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2001/2002 Annual Water Quality Report

The events of September 11, 2001 have demonstrated the critical need for a heightened awareness of the security of our nation's water supply. Forces now in place would indeed cause us to imagine threats that we never would have dreamed of prior to that day. As a result, water companies are reassessing their vulnerability to acts of terrorism.

Yet experts say any threat to public water supplies remains largely remote. In fact, experts on germ warfare say, to cause widespread health problems by contaminating a public water supply verges on the impossible. Poisoning the voluminous rivers and reservoirs supplying water to consumers would require truckloads of chemicals or biological agents that would be difficult to produce and relatively easy to spot.

Even if terrorists crashed a Boeing 767 loaded with anthrax into a reservoir, the lethal agent might well be destroyed in any resulting fire or fail to diffuse effectively. Perhaps most importantly, many water agencies could simply close off a contaminated reservoir and draw water from another source.

Apple Valley Ranchos Water Company (AVRWC), while very safety conscious, has implemented several additional activities to improve the safety of its facilities and distribution system. We are piloting new technologies for continuous monitoring of water quality. Increased lighting and motion detectors have been installed at reservoirs and well sites. We are partnering with neighbors and other utilities to further heighten awareness of suspicious activities around our facilities. Our staff is being trained in the area of security to learn how they can better protect the water supplies.

The United States Environmental Protection Agency (EPA), the Federal Bureau of Investigation (FBI), and the American Water Works Association (AWWA) are all working together with water and wastewater facilities to help them assess vulnerability and to develop ways to make their facilities more secure.

At present, federal law requires utilities to publish reports on how they would tackle their worst emergencies. However, utility companies are pushing to be allowed to keep many details of their security plans confidential. That information may be important for fire departments and the police, but could also be abused by anyone interested in causing trouble.

We are looking at things differently now. In light of what we thought could never happen, we are on full alert.

For more information on these topics, log on to these helpful web sites:
www.epa.gov/org,
www.dhs.cahwnet.gov/ps/ddwem/,
www.whitehouse.gov/homeland/,
www.odci.gov/
www.fbi.gov/congress/congress01/rondick101001.htm

Apple Valley Ranchos Water Company (www.avrwater.com) continues to strive to act responsibly as stewards of the water we supply to our customers. Read on to learn more about your tap water.

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APPLE VALLEY RANCHOS WATER COMPANY

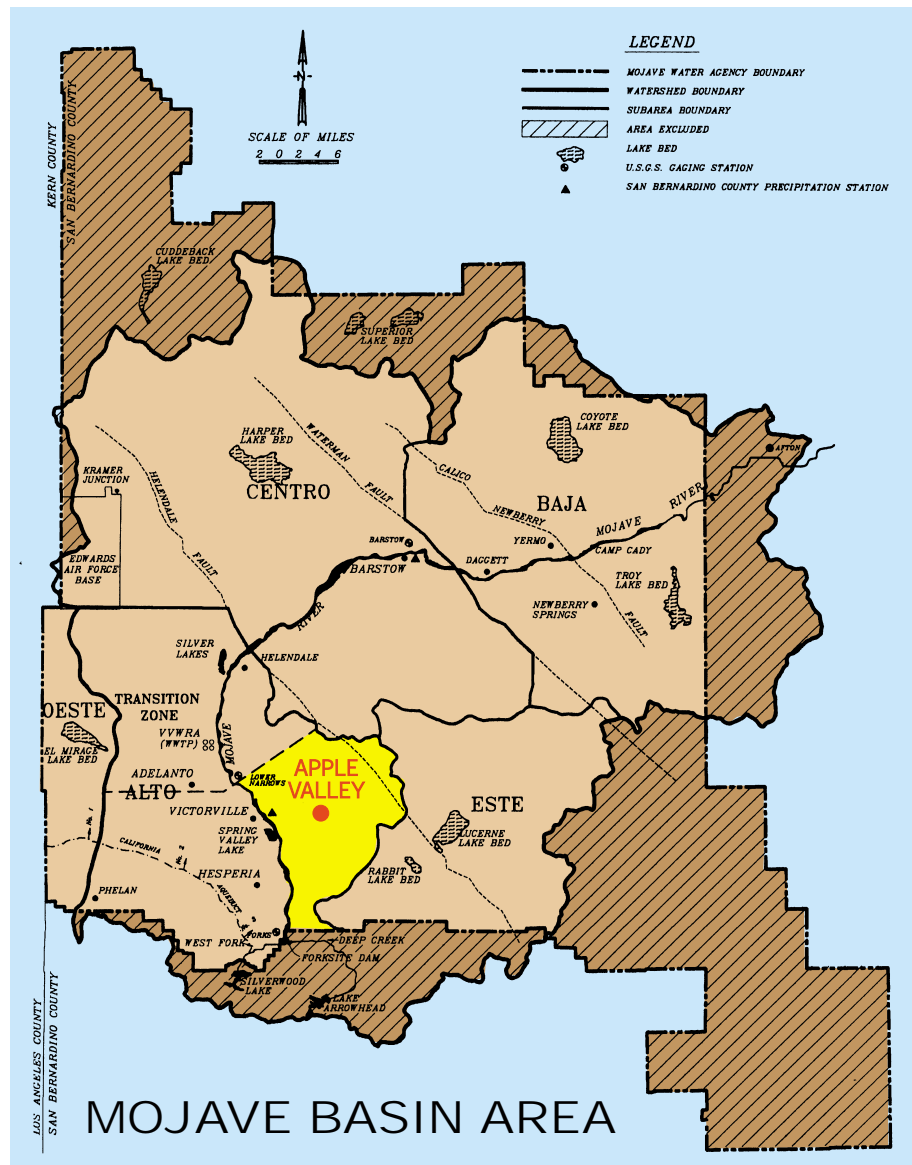
ANNUAL WATER QUALITY REPORT 2001/2002

Where Does Your Water Come From ?

Apple Valley Ranchos Water Company (AVRWC) pumps 100% of our source water from 22 deep wells located throughout the community. These wells draw water from the deep Alto subunit of the Mojave ground water basin. This high quality aquifer is recharged from snowmelt from the San Bernardino Mountains to the south and the Mojave River to the west. Also, the Mojave Water Agency imports water from the California State Water Project to spread in the Mojave River to help recharge the ground water.

Some of the water we pump has been age-dated close to 10,000 years old by the United States Geologic Survey. That means it has been protected and naturally filtered for a long time. To assure the ground water's quality, AVRWC will be performing a "Source Water Assessment" this year to identify potentially contaminating sources. This effort will be completed before the end of 2002 and will help our community better protect the aquifer from contaminating activities into the future. This report will then be made available to the public for review upon request.

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 EPA Safe Drinking Water Hotline at 1-800-426-4791 or by visiting their website at www.epa.gov/OGWDW.



Capital Improvements

One of the most important aspects of operating a public water system is reinvestment in infrastructure. Apple Valley Ranchos Water Company has a history of reinvesting back into the company. Pipeline and facility replacements is a critical necessity to assuring continued superior service.

Maintaining a strong infrastructure benefits everyone in the community. In addition, neighboring water utilities rely on Ranchos as an emergency source of water supply.

Apple Valley Ranchos Water Company System Improvements • 1992-2001 •

Water Main and Fire Hydrant Improvement	Length of Water Main Installed (feet)	Number of New Fire Hydrants	Water Supply Improvements	Total Dollars Reinvested
\$11,785,942	320,274 (61 miles)	219	\$2,285,599	\$14,071,541



Crews follow best management practices by flushing dead-end water mains to keep water clean and fresh while at the same time confirming fire flow capabilities.



Some of the new fire hydrants and water mains prior to installation.

Automated Information Service

Misplaced your bill and need to know the amount and due date? Want to check if your payment has been received, or what your account balance is? Don't have time to wait on hold to talk to the next available representative? Access your account 24-hours a day, 7 days a week using AVRWC's automated information service. Simply have your 10 digit account number handy and dial 247-3162 or 800-481-9190, and choose from the available options to find the answers to these and other questions. And don't worry if you get lost. You can press zero during regular business hours to talk to one of our friendly customer service representatives.

AVRWC on The World Wide Web

This report along with other useful consumer and resource information can be obtained from the Internet. Find us at www.avrwater.com. And as usual, your comments are welcomed.

Emerging Water Quality Issues

Arsenic

On September 12, 2001 the National Academy of Sciences (NAS) released a report on the health effects of arsenic in drinking water that had been requested by President Bush. This report stated that arsenic in drinking water has a greater health impact than had previously been understood by the EPA. Based on this information and other reports, the EPA announced on October 31, 2001 that the new drinking water standard for arsenic will be reduced from 50 parts per billion (ppb) to 10 ppb. The new standard takes effect on January 22, 2006. In addition, California will be setting its own standard by June of 2004.

Apple Valley Ranchos Water Company (AVRWC) does not have any wells that exceed the new standard of 10 ppb. In fact, it seems that groundwater on the east side of the Mojave River is the lowest in arsenic in the region. The range of arsenic in AVRWC wells is < 2 ppb to 7 ppb with an average of 2.1 ppb. After release of the NAS report, AVRWC decided to take a proactive approach to arsenic levels in our sources of water. AVRWC began by reducing the pumping as much as possible from those wells with the highest arsenic levels in them. Additionally, in 2002, Ranchos is investigating ways to further reduce arsenic levels. One fairly inexpensive way is to redesign some of the wells with higher arsenic levels by closing off those parts of the aquifer with arsenic in them. AVRWC believes this can be done for several wells.

AVRWC also needs to drill a new well to continue to supply a sufficient amount of water for its customers. AVRWC will endeavor to drill the new well in a part of the aquifer that can produce a large volume of low arsenic water. If enough water can be obtained in this new well, AVRWC will also be able to continue to reduce pumping in those wells with higher arsenic over greater periods of time.

Another possibility is to build treatment plants to remove arsenic. While no AVRWC wells exceed the new arsenic standard, we are moving forward to pilot new removal technologies. These new evolving treatment technologies promise to reduce the cost of arsenic removal by as much as 75% over traditional technologies. If AVRWC can demonstrate through a small pilot study that these new technologies can effectively remove the low levels of arsenic in AVRWC water, we may ask our customers to consider this treatment to further reduce arsenic levels in AVRWC water.

AVRWC wants to assure our customers that we are considering all the possibilities to reduce arsenic in our drinking water. Because we have detected arsenic at or above one-half of the new drinking water standard in four of our twenty-two wells, both EPA and the California Department of Health Services require that we publish the health effects information below:

While your drinking water meets the current standard for arsenic, it does contain low levels of arsenic. The standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The California Department of Health Services continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Radon

Radon is a colorless, odorless gas that is present virtually everywhere on Earth. Radon is a naturally occurring element formed by the natural decay of uranium in the ground. As a gas, radon can seep into the home through cracks and holes in the foundation, becoming the largest source of indoor radon. Radon gas can also be released from drinking water while showering, washing clothes and during other household activities.

A radon regulation from EPA has been delayed several times and the most recent estimate is to have a standard by the end of 2002. This long awaited regulation will be unique to any other drinking water regulation in that it will require a strong indoor air program to be run by the State of California. This makes sense because the National Academy of Sciences (NAS) has determined that 98% of the health threat from radon occurs in air while no more than 2% comes from water.

Radon levels in AVRWC wells range from 220 to 1,920 pCi/L (picoCuries per liter of water) with an average of 465 pCi/L. The NAS estimates that this level equates to approximately 0.0465 picoCuries/L in indoor air, which is about 1/100th of the recommended indoor air standard and is about 1/10th of the average outdoor level in the United States.

The EPA recommends that all homeowners test their homes for radon and take mitigation measures if indoor air exceeds 4 pCi/L. To obtain information on radon and how it may affect your home or business, call the State of California Department of Health Services Radon information line at 1-800-745-7236 or EPA's Radon Hotline at 1-800-SOS-RADON.

What Kinds of Contaminants Might be Found in Drinking Water ?

In order to ensure that tap water is safe to drink, EPA and the California Department of Health Services (CDHS) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The federal Food and Drug Administration (FDA) and CDHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas productions and mining activities.

This report describes those contaminants that have been detected in the analysis of 145 different potential

contaminants, 100 of which are regulated by EPA and the CDHS. **AVRWC is proud to tell you that there have been no contaminants detected that exceed any federal or state drinking water standards. All primary (health related) and secondary (aesthetic) drinking water standards are being met.**

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. 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 at 1-800-426-4791.

This report is intended to provide information for all water users. If received by an absentee landlord, a business, or a school, please share the information with tenants, employees or students. We will be happy to make additional copies of this report available. Complete records of water quality analyses are open for inspection by the public upon request.

You may also access this report on the Apple Valley Ranchos web page at www.avrwater.com.

**If you would like more information about water quality, please call:
Marc Mullen at (760) 247-6484.**

Water Results

Apple Valley Ranchos Water Co. -- 2001 / 2002 Annual Water Quality Report

Water Quality Parameters Detected in Apple Valley Ranchos Sources (Wells)

PRIMARY STANDARDS --Mandatory (health-related)	State MCL	Public Health Goals (MCLG)	Units of Measurement	AVR Range (including highest value)	Average for AVR Wells (a)	(b) AVR Date of Last Measurement	Potential Sources of Contamination
INORGANIC CHEMICALS							
Arsenic	50	none	ppb	< 2 - 7	2.2	99/2000/01	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Chromium	100	(100)	ppb	2 - 11	6	2000/2001	Erosion of natural deposits. Discharge from steel and pulp mills and chrome plating operations
Copper	AL = 1.3 #	0.17	ppm	< 0.05 - 0.159	0.051	2001	Internal corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives
Fluoride	2.0	1.0	ppm	0.2 - 1.1	0.7	99/2000/01	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth (not added by AVR)
Nitrate (as NO3)	45	45	ppm	< 2 - 14	5.1	2001	Erosion of natural deposits; runoff and leaching from fertilizer use; leaching from septic tanks and sewers
Total Nitrite/Nitrate (as N)	10	10	ppm	< 0.4 - 3.2	1.2	2001	Erosion of natural deposits; runoff and leaching from fertilizer use; leaching from septic tanks and sewers

RADIONUCLIDES							
Gross Alpha	15	none	pCi/L	< 1 - 11	3.0	98/99/2000/01	Erosion of natural deposits
Radium 226/228	5	none	pCi/L	NA* or 0 - 1.8	NA*	98/99/2000/01	Erosion of natural deposits
Uranium	20	0.5	pCi/L	NA* or <2 - 7	NA*	98/99/2000/01	Erosion of natural deposits

SECONDARY STANDARDS --Aesthetic standards (non health-related)	State MCL	Public Health Goals (MCLG)	Units of Measurement	AVR Range (including highest value)	Average for AVR Wells (a)	(b) AVR Date of Last Measurement	Potential Sources of Contamination
CHEMICAL PARAMETERS							
Chloride	500	none	ppm	3 - 331	48	99/2000/01	Runoff/leaching from natural deposits; seawater influence
Corrosivity (Langlier Index) (c)	Noncorrosive (+)	none	pos/neg	(-0.5) - (+ 0.5)	+ 0.11	99/2000/01	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Foaming Agents	500	none	ppb	< 100 - 160	ND	99/2000/01	Municipal and industrial discharges
Specific Conductance	1,600	none	micromhos/centimeter	150 - 1580	494	99/2000/01	Substances that form ions when in water; seawater influence
Sulfate	500	none	ppm	6 - 258	95	99/2000/01	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	1,000	none	ppm	92 - 970	317	99/2000/01	Runoff/leaching from natural deposits

PHYSICAL PARAMETERS							
Color	15	none	units	<3	ND	99/2000/01	Naturally occurring organic materials
Odor threshold	3	none	units	<1 - 1	0.7	99/2000/01	Naturally occurring organic materials
Turbidity (well water)	5	none	NTU	< 0.2 - 0.4	ND	99/2000/01	Soil runoff

Definitions

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 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 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.

Regulatory Action Level (AL):
The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

Primary Drinking Water Standard:
MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Water Quality Parameters Measured in the Distribution System							
DISTRIBUTION SYSTEM	State MCL	Public Health Goals (MCLG)	Units of Measurement	AVR Range (including highest value)	Average for AVR Wells (a)	(b) AVR Date of Last Measurement	Potential Souces of Contamination
Chlorine residual	NS	none	ppm	0 - 1.08	0.28	weekly	Added for disinfection purposes
Color	15	none	units	< 1 - 8	0.21	monthly	Naturally occurring organic materials
Microbiological Coliform bacteria (d)(e)	5.0% positive	(0)	present/absent	0%	0%	weekly	Naturally present in the environment
Fecal coliform/E. coli (d)(e)	2 consecutive	(0)	present/absent	0	0	weekly	Human and animal fecal waste
Heterotrophic Bacteria	none	none	CFU	< 1 - 5700	13	weekly	Naturally present in the environment
Odor-threshold	3	none	units	< 1	< 1	monthly	Naturally occurring organic materials
Turbidity	5	none	NTU	0.06 - 1.11	0.11	monthly	Soil runoff
Total Trihalomethanes (TTHM's) (d)(f)	100	none	ppb	< 0.5 - 1.4	1.4	quarterly	By-product of drinking water disinfection

Detected Unregulated Chemicals That May be of Interest to Consumers**

ADDITIONAL PARAMETERS --unregulated	State MCL	Public Health Goals (MCLG)	Units of Measurement	AVR Range (including highest value)	Average for AVR Wells (a)	(b) AVR Date of Last Measurement
Aggressiveness Index (g)	NS	none	units	10.8 - 12.4	11.8	99/2000/01
Alkalinity (as Ca CO3)	NS	none	ppm	47 - 100	78	99/2000/01
Boron	NS	AL = 1	ppm	< 0.1 - 0.9	0.32	99/2000/01
Calcium	NS	none	ppm	10 - 116	35	99/2000/01
Hardness (Ca CO3)	NS	none	ppm	31 - 409	119	99/2000/01
Hardness (Grains)	NS	none	grains	1.8 - 23.9	7	99/2000/01
Hexavalent chromium (Chromium-6)	NS	none	ppb	< 1 - 8.6	3.9	2000/2001
Magnesium	NS	none	ppm	1 - 29	7	99/2000/01
pH	NS	none	units	7.3 - 8.7	8.0	99/2000/01
Potassium	NS	none	ppm	< 1 - 4.6	1.9	99/2000/01
Radon	NS	none	pCi/L	220 - 1920	465	97/98
Sodium	NS	none	ppm	12 - 157	56	99/2000/01

KEY TO ABBREVIATIONS AND FOOTNOTES

AL = Action Level
CFU = Colony Forming Units
MCL = Maximum Contaminant Level, a drinking water standard
NA = Not Applicable at this time or not required to analyze
ND = Not Detected
NS = No Standard
NTU = Nephelometric Turbidity Units. This is a measure of the suspended material in water

= Action level measured at the consumer's tap, a primary standard. Compliance determined at the 90th percentile value. The value shown as the "average" for copper is the 90th percentile value for 30 samples. No samples exceeded the AL.

< = less than (essentially equivalent to ND)

* = Monitoring for Radium 226/228 and Uranium only required if Alpha samples exceed 5 pCi/L.

** = Unregulated contaminant monitoring helps USEPA and the California Dept. of Health Services to determine where certain contaminants occur and whether the contaminants need to be regulated.

(a) = The average is weighted according to the individual contribution in pumping by each well to the total (active wells only).

(b) = The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants in groundwater sources do not change frequently. Some of our data, though representative, are more than one year old.

(c) = A positive number Langlier Index indicates that the water is noncorrosive.

(d) = Primary drinking water standard. The other standards for distribution system are secondary standards.

(e) = Total Coliform MCL's: No more than 5.0% of monthly samples may be total coliform-positive. This MCL was not violated in 2001. Fecal Coliform/E. coli MCLs: The occurrence of 2 consecutive total coliform-positive samples, one of which contains fecal coliform/E. coli, constitutes an acute MCL violation. This MCL was not violated in 2001.

(f) = Monitoring is performed quarterly. Value shown in "Average" column is the highest quarterly value for 2001.

(g) = An aggressiveness index of 11 or greater indicates that the water is not aggressive (noncorrosive).