

# 2005 Annual Consumer Confidence



## Report

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**Fluoride occurs naturally** at levels exceeding the State MCL of 2 milligrams-per-liter (mg/L) in most KID groundwater sources. Even though these sources mix with groundwater from other, lower fluoride sources before being delivered to residences, it is not always possible to dilute the fluoride below the MCL, especially in the rainy season when tunnel water provides most of the supply. On November 19, 1993, CDOHS issued KID a variance from the State's fluoride drinking water standard. The variance is CDOHS permission to exceed an MCL or not comply with a treatment technique under certain conditions. The variance allows KID to exceed 2 mg/L but not exceed 3 mg/L in the distribution system. In addition, this variance requires KID to notify its customers whenever the fluoride level exceeds 2 mg/L which is a USEPA secondary MCL. This letter notification includes an explanation of the variance and mandatory dental fluorosis language approved by CDOHS. In 2005, six notifications were sent.

**Groundwater is protected from many infectious organisms**, such as the parasite *Cryptosporidium*, by the natural filtration action of water percolating through soils. There is no indication that *Cryptosporidium* has breached this natural soil filter and entered the KID water supply. However, 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).

**Radon is a radioactive gas** that you can't see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your State radon program or call EPA's Radon Hotline (800-SOS-RADON.) KID voluntarily tested for radon in seven of its groundwater sources in 2005 and levels in these seven sources ranged between 261 - 1370 picocuries-per-liter and averaged 622 picocuries-per-liter.

**Arsenic:** 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 cost 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.

**NOTE: This Report can be made available in Spanish if requested.**

*We test the drinking water quality 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, 2005.*

*Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.*

**Kinneloa Irrigation District (KID)** is pleased to provide you with this Annual Consumer Confidence Report (CCR), which contains information about the quality of drinking water that is delivered to you. This report meets the new California requirements for reporting water quality information to customers of public water systems.

Other educational information in this report informs you about drinking water safety and, hopefully, helps you to understand the challenges of delivering a safe and protected supply of drinking water.

**In 2005, KID distributed approximately 732 acre feet of water** to its customers. This is equivalent to 239 million gallons. One acre foot is enough water to cover one acre of land, one foot deep with water, or approximately 325,000 gallons. Your tap water was delivered from two vertical wells and nine horizontal wells. The vertical wells pump from the Raymond Basin down to 450 feet below the ground surface. The horizontal wells are tunnels in the mountainside that collect water via gravity. The tunnels and wells feed reservoirs where the waters can be mixed. Chlorine disinfectant is added to prevent bacterial growth in the reservoirs and the distribution pipeline. KID has emergency interconnections with the City of Pasadena, and one of these was used in 2005.

**In general, 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.

- *Where does our water come from?*
- *What are the possible sources of contaminants in tap water?*
- *How is our drinking water treated?*
- *What, if any, contaminants have been detected in our drinking water?*
- *Is there reason for concern about radon and nitrate in our water?*
- *Are certain people more vulnerable to the effects of some contaminants in drinking water?*
- *What is the status of our fluoride variance?*
- *Were there any violations of drinking water regulations?*
- *What are the definitions for all those regulatory and technical terms in the report?*
- *Who can I contact for more information and when does the Board of Directors meet?*

**Contaminants that may be present in source water include:** 1) **microbial contaminants**, such as virus and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; 2) **inorganic contaminants**, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; 3) **pesticides and herbicides** that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; 4) **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 storm water runoff, agricultural application, and septic systems; 5) **radioactive contaminants**, that can be naturally occurring or be the result of oil and gas production and mining activities.

**As in past years, the Detected Contaminant Chart**

compares the quality of your tap water to State drinking water standards. More than 100 regulated contaminants have been tested that were not detected in drinking water delivered by KID; the list of non-detected contaminants is not included in the chart. With the exception of nitrate, each contaminant detected in our groundwater sources occurs in your drinking water from erosion of natural deposits in soils. Fluoride is the only chemical in your water that exceeded the maximum allowable level set by the California Department of Health Services (CDOHS). KID has a fluoride variance from the CDOHS which gives us permission to exceed the fluoride standard. The conditions of the variance are described in detail elsewhere in the report.

**The Kinneloa Irrigation District serves**

**approximately 1500 people** in 594 households, a school, nursery, church and fire station in the north-central part of Los Angeles County with the city limits of Pasadena on the west, south and east and the Angeles National Forest to the north. The service area covers 500 acres and additionally encompasses 500 acres of watershed area. The General Manager reports to a five member Board of Directors that meets the third Tuesday every month at KID offices located at 1999 Kinclair Drive, Pasadena. For more information, you may contact the office at 626-797-6295.

**In order to ensure that tap water is safe to drink,**

the U.S. Environmental Protection Agency (USEPA) and the California Department of Health Services (CDOHS) prescribe regulations that limit the amount of certain

contaminants in water provided by public water systems. CDOHS regulations also establish limits for contaminants in bottled water that provide the same protection for public health. 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 Safe Drinking Water Hotline (1-800-426-4791).

**The water quality charts** list all the regulated drinking water contaminants (and unregulated contaminants requiring monitoring) that we detected during the last three calendar years. Certain regulated chemicals are monitored less frequently than once each year. The results from the most recent testing done in accordance with the monitoring regulations and the respective sampling year are noted in each table. Some of the data, although more than one year old, are representative of the current drinking water quality.

**It is possible that lead levels at your home** are higher than at other homes in the community as a result of materials used in your home's plumbing. Infants and young children are more vulnerable to the effects of lead in drinking water than the general population. You can minimize exposure to lead by using the first water in the morning out of your tap for something other than drinking or you can flush the water out of your tap before drinking by running the water for only a few seconds.

KINNELOA IRRIGATION DISTRICT GROUNDWATER QUALITY							
Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Contaminant
<b>Radiologicals</b>							
Alpha Radiation (pCi/L)	15	( 0 )	3.9	0 - 12.1	No	2003	Erosion of Natural Deposits
Radium (pCi/L)	5	( 0 )	1.677	0 - 2.027	No	2003	Erosion of Natural Deposits
<b>Inorganic Chemicals</b>							
Nitrate (ppm as NO3)	45	45	17.5	10.1 - 29.4	No	2005	Fertilizers, Septic Tanks
Arsenic (ppb)	50	0.004	2.5	1 - 8.6	No	2004	Erosion of Natural Deposits
Fluoride (ppm) **	3	1	2.18	1.0 - 3.4	No	2005	Erosion of Natural Deposits
<b>Secondary Standards*</b>							
Chloride (ppm)	500*	n/a	14.9	7.2 - 28	No	2004	Erosion of Natural Deposits
Specific Conductance (umho/cm)	1,600*	n/a	437.1	350 - 640	No	2004	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	31.7	20.6 - 54.6	No	2004	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1000*	n/a	260	220 - 350	No	2004	Erosion of Natural Deposits
<b>Unregulated Contaminants Requiring Monitoring</b>							
Sodium (ppm)	Not Regulated	n/a	20.9	15.5 - 43.8	n/a	2004	Erosion of Natural Deposits
Hardness (ppm)	Not Regulated	n/a	178	86 - 292	n/a	2004	Erosion of Natural Deposits
<p><b>ppb</b> = parts-per-billion; <b>ppm</b> = parts-per-million; <b>pCi/L</b> = pico curies per liter; <b>ntu</b> = nephelometric turbidity units; <b>ND</b> = not detected  <b>MCL</b> = Maximum Contaminant Level; <b>(MCLG)</b> = federal MCL Goal; <b>PHG</b> = California Public Health Goal; <b>n/a</b> = not applicable                      * Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).                      ** See Fluoride note on page 4</p>							

**Definitions of terms used in the water quality charts:**

**Public Health Goal (PHG)** is the level of a contaminant in drinking water below which there is no known or suspected risk to health. PHGs are set by the California Environmental Protection Agency.

**Maximum Contaminant Level Goal (MCLG)** is the level of a contaminant in drinking water below which there is no known or suspected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**Maximum Contaminant Level (MCL)** is 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.

**Primary Drinking Water Standards are MCLs** for contaminants that effect health along with their monitoring and reporting requirements, and water treatment requirements. **Secondary MCLs** are set to protect the odor, taste, and appearance of drinking water.

**Regulatory Action Level (AL)** is the concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.

**Variations and Exemptions:** Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

**Secondary Drinking Water Standards (SDWS):** MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

**Maximum Residual Disinfectant Level (MRDL)** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**Maximum Residual Disinfectant Level Goal (MRDLG)** 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.

**Treatment Technique (TT)** is a required process intended to reduce the level of a contaminant in drinking water.

**ND:** Not detectable at testing limit.

**ppm:** Parts per million or milligrams per liter (mg/L)

**ppb:** Parts per billion or micrograms per liter (ug/L)

**ppt:** Parts per trillion or nanograms per liter (ng/L)

**pCi/L:** Picocuries per liter (a measure of radiation)

**Lead and Copper have not been detected in our groundwater sources;** however, these metals can increase when water contacts plumbing materials in your home. Because domestic plumbing is the primary source of these metals, drinking water regulations require testing tap water samples for lead and copper inside a number of representative homes every three years. If more than 10 percent of the tap samples from homes exceed the action level set by the USEPA, the water system is required to treat the water in a way that reduces the corrosiveness of the water. Testing completed in 2004 showed detectable lead and copper in some samples well below the action level of concern.

**Nitrate is found in two of KID's groundwater sources, one tunnel and one well, at levels exceeding one-half the MCL,** but never greater than the MCL. The source of the elevated nitrate could be septic tanks or nitrogen fertilizers. Nitrate in drinking water at levels above the MCL of 45 milligrams-per-liter is a health risk for infants of less than six months of age. High 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. High nitrate levels 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. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider, or choose to use bottled water for mixing formula and juice for your baby. If you are pregnant, you should use bottled water.

KINNELOA IRRIGATION DISTRICT DISTRIBUTION SYSTEM WATER QUALITY						
	MCL	PHG	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Fluoride (ppm)	3**	1	1.80	0.7 - 2.5	No	Naturally present in groundwater
Total Trihalomethanes (ppb)	100	n/a	7.64	ND - 4.4	No	Formed from addition of chlorine
Turbidity (ntu)	5*	n/a	0.23	0.1 - 0.5	No	Naturally present in groundwater
Odor (ton)	3*	n/a	1	1 - 1	No	Naturally present in groundwater
<p>Six distribution system locations are tested for fluoride monthly at the request of the Board of Directors while two of the locations are tested monthly on a rotating basis as a condition of the fluoride variance granted by the Dept. of Health Services.                      *Containment is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color)                      **See fluoride note on page 4.</p>						

LEAD AND COPPER ACTION LEVELS AT RESIDENTIAL TAPS						
	Action Level(AL)	MCLG (PHG)	90th Percentile Value	Sites Exceeding AL/Number of Sites	AL Violation?	Typical Source Of Contaminant
Copper (ppm)	1.3	0.17	0.16	0 / 10	No	Corrosion of household plumbing
Lead (ppd)	15	2	9.7	0 / 10	No	Corrosion of household plumbing
<p>Every three years, 10 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2004. Lead was detected in three samples. Copper was detected in 5 samples. Copper and Lead never exceeded the regulatory action level (AL). A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.</p>						