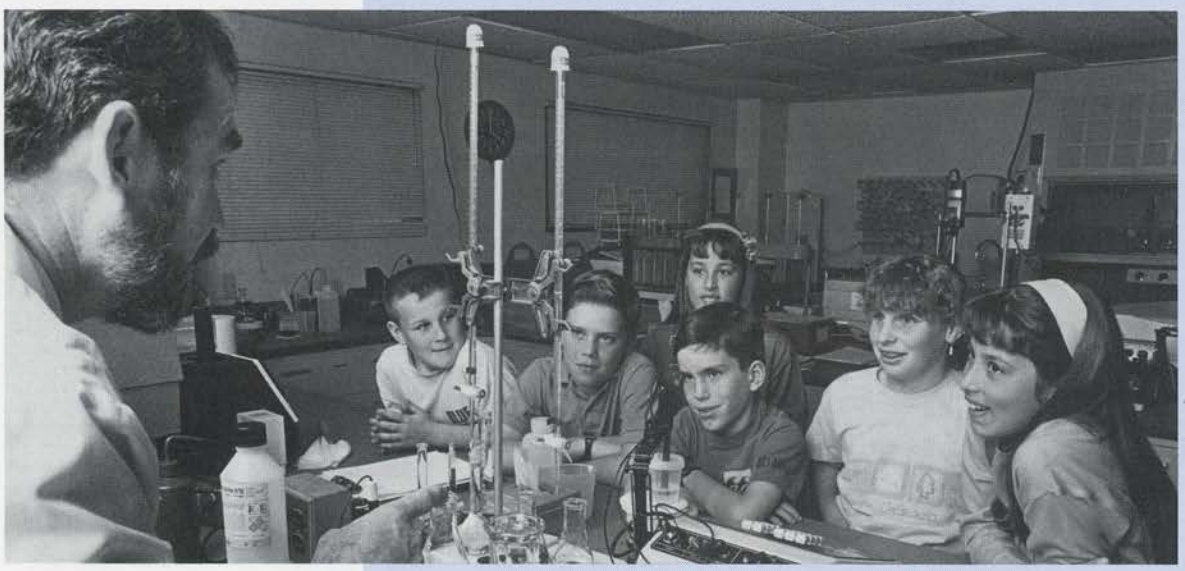
Irvine Ranch Water District
Annual Water Quality Report

Published April 1992

Volume III



IRWD's Analytical Chemist Bob Ross demonstrates a laboratory procedure to Irvine students Chad Johannessen, Dennis Wilson, Amber Posey, Robert Ross, Holly Johannessen and Amanda Posey.

The bottom line - Is the water safe to drink?

ABSOLUTELY!

The drinking water served by IRWD is safe and is well within State and Federal standards. The highly trained chemists, microbiologists and water treatment specialists at certified water quality labs stand behind this claim. They conduct or supervise more than 250,000 analyses of water samples each year, probing for and monitoring approximately 175 compounds in our water supplies.

Water

"Water." A simple word to describe what is undoubtedly the earth's most precious resource. But water isn't really that simple. Certainly, it is not as simple as just turning on the tap. Getting it to your tap and ensuring its quality is a complex process. At Irvine Ranch Water District (IRWD) we are committed to providing our customers with a safe supply of high quality drinking water.

This Annual Water Quality Report has been prepared by IRWD to inform customers about specific characteristics of our water supply. Legislation requires water districts to update and distribute water quality reports on an annual basis. The data contained in this report reflects our water quality during the 1991 calendar year.

We have designed this report to be as informative as possible. The chart in the brochure shows the results of our water analyses along with a brief explanation of how to interpret the units of measurement. As you go through the list, you will note that our water supply is of better quality than required by State and Federal standards.

Increasing nationwide concern about the environment has extended to questions about the safety of the water we drink. By reading this brochure, you can learn more about your water supply and the important steps we take to maintain its quality.

Where does your water come from?

To meet the water needs of our community in semi-arid Southern California IRWD depends on several sources of water.

The Colorado River Aqueduct brings water 250 miles across deserts and over mountain ranges to its terminal reservoir, Lake Mathews, near Riverside.

The State Water Project carries water 450 miles from the Delta of the Sacramento and San Joaquin Rivers to its terminal reservoir, Lake Silverwood, in the San Bernardino mountains.

To guarantee the water is safe to drink, water from these reservoirs is treated at the Diemer Filtration Plant. This state-of-the-art facility, located in Yorba Linda, is operated by the Metropolitan Water District of Southern California. Treated water travels into our community through large transmission mains.

To alleviate total dependency on imported water, IRWD has developed a local well field located in the nearby Orange County groundwater basin. This water supplements imported water supplies to meet our community's needs.

Water Quality Standards

The quality and safety of drinking water in the U.S. is regulated by the federal government through the Environmental Protection Agency (EPA). In California, the EPA standards are enforced by the California Department of Health Services (DHS).

The water quality chart shows primary and secondary standards, other constituents of drinking water, and results of our water analyses. Unless otherwise noted these results are shown in milligrams per liter (mg/L), which is equivalent to parts per million.

All water naturally contains a variety of dissolved mineral and organic substances. Drinking water standards establish limits (maximum contaminant levels) for substances that may affect health or aesthetic qualities of water. There are two types of standards:

Primary Standards

relate to the protection of public health. These standards specify limits for substances in water that may be harmful to humans if consumed in excess for long periods of time.

Secondary Standards

relate to aesthetic qualities of water such as taste, odor or clarity. These standards specify limits for substances that may influence consumer acceptance of the water.

1991 Water Quality Report

Primary Standard - Mandatory Health-Related Standards Established by the State of California, Department of Health Services

Parameter (Units)	Maximum Contaminant Level	Imported Water* Diemer		Groundwater**	
		Range	Average	Range	Average
Clarity (TU)					
Turbidity	0.5 (1)	0.08-0.12	0.10	N/A	N/A
Organic Chemicals (mg/L)					
Atrazine	0.003	ND	ND	ND	ND
Bentazon	0.018	ND	ND	ND	ND
Benzene	0.001	ND	ND	ND	ND
Carbon Tetrachloride	0.0005	ND	ND	ND	ND
Carbofuran	0.018	ND	ND	ND	ND
Chlordane	0.0001	ND	ND	ND	ND
2, 4-D	0.1	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	0.0002	ND	ND	ND	ND
1,4-Dichlorobenzene	0.005	ND	ND	ND	ND
1,1-Dichloroethane	0.005	ND	ND	ND	ND
1,2-Dichloroethane	0.0005	ND	ND	ND	ND
cis-1, 2-Dichoroethylene	0.006	ND	ND	ND	ND
trans-1, 2-Dichoroethylene	0.01	ND	ND	ND	ND
1, 1-Dichloroethylene	0.006	ND	ND	ND	ND
1, 2-Dichloropropane	0.005	ND	ND	ND	ND
1, 3-Dichloropropene	0.0005	ND	ND	ND	ND
Di (2-ethylhexyl)phthalate	0.004	NA	NA	ND	ND
Endrin	0.0002	ND	ND	ND	ND
Ethylbenzene	0.680	ND	ND	ND	ND
Ethylene Dibromide	0.00002	ND	ND	ND	ND
Glyphosphate	0.7	ND	ND	ND	ND
Heptachlor	0.00001	ND	ND	ND	ND
Heptachlor Epoxide	0.00001	ND	ND	ND	ND
Lindane	0.004	ND	ND	ND	ND
Methoxychlor	0.1	ND	ND	ND	ND
Molinate	0.02	ND	ND	ND	ND
Monochlorobenzene	0.030	ND	ND	ND	ND
Simazine	0.01	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.001	ND	ND	ND	ND
Tetrachloroethylene	0.005	ND	ND	ND	ND
Thiobencarb	0.07(0.001)#	ND	ND	ND	ND
Total Trihalomethanes	0.10	0.025-0.063	0.044	ND	ND
Toxaphene	0.005	ND	ND	ND	ND
2,4,5-TP (Silvex)	0.01	ND	ND	ND	ND
1,1,1-Trichloroethane	0.200	ND	ND	ND	ND
1,1,2-Trichloroethane	0.032	ND	ND	ND	ND
Trichloroethylene	0.005	ND	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.15	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.2	ND	ND	ND	ND
Vinyl Chloride	0.0005	ND	ND	ND	ND
Xylenes	1.750	ND	ND	ND	ND
Inorganic Chemicals (mg/L)					
Aluminum	1	0.090-0.328	0.205	ND	ND
Arsenic	0.05	0.002-0.003	0.002	ND	ND
Barium	1	0.158-0.163	0.160	ND	0.023
Cadmium	0.010	ND	ND	ND	ND
Chromium	0.05	ND	ND	ND-0.047	ND
Fluoride	1.4-2.4 (2)	0.19-0.30	0.25	0.42-0.74	0.55
Lead	0.05 (6)	ND	ND	ND	ND
Mercury	0.002	ND	ND	ND	ND
Nitrate (as NO_3)	45	0.71-2.79	1.11	ND-0.4	0.2
Selenium	0.01	0.002	0.002	ND	ND
Silver	0.05	ND	ND	ND	ND
Radioactivity (pCi/L)					
Gross Alpha	15 (4)	0.3-2.5	1.4	ND-2.7	0.8
Gross Beta	50	0.6-6.4	3.9	NA	NA
Ra 226 & Ra 228 Combined	5	ND	ND	NA	NA
Tritium	20000	ND	ND	NA	NA
Strontium-90	8	ND	ND	NA	NA
Uranium	20	ND-6	2	NA	NA

		Distribution System	
		Range	Average
Total Trihalomethanes	0.10	0.012-0.090	0.040
Microbiological			
Coliform State (CFU/100 ml)	1 (5)	0	0
Coliform Federal	5.0% (5)	0	0
Fecal Coliforms Federal	(5)	0	0

Water Quality Terms

Clarity/Turbidity

Cloudiness or turbidity in water is caused by tiny particles such as clay, silt, or other suspended matter. Clarity is regulated because minute particles can shield bacteria otherwise killed by disinfection.

Organic Chemicals

Natural organic compounds include fibers, animal fats and oils, vegetable oils, starch, and sugars. Synthetic organic compounds and materials come from chemical processes. These include pesticides, herbicides, lubricants, automotive fuel additives, and detergents.

Inorganic Chemicals

Though naturally occurring, the effects of inorganics range from beneficial to dangerously toxic. Among those with adverse health effects are nitrates and lead.

Microbiological Screening

Microscopic living matter, both plant and animal, can affect water quality. Detection of coliform bacteria may indicate the presence of disease causing bacteria. Other microorganisms, such as algae, can produce undesirable tastes and odors.

Radioactivity

Radioactivity in water originates from both natural sources and human activities. In most low risk areas, potential exposure to radiation in water is a fraction of background exposure from all other natural sources.

The drinking water served by IRWD is safe and is well within State and Federal standards.

Secondary Standards - Aesthetic Standards Established by the State of California, Department of Health Services

Parameter (Units)	Maximum Contaminant Level	Imported Water * Diemer		Groundwater**	
		Range	Average	Range	Average
(Unit is mg/L except as specified)		Distribution System			
		Range		Average	
Turbidity (TU)	5	ND-1.4		0.2	
Color (CU)	15	ND-10		ND	
Odor Threshold (TON)	3	ND-4		ND	
Chloride	250 (RL)	82-113	89	10.0-33	14.3
Color (CU)	15	2-4	3	3-42	13
Copper	1.0 (6)	ND-0.059	0.021	ND	ND
Foaming Agents–MBAS	0.5	ND	ND	ND	ND
Iron	0.3	ND	ND	ND	ND
Manganese	0.05 (RL)	ND	ND	ND-0.059	0.008
Specific Conductance (micromhos/cm)	900 (RL)	928-1042	991	304-384	348
Sulfate	250 (RL)	163-273	234	22-47	36
Total Dissolved Solids	500 (RL)	535-657	607	196-266	227
Zinc	5.0	ND	ND	ND	ND

Additional Constituents Analyzed

(Unit is mg/L except as specified)

Calcium	NS	52-76	69	5.3-26	14.0
pH (units)	NS	7.92-8.09	7.97	8.1-9.0	8.6
Hardness as $CaCO_3$	NS	231-313	288	15-89	46
Magnesium	NS	24.5-30	28	0.3-5.8	2.6
Potassium	NS	4.3-4.6	4.4	0.8-1.7	1.2
Sodium	NS	89-99	94	45-82	63

Abbreviations:

*	Metropolitan Water District of So. California
**	Orange County groundwater basin
CFU	Colony Forming Unit
CU	Color Unit
MCL	Maximum Contaminant Level
mg/L	Milligram per Liter
NA	Not Analyzed
N/A	Not Applicable
#	Secondary Standard
NC	Not Collected
ND	Not Detected
NR	Not Required
NS	No Existing MCL (No Standard)
pCi/L	Pico Curies per Liter
RL	Recommended Level
TON	Threshold Odor Number
TU	Turbidity Unit
MBAS	Methylene Blue Active Substances

(1) MCL for treated surface water
(2) Fluoride standard depends on temperature
(3) Proposed MCL
(4) Gross alpha may be substituted for Ra 226 & Ra 228, MCL = 5pCi/L for this case
(5) State MCLs: Coliforms shall not exceed 1 CFU/100 mL as the arithmetic mean of all monthly samples and also shall not exceed 4 CFU/100 mL in more than 5% of all monthly samples. Federal MCLs: No more than 5.0% of the monthly samples may be total coliform-positive; the occurrence of 2 consecutive total coliform-positive samples, one of which contains fecal coliform/E. coli, constitutes an acute MCL violation. Standards and results are based on distribution system sampling.
(6) The Federal MCL for lead has been replaced with a treatment technique requiring agencies to optimze corrosion control treatment. There is a similar treatment technique for copper in addition to the secondary MCL. The State Department of Health Services has yet to adopt the Federal regulations.

Distribution System = Local water facilities

Note: Since 1984, MWD has used chloramine (a combination of chlorine and ammonia) to disinfect water supply. Use of chloramine assures that the water is bacteriologically safe and also assures that trihalomethane levels remain substantially below the Federal standard of 0.10 milligram per liter. IRWD uses chlorine to disinfect local groundwater.

In addition to the above constituents, we have conducted monitoring for 51 additional organic chemicals for which the DHS and EPA have not yet set a standard. All results were below detection levels unless otherwise noted.

For additional water quality data contact Carl Spangenberg of Irvine Ranch Water District at (714) 476-7617.

For imported water information contact Edward Means, Director of Water Quality at Metropolitan Water District of Southern California at (213) 250-6850.

If you have more questions...

We hope this pamphlet has increased your understanding and confidence in the quality of your water supply and in our ongoing efforts to maintain that quality.

As you have probably gathered by now, the treatment and protection of drinking water is much more complicated than one would think.

If you would like to know more about this topic, please call or write to us.

Community Relations
(714) 476-7504

About IRWD

Formed in 1961, the Irvine Ranch Water District is in its 31st year of service. The District is located in south-central Orange County and serves the City of Irvine and portions of Tustin, Orange, Portola Hills, Santa Ana, Costa Mesa, Laguna Beach and Newport Beach. Approximately 125,000 people receive their water from IRWD.

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New Sampling Program for Lead and Copper

Eliminating public exposure to lead and copper in drinking water is the goal of the United States Environmental Protection Agency (EPA). In response to a new ruling by the EPA, the Irvine Ranch Water District is beginning the first phase of a program to collect samples from a selected group of residences in our service area.

We are required by law to test the water in local residences to determine that the water at the tap meets acceptable levels. Water can absorb lead or copper as it stands in and travels through home plumbing systems.

This program is not intended to alarm our customers. This national testing program is required of all water agencies across the country. Sampling will be done at residences nation-wide during 1992.

We are soliciting the cooperation of 200 local residents to participate in this program. In compliance with the EPA requirement these residents will be selected from a group of homes which were constructed between January 1, 1983 and December 31, 1986.

The sampling procedure is very simple. Program participants will be trained to properly collect water samples and will be provided with correct sampling materials and supplies. All testing of the samples will be conducted by a State Certified Water Quality Laboratory.

Residents requiring additional information can contact Carl Spangenberg at (714) 476-7617.

A Word About Home Filters and Bottled Water

Commercial businesses frequently canvas the Orange County area by telephone or door-to-door visits in an attempt to sell home systems that filter or treat tap water. These systems range in price from several hundreds of dollars for simple filters to thousands of dollars for more elaborate units.

Most bottled water companies and manufacturers of home filter devices make no health claims about their product. Legally, the bottled water and filter vendors can only claim to improve taste, color, or odor. If you choose an alternative to tap water, compare the data with this brochure and see for yourself what you're getting.

The decision to use bottled water should be based on taste or other aesthetic considerations, not on fear or health concerns. Bottled water and tap water must meet exactly the same State and Federal standards.

The source of bottled water is the key to quality, just as it is for tap water. In fact, many water bottlers get their water from municipal water supplies and just filter it.

One gallon of tap water costs less than one-tenth of a penny delivered to your home. One-gallon jug of bottled water now costs a thousand times as much. Tap water from IRWD is a quality water that is safe to drink and low in cost.

The Good News is...

The drinking water served by Irvine Ranch Water District is of better quality than required by State and Federal standards...

Drink To Your Health!

IRVINE RANCH WATER DISTRICT

Irvine Ranch Water District
P.O. Box 6025
Irvine, CA 92716-6025

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