.1-3.5	2.0	1.3-2.9	2.1	1.6-2.5	1.7	1.6-1.8	1.7	1.5-1.9
57	39-85	50	36-71	62	40-86	41	33-45	51	30-73
8.5	8.0-9.1	8.5	8.2-8.8	7.7	7.4-7.9	7.8	7.5-8.0	7.6	7.3-7.9
12	4.8-18	14	6-18	27	21-30	29	27-33	25	21-27
NA	NA	NA	NA	250	200-290	290	280-300	260	160-320

supply non-corrosive water (Corrosivity > 12) by pH adjustment on treated surface water.

NTU = Nephelometric Turbidity Unit. ug/L = Micrograms per liter. mg/L = Milligrams per liter. pCi/L = Picouries per liter. ND = Monitored for but not detected at or above DLR.

Q:

Where do contaminants come from?

A:

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 also 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. They 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.

PRIMARY STANDARDS

CONTAMINANTS *NOT* DETECTED IN ZONE 7 WATER SUPPLY

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**

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

INORGANIC CHEMICALS

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

None of the primary standards listed above were detected at or above required reporting limits (DLR) in Zone 7's water supply during 2004 monitoring.

* Zone 7 in-house monitoring. All other SOC's were monitored in 2002.

** Latest monitoring conducted in 2004.

ABOUT ZONE 7 WATER AGENCY

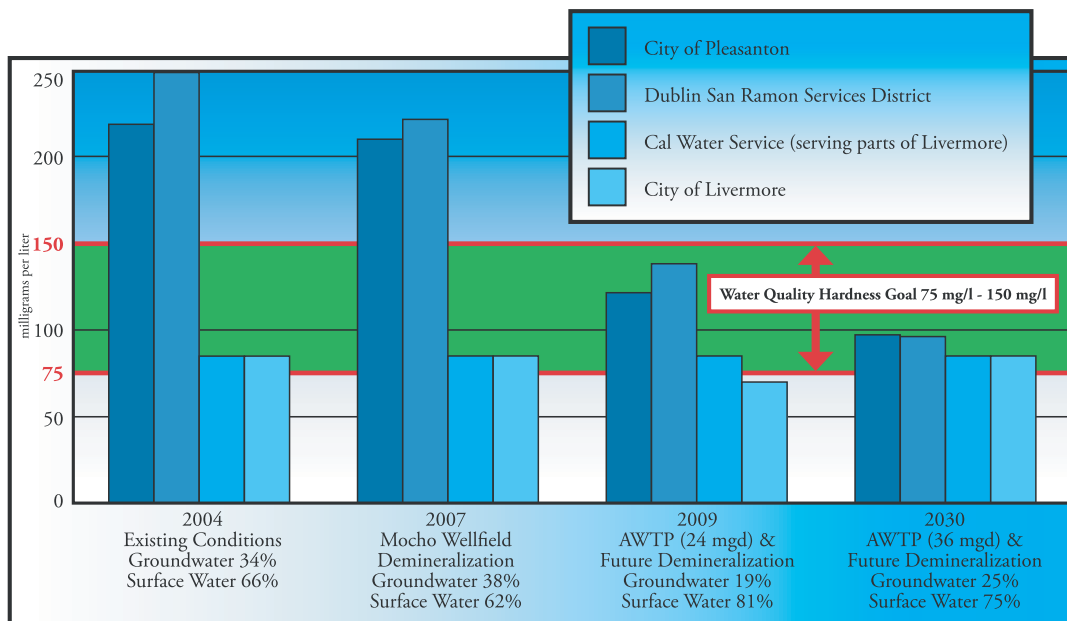
Zone 7 Water Agency was created by area voters in 1958. It is one of 10 active zones of the Alameda County Flood Control and Water Conservation District, a public agency established by voters in 1949 to address the County's water supply, drainage, and flood control problems. Zone 7 serves water to all of eastern Alameda County and a population of more than 184,000, 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.

WATER QUALITY MANAGEMENT PROGRAM

Zone 7's Water Quality Management Program reflects the agency's dedication to providing the highest level of delivered water quality in a manner that is fiscally responsible, innovative, proactive, and environmentally sensitive. The program identifies and plans for operational advances and capital improvements to improve water quality and respond to emerging water quality challenges. The Program included about \$50 million in capital projects to minimize earthy-musty taste and odor from surface water and reduce the hardness of groundwater supplies. These projects will be implemented as soon as feasible over the next several years. Zone 7 updates its water quality management activities every two years to ensure that system water quality improvements stay on track.

REDUCING WATER HARDNESS

As water moves through soils underground, it can pick up naturally occurring minerals such as calcium and magnesium. The buildup of minerals over long periods of time contributes to the hardness some Valley residents experience today. Demineralization, a project to remove some of the minerals from groundwater, will help reduce hardness. The Altamont Water Treatment Plant (AWTP), which will supply the Valley with more surface water, will also help to reduce water hardness. The graph below projects the expected reduction in water hardness as these two projects are phased in and operated together.



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