

Yuima Municipal Water District

2011 Consumer Confidence Report

Annual Report on Water Quality for 2011

Dated: April 1, 2012

We test the quality of your drinking water for many constituents as required by State and Federal regulations. This report shows the results of our monitoring for the period of January 1 – December 31, 2011.

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

Since 1990, all water utilities in the State of California have been required to distribute to all customers an annual Consumer Confidence Report that provides information regarding the quality of water they served. In 1996, Congress amended the Safe Drinking Water Act and added a similar requirement for a brief annual water quality report.

This report, the *2011 Consumer Confidence Report* (CCR) is more specific and detailed in content. The California Department of Public Health (CDPH), in order to implement state and national policy, oversees the issuance of this report. Yuima is a community water system providing the public water supply that serves much of the community of Pauma Valley. The following report provides information to Yuima's customers regarding test results available through December 31, 2011.

To receive more information about your water, to ask questions, or to receive additional copies of this report, please call Yuima's General Manager, Linden A. Burzell at (760) 742-3704. Written questions should be addressed to the General Manager at P.O. Box 177, Pauma Valley, CA 92061.

Board of Directors Meetings

Regular meetings of the Board of Directors are held monthly on the fourth Monday at 2:00 pm at the District office at 34928 Valley Center Road, Pauma Valley. Each monthly agenda has a scheduled time for public comments and is available on the District website.

Board of Directors

W.D. "Bill" Knutson, President
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Jeffrey G. Scott, General Counsel

This report explains:

- ◆ ***Where your water comes from***
- ◆ ***How water quality is evaluated***
- ◆ ***Regulations that protect your health***
- ◆ ***How your drinking water measures up against State and Federal drinking water standards for safety, appearance, taste and odor, and***
- ◆ ***Where to go if you have questions***

Where your water comes from: Yuima relies on two main sources: local groundwater and imported surface water. The water quality issues that affect groundwater and imported surface water are somewhat different.

The ***local groundwater*** is pumped from deep underground wells located throughout Pauma Valley. This underground aquifer is known as the Pauma Groundwater Basin. Yuima injects sodium hypochlorite (chlorine) to disinfect its well water to remove bacteria found naturally in the environment.

The District is not required to do any further treatment, other agencies that use surface water must provide additional treatment. Surface water by definition is water from lakes and streams usually impounded in open reservoirs where the water is subject to the pollutants in the watershed of its origin.

The ***imported water*** is purchased by Yuima from the San Diego County Water Authority, which in turn purchases the majority of its imported water from Metropolitan Water District of Southern California (Metropolitan). Metropolitan imports water into Southern California from two sources: a 242 mile long aqueduct that brings water from the Colorado River's Lake Havasu, and a 444 mile-long aqueduct that carries water from the Sacramento-San Joaquin River Delta. Water from these sources travels to the Metropolitan system through pressurized large diameter pipes, open aqueduct canals and open reservoirs. The supply is then treated at the Robert F. Skinner Filtration Plant located in western Riverside County.

These imported surface water sources are potentially vulnerable to contamination. Metropolitan has determined that the Colorado River supplies are most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater.

State Project water supplies are considered most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of Metropolitan's assessment of these vulnerabilities can be obtained by contacting Metropolitan by phone at (213) 217-6850.

How Water Quality is Evaluated: Water quality is evaluated by performing periodic laboratory analyses on water samples to determine the physical characteristics of the water and the presence or absence of chemical and biological contaminants. 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, which can be naturally occurring or result from urban storm water 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 storm water runoff, and residential uses.
- ◆ *Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, agricultural operations, urban storm water runoff and septic systems.
- ◆ *Radioactive contaminants*, which can be naturally occurring or present as a result of contamination from mining and/or other activities.

Additional Information on Drinking Water

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of trace amounts of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the 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 those undergoing chemotherapy, organ transplant recipients, and those with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk. These people should seek advice about drinking water from their health care providers.

The 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).

ABBREVIATIONS USED IN THIS REPORT

- ◆ **PDWS = "Primary Drinking Water Standards"** The highest level of a contaminant that is allowed in drinking water. Primary MCL's are set as close to the PHG's (or MCLG's) as is economically and technologically feasible. Secondary MCL's are set to protect the odor, taste, and appearance of drinking water.
- ◆ **SDWS = "Secondary Drinking Water Standards"** Limits established by regulation that set the maximum amount of specific contaminants that affect the taste, odor, or appearance of the drinking water.
- ◆ **PHG = "Public Health Goal"** 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.
- ◆ **MCLG = "Maximum Contaminant Level Goal"** 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.
- ◆ **MCL = "Maximum Contaminant Level"** 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.
- ◆ **MRDL = "Maximum Residual Disinfectant Level"** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- ◆ **MRDLG = "Maximum Residual Disinfectant Level Goal"** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLG's are set by the U.S. Environmental Protection Agency.
- ◆ **RAL = "Regulatory Action Level"** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- ◆ **N/A** = not applicable.
- ◆ **NC** = not collected.
- ◆ **ND** = not detectable at testing limit.
- ◆ **NTU** = Nephelometric Turbidity Units, a measure of the suspended material in water.
- ◆ **ppb** = parts per billion.
- ◆ **µg/l** = micrograms per liter.
- ◆ **ppm** = parts per million or milligrams per liter.
- ◆ **pCi/l** = picocuries per liter (a measure of radiation).
- ◆ **CFU/100 ml** = colony forming units per 100 milliliters.
- ◆ **µmho/cm** = micromhos per centimeter; a measure of electrical conductivity.
- ◆ **TT = "Treatment Technique"** A required process intended to reduce the level of a contaminant in drinking water.

Additional Notes

Nitrate: Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of 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 seek advice from your health care provider. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity.

The sources of drinking water (both tap water 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.

In order to ensure that tap water is safe to drink, USEPA and the California Department of Public Health ("CDPH") have issued regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. A *Source Water Assessment* was conducted for Yuima Municipal Water District system in 2010.

Perchlorate, at high levels, has been shown to interfere with thyroid function by reducing iodine uptake by the thyroid gland, thereby reducing the production of thyroid hormones and leading to adverse affects associated with hyper-thyroidism, particularly in the developing fetus, infants and young children. The affects of perchlorate on thyroid function are dose-dependent and reversible.

Perchlorate has been detected at low levels in certain District wells, most likely as a result of heavy applications of fertilizers over a period of many years by commercial agriculture on overlying lands. Though present at levels well below those associated with adverse health effects in humans, the perchlorate concentration is further reduced by blending with perchlorate-free water from other sources before delivery to any of the District's customers.

Lead: 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. Yuima Municipal Water District 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>.

The District's CDPH-approved nitrate/perchlorate treatment plan is based on blending water from high nitrate/perchlorate wells with low nitrate/perchlorate water from two sources: (1) the District's river wells and (2) imported water purchased from the San Diego County Water Authority. The blending process takes place at several District tank locations. On October 20, 2011, the Tank 1 pump station was shut down for repairs for a period of approximately eight hours, and during that time, no blend water was delivered to Tank 8, while high nitrate/perchlorate water continued to be produced. CDPH issued a Notice of Violation on November 30, 2011 ("Failure to Provide Nitrate Treatment"). However, as stated in CDPH's Notice, Tank 8 is large (1.7 million gallons) and at the time of this incident was at least 30% full. The unblended water delivered to the District's customers from Tank 8 therefore theoretically remained below the MCLs for both nitrate and perchlorate during the entire eight hour period in question and all field tests have shown values below the MCL.

Discussion of Vulnerability – Although no contaminants other than nitrates and perchlorates have been detected in the local water supply, the system is still considered vulnerable to activities carried out near the drinking water sources. The most significant identified sources of possible contamination are fertilizer and pesticide use on the citrus and avocado groves in the area surrounding District wells. All drinking water sources in Yuima Municipal Water District are secured from vandalism by locked entrance gates and fencing with barbed wire.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (testing done in June 2011)		No. of samples collected	90th percentile level detected	No. sites exceeding AL	AL	PHG	Typical Source of Contaminant
Lead (ppb)	Yuima	5	1	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
	IDA	5	6				
Copper (ppm)	Yuima	5	0.24	0	1.3	0.17	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
	IDA	5	0.56				

Note: Any violation of an MCL or AL is marked with an asterisk.

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Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Testing Date Range	Combined Sources Yuima/IDA	Imported Colorado State Project	Major Sources in Drinking Water
Percent State Project Water	%	NA	NA	NA	Range Average		0 0	0-100 70.6	
PRIMARY STANDARDS--Mandatory Health-Related Standards									
MICROBIOLOGICAL									
Total Coliform					Range	2011	ND	ND-0.1	
Bacteria	%	5.0	(o)	NA	Average		ND	ND	Naturally present in the environment
ORGANIC CHEMICALS									
Pesticides/PCBs									
Dibromochloropropane (DBCP)	ppt	200	1.7	10	Range Average	2011	ND-1 0.02	ND ND	Banned nematocide that may still be present in soils
Semi-Volatile Organic Compounds- none to report									
Volatile Organic Compounds - none to report									
INORGANIC CHEMICALS									
Aluminum	ppb	1000	600	50	Range Average	2011	ND-2100 80.6	ND - 240 105	Residue from water treatment process; natural deposits erosion
Arsenic	ppb	10	0.004	2	Range Average	2011	ND-2.4 0.1	ND-2.3 0.5	Natural deposits erosion, glass and electronics production wastes
Barium	ppb	1000	2000	100	Range Average	2011	1.2-160 69.2	ND ND	Oil and metal refineries discharges; natural deposits erosion
Chromium	ppb	50	(100)	10	Range Average	2011	ND-2.44 0.1	ND ND	Discharge from steel and pulp mills; natural deposits erosion
Copper	ppm	AL = 1.3	0.3	0.05	Range Average	2011	ND-11 3.31	ND ND	Internal corrosion of household pipes; natural deposits erosion
Fluoride	ppm	2.0	1	0.1	Range Average	2011	0.15-0.53 0.24	0.2-1.0 0.8	Water additive for dental health
Lead	ppb	AL = 15	0.2	5	Range Average	2011	ND-2.5 0.15	ND ND	House pipes internal corrosion; erosion of natural deposits
Nitrate (as N) MWD	ppm	10	10	0.4	Range Average	2011	ND-18 6.8	ND-0.7 0.23	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
Nitrate (as NO3) Yuima	ppm	45	45	20	Range Average	2011	ND-91 39.1	NA NA	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
Perchlorate	ppb	6	6	4	Range Average	2011	ND-7.4 2.19	ND ND	Industrial waste discharge
Selenium	ppb	50	30	5	Range Average	2011	ND-15 5.4	ND ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
RADIOLOGICALS									
Gross Alpha Particle Activity	pCi/L	15	(0)	3	Range Average	2011	0.067-5.05 2.16	ND-3 0.6	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50	(0)	4	Range Average	2011	ND-2.44 2.44	ND ND	Decay of natural and man-made deposits
Radium-226	pCi/L	NA	0.05	1	Range Average	2011	ND-0.87 0.17	ND ND	Erosion of natural deposits
Radium-228	pCi/L	NA	0.019	1	Range Average	2011	ND-0.303 0.03	ND ND	Erosion of natural deposits
Uranium	pCi/L	20	0.43	1	Range Average	2011	ND-2.4 0.73	ND-2 1.4	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUAL, AND DISINFECTION BY-PRODUCTS PRECURSORS									
Total Trihalomethanes (TTHM)	ppb	80	NA	1	Range Average	2011	10-57 21.2	9.3-68 34.8	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	ppb	60	NA	1	Range Average	2011	1.9-9 6.6	1.0-33 11.8	By-product of drinking water chlorination
DBP Precursors Control TOC	ppm	TT	NA	0.30	Range Average	2011	NA NA	TT TT	Various natural and man-made sources
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	Range Average	2011	ND NA	1.3-2.8 2.3	Drinking water disinfectant added for treatment
Bromate	ppb	10	0.1	5.0	Range Average	2011	NA NA	ND-12 5.2	By-product of drinking water ozonation
VOLATILE ORGANIC CONTAMINENTS									
Trichlorofluoromethane (Freon-11)	ppb	150	700	5	Range Average	2011	ND-51 9.6	ND ND	Discharge from industrial factories, degreasing solvent; propellant and refrigerant
SECONDARY STANDARDS--Aesthetic Standards									
Aluminum	ppb	200	600	50	Range Average	2011	ND-2100 80.6	ND-240 105	Residue from water treatment process; natural deposits erosion
Chloride	ppm	500	NA	NA	Range Average	2011	18-130 80.7	27-83 62	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	NA	Range Average	2011	ND-7.5 0.58	1-2 1	Naturally occurring organic materials

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Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Testing Date Range	Combined Sources Yuima/IDA	Imported Colorado State Project	Major Sources in Drinking Water
Copper	ppm	1.0	0.3	0.05	Range Average	2011	ND-11 3.31	ND ND	Internal corrosion of household pipes; natural deposits erosion; wood preservatives leaching
Iron	ppb	300	NA	100	Range Average	2011	ND-3.6 0.27	ND ND	Leaching from natural deposits; industrial wastes
Manganese	ppb	50	NL = 500	20	Range Average	2011	ND-54 2.47	ND ND	Leaching from natural deposits
Odor Threshold	TON	3	NA	1	Range Average	2011	ND-70 3.22	2-24 3.6	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	NA	NA	Range Average	2011	500-1200 793.2	230-960 550	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	Range Average	2011	73-280 137.7	22-170 101.6	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1000	NA	NA	Range Average	2011	320-870 543.8	150-490 348	Runoff/leaching from natural deposits; seawater influence
Turbidity	NTU	5	NA	NA	Range Average	2011	ND-34 2.37	0.02-0.25 0.05	Soil runoff
Zinc	ppm	5.0	NA	0.05	Range Average	2011	ND-540 51.7	ND ND	Runoff/leaching from natural deposits; industrial wastes
OTHER PARAMETERS									
CHEMICAL									
Hardness	ppm	NA	NA	NA	Range Average	2011	82-520 295.1	48-270 139	
Sodium	ppm	NA	NA	NA	Range Average	2011	41-90 55.5	28-77 58.2	
TOC	ppm	TT	NA	0.30	Range Average	2011	NA NA	1.4-3.0 2.18	Various natural and man-made sources
N-Nitrosodimenthylamine (NDMA)	ppb	NL= 0.01	0.003	0.002	Range	2011	NA	ND-6 ND-8	By-product of drinking water chloramination; industrial processes

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