



City of Rio Vista

Water Quality Report for Calendar Year 2009

Prepared July 2010

This is the annual report on the quality of water delivered to you by the City of Rio Vista during calendar year 2009. The City of Rio Vista vigilantly safeguards its water supplies and distribution system. We are proud to report that this year, as in years past, your water met all State and Federal drinking water health standards.

This report provides a snapshot of the quality of the water that we provided this year. Included are details about where your water comes from, what it contains, and how it compares to State and Federal standards. For more information about your water, you may call Greg Malcolm, City of Rio Vista Public Works Superintendent at (707) 374-6451.

Your water comes from nine wells located at various locations within the city, designated by location as Well 7, Well 8, Well 9, Well 10, Well 11, Well 12, Well 13, Well 14 and 15. During the past year 804,832,000 gallons of water were pumped from these wells for residential, commercial and industrial uses.

The water distribution system includes over 18 miles of pipe and two reservoir tanks, each with a capacity of two million gallons.

Well water is cleaner than surface (river and lake) water. This is because the rains and irrigation fall on the land and percolate through the soil and porous rock until it collects in an aquifer. This may take weeks, months or years, depending on the geologic conditions and frequency of rainfall. So by the time it's pumped from an aquifer, nature has done an excellent job of cleaning it up.

However, as water travels over the surface of the land and through the ground, it dissolves naturally occurring minerals and, in some cases, 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, which 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.

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, urban storm water runoff, and septic systems.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Radioactive contaminants, which can be naturally occurring or the result of oil production and mining activities

Because of these possible contaminants, we must monitor, prevent and / or treat for these contaminants so that the water delivered to your tap is absolutely safe. In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the California Department of Health Services prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. These regulations require extensive sampling and testing. All samples for testing are taken at the wells

except the samples for microbiological contaminants, lead and copper which are taken at individual residences.

The following is a report of the chemical and physical characteristics of the water supplied by the City of Rio Vista. This report is required each year by the California Department of Health Services and the United States Environmental Protection Agency for all water systems.

The table below lists all the drinking water contaminants that we detected during the 2009 calendar year. The data presented in this table is from testing done from January 1 through December 31, 2009.

Definitions and Legend:

MCL (maximum contaminant level): The highest level of contaminant allowed in drinking water. Primary MCL's 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.

AL (action level): The regulatory level at which a water system must provide additional treatment.

MCLG (maximum contaminant level goal): The level of contaminant in drinking water below which there is no known or expected risk to health. Set by the U.S. Environmental Protection Agency.

PHG (public health goal): The level of contaminant in drinking water below which there is no known or expected risk to health. Set by the California Environmental Protection Agency.

PDWS (primary drinking water standard): MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

NA (not applicable or no standard determined).

ND (not detected at measurable amounts).

ppm (parts per million) = mg / liter (milligrams per liter).

ppb: (parts per billion) = ug / liter (micrograms per liter).

pCi / L: (picocurie / liter).

Each year the Rio Vista water system is tested for over 100 contaminants. Except for microbiological and organic contaminants, only the detected contaminants are listed in this report.

Microbiological					
Contaminants	Highest No. of Detections	No. of Months in Violation	MCL	MCLG	Typical Sources of Contaminant
Total Coliform Bacteria	0	0	See Note 1	0	Naturally present in the environment
Fecal Coliform (E.coli)	0	0	See Note 1	0	Naturally present in the environment

Note 1: No more than 1 positive sample per month.

Organic					
Contaminants	Highest No. of Detections	No. of Months in Violation	MCL	MCLG	Typical Sources of Contaminant
ND	0	0	0	0	NA

Inorganic						
Detected Contaminants	Units	MCL	PHG (MCLG)	Result		Typical Sources of Contaminant
				Average	Range	
Hardness	ppm	NA See Note 2	NA	68	29 - 107	Naturally occurring in ground water and surface water
Arsenic (As)	ppb	10 See Note 3	NA	9.1	5 - 19	Erosion of natural deposits, runoff from orchards, glass and electronics production wastes
Nitrate (NO3)	ppm	45 See Note 4	45	6.9	ND - 12	Runoff and leaching from fertilizer use, leaching from septic tanks and sewage, erosion of natural deposits
Benzene	ppb	1 See Note 5	0.15	ND	ND	Leaching from gas storage and land fill
Gross Alpha	pCi / L	15 See Note 6	15	1.6	1-2	Erosion of natural deposits
Total Radium 228	pCi / L	5 See Note 7	NA	0.04	ND - 0.3	Erosion of natural deposits

Note 2: A hardness of 60 is considered slightly hard and a hardness of 120 is considered moderately hard. There is no convincing evidence that water hardness causes adverse health effects. It is primarily a nuisance problem resulting in difficulty in cleaning and laundering tasks, and decreased efficiency of water heaters.

Note 3: When arsenic levels exceed the MCL of 10 parts per billion from a well, water from that well is blended with water from wells with an arsenic levels low enough to reduce the overall level below 10. A two million gallon reservoir tank is used for blending. The following table illustrates the variation of test results from each well and indicates the data necessary to properly blend water from multiple sources to assure the delivered level is less than 10.

ARSENIC LEVELS AT EACH WELL		
WELL	MINIMUM	MAXIMUM
7	6	10
8	7	10
9	7	9
10	17	19
11	5	7
12	6	8
13	6	10
14	7	12
15	7	9

Arsenic levels vary at each well from minimum to maximum values depending upon many factors including pumping rate and conditions within the aquifer. Many tests are run to assure accurate data when blending water from different wells to assure the overall level is below 10.

(10 parts per billion is about equal to 45 drops in a 60,000 gallon swimming pool.)

Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Note 4: Nitrate in drinking water at level above the MCL 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 the MCL 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.

Note 5: Benzene in drinking water at a level above the MCL may result in health problems for infants, children and adults.

Note 6: Gross Alpha in drinking water at a level above the MCL may result in an increased risk of cancer.

Note 7: Radium in drinking water at a level above the MCL may result in an increased risk of cancer.

Detection of Federal Disinfectant/Disinfectant By-products						
Detected Contaminants	Unit	MCL	PHG (MCLG)	Result		Typical Sources of Contaminant
				Average	Range	
Total Trihalomethanes	ppb	80	NA	8.8	ND - 11.9	By-product of drinking water disinfection

Note 8: Some people who use water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.



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