# Quality on Tap: 2002

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 2002, 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 stateof-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 guality 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 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. 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 available from the Safe Drinking Water Hotline (1-800-426-4791).

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

#### DETECTED CONTAMINANTS

The following table shows the average level and range of each detected regulated contaminant. Detected secondary standards 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 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.)

TTHMs (Total Trihalomethanes) are by-

products of drinking water chlorination. Some people who use water containing TTHMS in excess of the MCL over many years may experience liver, kidney, or central nervous system problems and may have an increased risk of cancer.

• HAAs (Haloacetic Acids) are by-products of drinking water disinfection. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Turbidity is a measure of the cloudiness

#### JANUARY – DECEMBER 2002 WATER QUALITY DATA REGULATED CONTAMINANTS WITH PRIMARY MCLs, establishe

DISTRIBUTION SYSTEM								
DISTRIBUTION STSTEM			PHG					
CONTAMINANT	MCL	DLR	MCLG* MRDLG**					
Total trihalomethanes (THMs), ug/L	80	0.5	NA	Highest runn	Highest running annual average 37		Range of individu ND – 7	
Haloacetic acids (HAAs), ug/L	60	1	NA		12		ND – 3	
						age of monthly positive samples		
Total coliform bacteria	5% of monthly samples are positive		0*	0%			F	
Chloramines Residual, mg/L as Chlorine	Maximum Residual Disinfectant Level (MRDL) = 4.0		4.0**	Running An	nual Average (RAA)	Rang	e of Monthly Avera	
WATER SUPPLY SOURCES	•	1	•			I		
CONTAMINANT	MCL		PHG MCLG*				PATTERSON PASS WATER TREATMENT PLANT	
Turbidity	TT = 5 NTU		NA	Highest Level Found = 0.14 NTU		Highest Level Found = 0.13 NTU		
			INA	10	100%		100%	
	TT = percentage of samples < 0.5 NTU		NA					
Inorganic Chemicals				Average	Range	Average	Range	
Arsenic (ug/L) Barium (ug/L)	50 1000	2 100	NA 2000*	ND ND	ND ND	ND ND	ND ND	
Chromium total (ug/L)	50	100	100*	ND	ND	ND	ND	
Fluoride (mg/L)	2	0.1	1	0.1	0.1	0.1	ND-0.1	
Nitrate (as NO3) (mg/L) Radionuclides	45	2	45	ND	ND-2	ND	ND-3	
Gross Alpha (pCi/L)	15	1	NA	ND	ND-2	ND	ND-2	
Gross Beta (pCi/L) Uranium (pCi/L), (a)	50 20	4	NA	ND ND	ND-4 ND	ND ND	ND ND	
	20	2	0.5		GULATED CONTAMINANTS WITH S			
Conductivity (umhos/cm)	1600		-	515	339–682	535	316-735	
Chloride (mg/L) Sulfate (mg/L)	500 500	0.5	-	88	64–152 15–43	105 30	65–154 14–41	
Total Dissolved Solids (mg/L)	1000	0.5	_	298	220–378	310	218-386	
-					S REQUIRING MONITORING, ESTAI			
Boron (ug/L)	AL=1000	100	NA	150	89–180	114	82–130	
Chromium 6 (ug/L) Vanadium (ug/L)	— AL=50	1	NA	ND ND	NA ND	ND ND	NA ND	
vanadium (ug/ L)	AL=50	3	NA			ERS — INCLUDED TO ASSIST O		
Corrosivity (Units)	(b)			12.5	12.1-12.9	12.4	12.1–12.1	
Alkalinity (as CACO3) (mg/L)	-		_	100	70–152	79	66–89	
Hardness total (as CaCO3) (mg/L)	-		-	122	79–166	103	78–123	
Calcium (mg/L) Magnesium (mg/L)	-		-	28 13	19–40 7.8–19	22 12	18–25 8.0–16	
Potassium (mg/L)	_		_	2.2	1.4–3.5	2.6	1.3–4.0	
Sodium (mg/L)	_			60	45–91	69	43–98	
pH (Units)	-		_	8.7	8.5-9.0	8.7	8.5-9.0	
Silica (mg/L)	-		-	11.9	9.86–14.3	12.5	10.6-14.0	
Total Organic Carbon (mg/L) Total Radon (pCi/L),		0.7 100		1.8 NA	1.2–2.6 NA	1.5 NA	1.0–2.3 NA	

(a) Data is from latest monitoring in 2000, (b) Zone 7 strives to supply non-aggressive water (Corrosivity > 12) by pH adjustment. Abbreviations/Units: MCL = Maximum Contaminant Level, DLR = Detection Limit for Purposes of Rep Turbidity Unit, ug/L = Micrograms per liter, mg/L = Milligrams per liter, pCi/L= Picocuries per liter, AL = Action level, ND = Monitored but not detected. ND or value in the range column indicates that more than one analysis performed of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

 Radon is a radioactive gas that you can't 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. Fix 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 your State radon program or EPA's Radon Hotline (800-SOS-RADON).

Currently there are no regulatory monitoring requirements for radon, but federal drinking waters standards of 4,000 pCi/L with a multimedia mitigation program was proposed in November

#### A — CONTAMINANTS DETECTED IN WATER SUPPLY ed by the State of California Department of Health Services

#### **EVERYDAY EQUIVALENTS:**

ial samples 5 ) ige Chloramines

One milligram per liter (mg/L) is equal to a single drop in a 55-gallon drum full of water.

One microgram per liter (ug/L) is one one-thousandth (1/1000) of a milligram. It's roughly equivalent to a single teaspoon in 1.3 million gallons of water (enough to fill 21/2 Olympic-size swimming pools), or 13 gallons in Del Valle Reservoir. Put another way, it's like a single inch in a distance of about 16,000 miles, or two-thirds of the earth's circumference.

	MOCHO WELLFIELD		STONERIDGE WELL		HOPYARD	HOPYARD WELLFIELD		HOPYARD 6 – ASR WELL Aquifer Storage Recovery (ASR)	
	Average	Range	Average	Range	Average	Range	Average	Range	
	0.13	0.05 – 0.39	0.08	0.05 - 0.09	0.40	0.12 – 1.0	0.38	0.15 – 1.0	
	Not ap	plicable	Not applicable		Not applicable		Not applicable		
	Average	Range	Average	Range	Average	Range	Average	Range	
	ND	ND-2	ND	ND	ND	ND	ND	ND	
	200	150-270	260	230-280	200	190-200	130	100-150	
	ND	ND	ND	ND-13	ND	ND	ND	ND	
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1-0.2	
	14	7–20	15	14–17	13	13	8	8	
	4	2–7	4	3–5	4	2–6	4	1–6	
	ND	ND-4	ND	ND	ND	ND-5	ND	ND	
	ND	ND-3	ND	ND	2	ND-4	ND	ND	
RNIA DEI	PARTMENT OF HEALTH SERVICES				1				
	895	579-1223	633	550-751	714	669–755	732	683-803	
	92	59–136	49	40-66	55	53–58	66	62–70	
	73	40-119	34	32–39	43	42-44	60	59-63	
	556	406-772	391	366-440	443	430-454	468	432-492	
HEALTH S	ERVICES				1	1			
	502	230–790	285	260-310	320	300-340	405	380-430	
	7	6–8	12	NA	8	7–8	5	NA	
	4	ND-8	6	4-8	4	4–5	4	4–5	
LTH OR E	CONOMIC DECISIONS, I.E. LOW S	ODIUM DIET, WATER SOFTENING, E	TC.						
	12.5	12.1–12.8	12.4	12.1-12.6	12.5	12.3–12.7	12.4	12.2–12.7	
	293	204–368	239	231-255	276	271–281	261	241-275	
	372	209–534	258	238-286	334	330-338	258	246-271	
	80	48–103	57	50-60	82	73–92	61	54–69	
	42	21–67	28	25-33	32	25–36	26	24–27	
	1.8	1.3–2.3	1.4	1.2–1.6	1.3	1.1–1.5	1.7	1.5–1.8	
	60	42-76	44	40-46	36	29–39	72	70–74	
	7.7	7.4–8.1	7.9	7.6-8.0	7.7	7.6–7.9	7.8	7.7-8.0	
	26.1	20.6-28.5	27.8	25.2-30.0	22.9	19.7–24.8	20.9	13.7-24.6	
	1.0	ND-1.8	ND	ND-0.8	ND	ND-1.4	1.0	0.8-1.5	
	234	180-270	290	270-340	245	230-260	292	248-310	

1999. Being proactive to water quality concerns, Zone 7 initiated radon monitoring in 1992.

## 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 PRI-MARY STANDARDS

• Arsenic Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.

• 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 manmade deposits.

• Uranium Erosion of natural deposits.

• Turbidity Soil runoff.

## NEW REGULATIONS

DHS UCMR (Unregulated Chemical Monitoring Regulation) became effective January 3, 2001. Zone 7's 2002 monitoring program complied with regulatory monitoring frequency and specified analytical methods. Detected chemicals are

# DHS AND EPA ASSESSMENT LIST 1 UCMR CHEMICALS

DLR, ug/L
100
1
4
3
0.5
3
3
2
0.005

#### EPA List 1 Chemicals

Chemical MRL, ug/L

2,4-dinitotoluene	2
2,6-dinitotoluene	2
Acetochlor	2
DCPA mono and di-acid degrade	1
4,4'-DDE	0.8
EPTC	1
Molinate	0.9
MTBE	5
Nitrobenzene	10
Terbacil	2
* Applies to EPA list also.	

# INFORMATION COLLECTION RULE (ICR) DISINFECTION BYPRODUCTS (DBPs)

## July 1997 – December 1998

	DEL VALLE WATER TREATMENT PLANT			PATTERSON PASS WATER TREATMENT PLANT		
DBP	Units	RANGE AVERAGE		RANGE AVERAGE		
Trihalomethanes (THM4)	ug/L	32–51	41	34–93 58		
Haloacetic acids (HAA5)	ug/L	14–40	24	22–50 30		
Haloactonitriles (HAN)	ug/L	3.0-7.5	5.5	4.5–11 7.7	7	
Haloketones (HK)	ug/L	0.5–2.7	1.7	ND-2.2 1.6	5	
Chloropicrin	ug/L	0.5–1.8	0.6	ND-1.0 0.6	5	
Chloral hydrate	ug/L	ND-2.4	1.3	ND-2.1 1.0	)	
Total Organic Halides (TOX)	ug/L	105–175	135	105–220 14	2	
Cyanogen chloride	ug/L	2.7-4.2	3.3	2.6-7.4 4.9	9	
Chlorate	ug/L	70–134	94	NA NA	A	
Disinfectant residual						
(total chlorine)	mg/L	1.87–2.80	2.22	1.96–2.70 2.3	35	

ug/L = Micrograms per liter

mg/L = Milligrams per liter

ND = Not detected

Trihalomethanes = Sum of chloroform, bromodichloromethane, dibromochloromethane, and bromoform.

Haloacetic acids = Sum of mono-, di-, and trichloroacetic acid, and mono- and dibromoacetic acid.

Haloacetonitriles = Sum of dichloro-, trichloro-, bromochloro-, and dibromoacetonitrile

Haloketones = Sum of 1,1-dichloropropanone and 1,1,1-trichloropropanone.

In July 1997 Zone 7 initiated an 18-month data collection effort to comply with EPA's Information Collection Rule (ICR). This data will be used for future regulations. Monitoring requirements under the ICR included those for Cryptosporidium, Giardia, viruses, disinfectants/disinfection by-products (D/DBPs), miscellaneous water quality parameters, and treatment plant operational data. DBP data from ICR monitoring is summarized above.

MRL=Minimum Reporting Level

NA = Not Applicable

included in the main data table.

EPA UCMR final supplement was completed on January 11, 2001. The data generated by this monitoring effort will be used to evaluate and prioritize contaminants on the Drinking Water Contaminant Candidate List, a list of contaminants EPA is considering for possible new drinking water standards. This data will help to ensure that future decisions

## 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

# PRIMARY STANDARDS

Contaminants Not Detected in Zone 7 Water Supply

#### ORGANIC CHEMICALS

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** 

#### INORGANIC CHEMICALS

Aluminum Mercury Antimony Nickel Asbestos Nitrite (as Beryllium Thallium Cadmium Selenium Cyanide

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) Nitrite (as nitrogen) 2,4,5-TP (Silvex) Thallium

RADIONUCLIDES\*\*

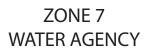
Combined Radium-226 and Radium-228 Tritium, Strontium-90

None of the primary contaminants listed above were detected at or above DLR in Zone 7 water supply during 2002 monitoring.

\* Zone 7 in-house monitoring

\*\* Latest monitoring conducted in 2002.





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Synthetic Organic Chemicals (SOCs)

## ZONE 7'S SOURCES OF SUPPLY

The primary source of Zone 7's 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 two water treatment plants, Del Valle and Patterson Pass. 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:

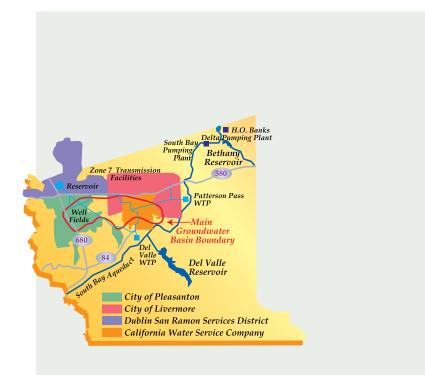
An assessment of the South Bay Aqueduct was completed in December 2002.

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.

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: The assessment for Mocho Wells was completed in July 2001 and Hopyard Well No. 9 in August 2000. The assessment for the remaining wells, Hopyard Well No. 6 and Stoneridge Well, was completed in March 2002. The 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 supply.

New Supply Sources: Following DHS approval, Mocho 3 and Mocho 4 wells were placed in service in March 2002.



DHS required quarterly organic chemicals monitoring was initiated in April, 2002 and last round of samples was collected in February, 2003. None of the regulated organic chemicals were detected at or above DHS DLR.

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.