



Zone 7 Water Agency

2012 Annual Consumer Confidence Report

Zone 7 Water Agency provides treated drinking water to four major water retailers, along with a small number of direct customers, serving approximately 220,000 people in Pleasanton, Livermore, Dublin and the Dougherty Valley area of San Ramon. We also provide untreated water to local agricultural users and provide flood protection to 425 square miles of eastern Alameda County. All water supplied during 2012 met the regulatory standards set by the state and federal governments (with the exception of a treatment technique violation for not meeting the disinfectant contact time requirement for 24 minutes at the Patterson Pass Water Treatment Plant; see details inside) and, in almost all cases, the quality was significantly better than required.



Source Water Assessment

Our drinking water sources include local and imported surface water as well as groundwater. Although most water requires some treatment before use, protecting our source water is an important part of providing safe water to the public.

Zone 7 completed Drinking Water Source Assessment and Protection (DWSAP) Program reports for all its sources by December 2002 as required by the California Department of Public Health (CDPH). Additionally in 2008, two more DWSAP Program reports were completed for Zone 7's newly constructed Chain of Lakes wells.

Most of the contaminants detected in Zone 7's surface water supply from the State Water Project (SWP) are introduced as the water is conveyed through the Delta and come from the Sacramento and San Joaquin watershed or the Delta itself. The latest sanitary survey for the Delta and the SWP was completed in June 2012. It identified key vulnerabilities and sources of contaminants such as wastewater-treatment plant discharges, urban runoff, recreational activities, and conversions of some agricultural Delta islands to wetlands. The sanitary survey includes an action plan to address these key vulnerabilities and sources of contaminants.

After leaving the Delta, water is transported to Zone 7 via the South Bay Aqueduct (SBA). SBA water quality may also be vulnerable to pollution from local cattle grazing, wildlife activities, and recreational activities in the watersheds of the Bethany and Del Valle reservoirs. Zone 7 has engaged in a number of activities to improve water supply reliability and water quality of the SBA. Zone 7 and two other SBA contractors obtained a state Proposition 13 grant in 2003 to develop a Watershed Management Program for the SBA system. The Watershed Protection Program Plan was completed in 2007, which developed public education materials and posted signs at Del Valle and Bethany reservoirs. Additionally, Zone 7 is working with the California Department of Water Resources to evaluate options for restricting cattle access to Bethany Reservoir. The SBA Improvement and Enlargement Project raised the height of the canal embankment and constructed new drainage over-crossing structures to reduce drainage into the canal.

Copies of any public outreach materials, DWSAP Program reports or sanitary surveys for SWP water are available by calling Gurpal Deol at 925-447-0533.

Commitment to Water Quality

Control strategies for seasonal taste-and-odor control caused by algal growth in SBA water include periodic copper sulfate application to source water by the Department of Water Resources and use of Powdered Activated Carbon at both conventional treatment plants. A more advanced and preferred taste-and-odor control method is conventional ozonation of raw water at all three surface-water treatment plants. The project schedule is pending per funding availability.

The Mocho Groundwater Demineralization Plant went into operation in late summer 2009 to reduce the buildup of salts and minerals in our groundwater basin and reduce the hardness of groundwater delivered primarily to the western side of Zone 7's service area. In 2012, approximately 4,377 acre-feet (more than 1.4 trillion gallons) of groundwater was demineralized and approximately 4,328 tons of salt was exported as brine out of the Valley.

Terms Used

MAXIMUM CONTAMINANT LEVEL (MCL)

The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals or Maximum Contaminant Level Goals as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL)

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG)

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

PUBLIC HEALTH GOAL (PHG)

The level of a primary 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 and MRDLs 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.

Treatment Technique Violation

Violation: Failed to meet the Disinfectant CT requirement ("Concentration of Disinfectant Times Contact Time") at Patterson Pass Water Treatment Plant (PPWTP) for 24 minutes, when the CT was below 1.0 (it went as low as 0.51).

Steps taken to correct violation: Operations responded quickly and maintained the disinfectant residual going to the system above 0.2 mg/L (the lowest level was 0.34 mg/L). The California Department of Public Health (CDPH) was notified within a day of the incident as required by state regulations. Failure to meet the CT requirement was caused by a power failure and the problem has been corrected by providing emergency generator power to associated disinfection equipment.

Health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as diarrhea, nausea, cramps, and associated headaches. No reports were received of any such occurrences.

What's in Your Water?

The table at the right shows the average level and range of each detected regulated contaminant. Detected secondary standards, and additional parameters are also listed.

The following components may be of particular interest to our customers:

TURBIDITY is a measure of the cloudiness of the water. We are required to monitor it because it is a good indicator of the effectiveness of the filtration system for surface-water treatment. Note that turbidity does not measure air bubbles, only particles.

TOC (Total Organic Carbon) has no health effects. However, TOC contributes to 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, including liver or kidney problems, nervous-system effects, and increased cancer risk. Regulatory TOC-removal requirements are applicable to conventional water-treatment plants only. Treatment operation is optimized for maximum TOC removal and Zone 7's THM and HAA levels are well below MCLs. Zone 7 TOC removal typically exceeds regulatory requirements.

NITRATE in drinking water at levels above 45 mg/L is a health risk for infants less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

Nitrate levels in Zone 7's surface water supplies are typically very low (less than 5 mg/L) as compared to groundwater, but both sources meet all standards.

HARDNESS is caused by naturally-occurring minerals such as calcium and magnesium. Hard water does not pose a health risk, and is not covered by state or federal drinking water regulations. Groundwater is typically harder than surface water, but it is just as safe.

SODIUM is an essential nutrient that is found naturally in drinking water. Zone 7 also adds sodium hypochlorite as part of its disinfection process and sodium hydroxide for corrosion control. Sodium is not regulated because sodium levels in drinking water are usually low and are not likely to cause adverse health effects—even for those watching their salt intake. However, Zone 7 monitors sodium levels because some consumers are concerned about their sodium levels and may be monitoring their diets.

JANUARY-DECEMBER 2012 WATER QUALITY DATA - CONTAMINANTS DETECTED IN WATER SUPPLY

REGULATED CONTAMINANTS WITH PRIMARY DRINKING WATER STANDARDS, established by the State of California Department of Public Health

DISTRIBUTION SYSTEM					
CONTAMINANT	MCL	DLR	PHG (MCLG) [MRDLG]		
Chloramines as Chlorine, mg/L	Maximum Residual Disinfectant Level (MRDL) = 4.0		{4}	Running Annual Average (RAA)	Range of Monthly Average Chloramines
				2.2	1.9 - 2.4
Total coliform bacteria	More than 5 % of monthly samples are positive		(0)	Highest percentage of monthly positive samples	
				1.5%	
Haloacetic acids (five) (HAAs), ug/L	60	1*	NA	Highest system-wide RAA for 1st 3 quarters	Range of all samples collected in 2012
Total trihalomethanes (TTHMs), ug/L	80	1*	NA	13	ND - 28
				21	ND - 64

Everyday Equivalents

One milligram per liter (mg/L) = a single penny in \$10,000
 One microgram per liter (ug/L) = a single penny in \$10,000,000

WATER SUPPLY SOURCES

CONTAMINANT			DEL VALLE WATER TREATMENT PLANT	PATTERSON PASS WATER TREATMENT PLANT	MOCHO WELLFIELD**	STONERIDGE WELL	HOPYARD WELLFIELD	CHAIN OF LAKES WELLFIELD							
Turbidity	TT = 1 NTU Maximum	NA	Highest Level Found = 0.22 NTU	Highest Level Found = 0.20 NTU	Not Applicable	Not Applicable	Not Applicable	Not Applicable							
	TT = 95% of samples ≤ 0.3 NTU	NA	% of samples ≤ 0.3 NTU = 100	% of samples ≤ 0.3 NTU = 100	Not Applicable	Not Applicable	Not Applicable	Not Applicable							
Total Organic Carbon (mg/L)	TT = Quarterly RAA Removal Ratio ≥ 1.0	NA	Lowest Quarterly RAA Ratio = 1.4	Lowest Quarterly RAA Ratio = 1.5	Not Applicable	Not Applicable	Not Applicable	Not Applicable							
Inorganic Chemicals			Average	Range	Average	Range	Average	Range	Average	Range	Average	Range			
Arsenic (ug/L)	10	2	0.004	ND	ND	ND	ND	ND	ND	ND - 2	ND	ND			
Barium (ug/L)	1000	100	2000	ND	ND	ND	ND	160	100 - 190	250	230 - 270	140	110 - 200	270	240 - 280
Chromium total (ug/L)	50	10	(100)	ND	ND	ND	ND	ND	ND	ND - 11	ND	ND	ND	ND	ND - 10
Selenium (ug/L)	50	5	30	ND	ND	ND	ND	ND	ND - 9	ND	ND	7	6 - 8	ND	ND
Fluoride (mg/L)	2	0.1	1	0.1	0.1	0.1	0.1	0.1	ND - 0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nitrate (as NO3) (mg/L)	45	2	45	ND	ND-5	2	ND-5	17	11 - 21	21	20 - 23	16	16 - 17	18	16 - 20

REGULATED CONTAMINANTS WITH SECONDARY DRINKING WATER STANDARDS, established by the State of California Department of Public Health

Odor (TON - Threshold Odor Number)	3	1	--	1	0 - 1	0	0 - 1	0	0	0	NA	0	0	0	0
Conductivity (µS/cm)	1600		--	538	351 - 665	545	362 - 711	1145	936 - 1555	723	669 - 777	948	808 - 1029	756	665 - 807
Chloride (mg/L)	500		--	99	50 - 133	106	61 - 162	130	97 - 191	61	53 - 68	83	63 - 94	69	57 - 81
Sulfate (mg/L)	500	0.5	--	35	14 - 62	34	14 - 60	86	61 - 150	37	35 - 39	71	46 - 85	42	38 - 46
Total Dissolved Solids (mg/L)	1000		--	300	191 - 381	302	192 - 400	713	575 - 960	442	416 - 468	590	467 - 660	444	385 - 502
Turbidity (NTU)	5	(0.05)	--	NA	NA	NA	NA	ND	ND - 0.09	ND	ND	ND	ND - 0.05	0.08	ND - 0.14

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

Alkalinity as calcium carbonate (mg/L)	--		--	80	53 - 134	73	55 - 90	348	282 - 435	243	233 - 253	322	276 - 347	243	218 - 267
Boron (µg/L)	--	100	--	160	ND - 270	140	ND - 260	880	600 - 1440	380	320 - 430	470	340 - 540	310	240 - 340
Total Hardness as calcium carbonate (mg/L)	--		--	108	69 - 150	101	67 - 135	461	386 - 592	290	271 - 308	387	350 - 408	330	287 - 364
Calcium (mg/L)	--		--	22	14 - 34	20	13 - 30	95	71 - 117	54	53 - 55	81	70 - 93	60	54 - 69
Magnesium (mg/L)	--		--	13	9 - 16	12	8 - 16	54	40 - 73	38	34 - 41	65	39 - 82	44	37 - 52
Potassium (mg/L)	--		--	2	1 - 3	3	2 - 4	2	2 - 3	2	2	2	2	1	1 - 2
Sodium (mg/L)	--		--	66	40 - 84	68	43 - 94	79	54 - 127	45	40 - 50	61	37 - 80	32	29 - 36
pH (Units)	--		--	8.4	7.9 - 8.8	8.4	8.1 - 8.9	7.7	7.4 - 7.9	7.7	7.7	7.7	7.5 - 7.8	7.6	7.5 - 7.7
Silica (mg/L)	--		--	10	7 - 13	11	9 - 13	25	17 - 28	25	23 - 27	23	20 - 25	23	20 - 24

* = HAAs each component DLR is 1 ug/L except Monochloroacetic acid that has DLR of 2 ug/L. TTHMs each component DLR is 1 ug/L. ** = Part of Mochowellfield groundwater gets treated by MGDP (Mochowellfield Groundwater Demineralization Plant) before going into the distribution system. Abbreviations/Units: MCL = Maximum Contaminant Level, DLR = Detection Limit for Purposes of Reporting (CDPH established), MRL = Minimum Reporting Level, PHG = Public Health Goal, MCLG = Maximum Contaminant Level Goal, MRDLG = Maximum Residual Disinfectant Level Goal, NA = Not Applicable. TT = Treatment Technique, NTU = Nephelometric Turbidity Unit, µg/L = Micrograms per liter, mg/L = Milligrams per liter, µS/cm = Microsiemens per centimeter, ND = Monitored for but not detected at or above DLR OR MRL. ND or value in range column indicates that more than one analysis was performed during the year.

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 it 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 wastewater-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, which 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, the U.S. Environmental Protection Agency and the state Department of Public Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. More information is available on the EPA's website, www.epa.gov/safewater/.

MAJOR SOURCES OF DETECTED CONTAMINANTS

Major sources of regulated contaminants detected in Zone 7 water supply are listed below:

TURBIDITY Soil runoff.

TOTAL ORGANIC CARBON Various natural and man-made sources.

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

BARIUM Erosion of natural deposits; discharge of drilling wastes; and discharge from metal refineries.

CHROMIUM Erosion of natural deposits; discharge from steel and pulp mills and chrome plating.

SELENIUM Erosion of natural deposits; discharge from petroleum, glass, and metal refineries; discharge from mines and chemical manufacturers; and runoff from livestock lots (feed additive).

FLUORIDE Erosion of natural deposits and discharge from fertilizer and aluminum factories.

NITRATE Erosion of natural deposits; runoff from fertilizer use; and leaching from septic tanks and sewage.

Contaminants Not Detected in Zone 7's Water Supply

None of the primary standards listed below were detected at or above Detection Limits for Purposes of Reporting (DLR) during 2012 monitoring.

PRIMARY STANDARDS			
Organic Chemicals			
Volatile Organic Chemicals (VOCs)		Synthetic Organic Chemicals (SOCs)*	
Benzene	Monochlorobenzene	Alachlor	Heptachlor
Carbon Tetrachloride	Styrene	Atrazine	Heptachlor Epoxide
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane	Bentazon	Hexachlorobenzene
1,4-Dichlorobenzene	Tetrachloroethylene	Benzo(a)pyrene	Hexachlorocyclopentadiene
1,1-Dichloroethane	Toluene	Carbofuran	Lindane
1,2-Dichloroethane	1,2,4-Trichlorobenzene	Chlordane	Methoxychlor
1,1-Dichloroethylene	1,1,1-Trichloroethane	2,4-D	Molinate
cis-1,2-Dichloroethylene	1,1,2-Trichloroethane	Dalapon	Oxamyl
trans-1,2-Dichloroethylene	Trichloroethylene	Dibromochloropropane (DBCP)	Pentachlorophenol
Dichloromethane	Trichlorofluoromethane	Di(2-ethylhexyl)adipate	Picloram
1,2-Dichloropropane	1,1,2-Trichloro-1,2,2-Trifluoroethane	Di(2-ethylhexyl)phthalate	Polychlorinated Biphenyls
1,3-Dichloropropene	Vinyl Chloride	Dinoseb	Simazine
Ethylbenzene	Xylenes	Diquat	Thiobencarb
Methyl-tert-butyl ether (MTBE)		Endothall	Toxaphene
		Endrin	2,3,7,8-TCDD (Dioxin)
		Ethylene Dibromide (EDB)	2,4,5-TP (Silvex)
		Glyphosate	
Inorganic Chemicals		Radionuclides**	
Aluminum	Cyanide	Radium-226, Radium-228, Uranium	Beta/photon emitters
Antimony	Mercury	Gross Alpha particle activity	Tritium, Strontium-90
Asbestos	Nickel		
Beryllium	Nitrite (as nitrogen)		
Cadmium	Perchlorate		
	Thallium		

* Latest monitoring on SOCs except DBCP & EDB was conducted in 2011.

** Based upon low vulnerability, CDPH granted reduced monitoring for radionuclides for current supply sources on January 25, 2008. Only gross alpha particle activity monitoring is required once every nine years. Latest gross alpha monitoring conducted in 2008.

Lead and Copper Rule

This rule is applicable to Zone 7's direct customers only. Per the CDPH-approval Compliance Monitoring is conducted once every three years. Data from June 14, 2012 monitoring is summarized below:

Contaminant	No. of Samples Collected	90th Percentile Level Detected	Number of Sites Exceeding AL	Action Level (AL)	PHG
Lead (ug/L)	13	ND	None	15	0.2
Copper (ug/L)	13	160	None	1300	300

ND = Not detected at or above 5 ug/L

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Zone 7 Water Agency is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

About Water Treatment

State Water Project water conveyed through the Delta, and then through the South Bay Aqueduct (SBA), makes up the bulk of our surface-water supplies. Zone 7 has three facilities for the treatment of surface water: the Patterson Pass Conventional, the Patterson Pass Ultrafiltration, and the Del Valle water treatment plants. Because of the Del Valle plant's physical location, its water supply source can be from the SBA, Del Valle Reservoir, or a blend of the two. The Patterson Pass plants receive water only from the SBA.

Zone 7 applies a multi-barrier approach to treat and remove pollutants from surface water, and the water is then disinfected using chloramination to minimize microbial risks. Groundwater is simply chloraminated to maintain a consistent residual disinfectant throughout the distribution system.

Our Primary Water Sources:

Imported Surface Water

More than three-quarters of our water supply originates as Sierra Nevada snowmelt and is conveyed by the State Water Project via the Delta and the South Bay Aqueduct*.

Local Surface Water

This is comprised of local rain runoff stored in Del Valle Reservoir.

Local Groundwater

This supply is pumped by Zone 7 from the aquifer that underlies the Livermore-Amador Valley; water in the aquifer comes from local rainfall and from the State Water Project.

* In wet years, we store surplus State Water Project supplies in local and offsite groundwater basins for use when needed, and for reliability during droughts.

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. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency's (USEPA'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. USEPA/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).



Zone 7 Water Agency

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*Este Informe Contiene Información Muy Importante Sobre Su Agua Potable. Tradúzcalo O Hable Con Alguien Que Lo Entienda Bien.
(This Report Contains Important Information About Your Drinking Water.
Translate it, or speak with someone who understands it.)*