



# Chandler Heights Citrus Irrigation District Annual Water Quality Report for Calendar Year 2010

Este informe contiene informacion importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

## What's in your water?

All public water systems issue a report every year about their drinking water quality. We perform hundreds of tests each year, under guidelines set by the U.S. Environmental Protection Agency (EPA) and Arizona Department of Environmental Quality (ADEQ). This report summarizes those test results and provides you with additional information about CHCID drinking water and water operations.

CHCID water met or exceeded all of the EPA and ADEQ standards for drinking water during 2010. The District continues to be vigilant about land use changes and Arizona water issues in order to anticipate any changes that could affect our drinking water quality or quantity in the future.

## Where does your water come from?

CHCID drinking water comes from wells. Well 5 is our primary source for drinking water. The water table is about 300 feet below the surface and has remained stable for more than a decade. Well 6 is normally used for irrigation, but it is the backup drinking water source. We draw our water from a large aquifer system that is underneath all the communities in the East Valley.

Water goes from the well to the treatment plant on Valencia, where the District office is located. The water is chlorinated and goes into two storage tanks. From the tanks it goes through a pump that sends it to your home.

Disinfection of your drinking water is done with chlorine. The chlorine level in the water at the plant is maintained at 0.50 -0.80 ppm. The pressure in the system is 60-80

psi, depending on where in the District you live.

We also have an emergency connection that lets us get water from the Queen Creek Water System instead of our own wells. This report does not talk about the water from Queen Creek because we use their water so rarely that it is not significant.

## What's in the water besides water?

A contaminant is anything in the water besides water. All drinking water contains small amounts of contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. For more information about contaminants and potential health effects call the EPA's Safe Drinking Water Hotline (1-800-426-4791).

As water travels over the surface of the land or through the ground it dissolves naturally occurring minerals, possibly radioactive, and can pick up substances resulting from animals or human activity. Eventually it works its way down through the ground and into the aquifer we use.

Common contaminants in source water include:

- Microbial contaminants, such as viruses and bacteria, which come from sewage treatment plants, septic systems, livestock, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from stormwater runoff, industrial or residential wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which come from a variety of sources such as agriculture, stormwater runoff, and residential use.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which come from gas stations, stormwater runoff, and septic systems and are also byproducts of industrial processes and petroleum production.

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

EPA and ADEQ set limits on the levels of over 80 possible contaminants to guarantee water from public water systems is safe. The EPA changes the list over time as new information comes to their attention.

Nitrates and arsenic are two contaminants we watch very carefully. In this area nitrates come mostly from septic systems and fertilizer, and arsenic is naturally occurring.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. It's possible for nitrate levels to rise quickly for short periods of time because of rainfall or agricultural activity, but CHCID has never seen it happen in our system. If you are caring for an infant, you should ask for advice about drinking water from your health care provider.

CHCID drinking water meets EPA's standard for arsenic, but it does contain low levels of arsenic. The EPA 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 problems such as skin damage and circulatory problems.

Elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water usually comes from the plumbing materials in your home. CHCID is responsible for providing high quality drinking water, but cannot control the materials used in your home plumbing. When your water has been sitting still in the pipes 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 drinking water, you may wish to have the water in your home 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>.

### **Everybody is different**

The EPA and ADEQ contaminant rules are written for the general population, but some people are more vulnerable to contaminants in drinking water. Immuno-compromised people, such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and all infants can be at a higher risk from some contaminants. These people should seek advice about drinking water from their health care providers.

### **Backflow/cross connections**

Plumbing cross-connections, which are defined as actual or potential connections between a potable and non-potable water supply, constitute a serious public health hazard. There are numerous cases where cross-connections have been responsible for contamination of drinking water, and have resulted in illness or the spread of disease.

CHCID has a backflow prevention program and does require some customers to install backflow prevention devices and have them tested annually

### **What do we test?**

CHCID ensures water quality by performing numerous tests on a regular schedule. Some tests we perform several times a week. Others are done monthly, annually, or every few years. EPA and ADEQ set requirements for how often to test for different contaminants, and they vary from monthly to every 9 years. CHCID exceeds the EPA/ADEQ requirements by performing more than the required number of tests. The most common tests fall into the following categories:

- Total Coliform Tests: Tests for coliform bacteria are performed at specific places throughout the system every month. Coliform bacteria are not a health risk, but they are an indicator that disease causing bacteria could be present.
- Chlorination: Chlorine is added to our water as a disinfectant. We test several times a week at the treatment plant to ensure

the chlorine level remains correct. We also test monthly at the four corners of the District.

• **Inorganic Chemicals:** Inorganics include metals, such as arsenic and mercury; chemical compounds, such as nitrate and nitrite, and various other substances used to determine drinking water quality. We test for some inorganics annually and others every few years.

• **Organic Chemicals:** These include pesticides, herbicides, and a long list of industrial chemicals. Most of these are tested every 9 years.

All of the tests for contaminants in water are reported in parts per million or parts per billion; an indication of how low the contaminant levels are in drinking water. If you would like more information about CHCID's water quality, or operations in general, please contact us.

**MCL:** Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to MCLG's as feasible using the best available treatment technology.

**MCLG:** Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**ppm:** Parts per million or milligrams per liter (mg/l). As a comparison, 30 seconds is 1 ppm of a year.

**ppb:** Parts per billion or micrograms per liter (µg/l)

<b>Regulated Contaminants Measured at the Treatment Plant in 2009 or 2010</b>					
<b>Contaminant</b>	<b>MCL</b>	<b>MCLG</b>	<b>Detected Range</b>	<b>Meets Standard</b>	<b>Typical Sources</b>
Nitrate (ppm)	10	10	6.0	yes	Runoff from septic tanks, sewage, fertilizer, naturally occurring.
Arsenic (ppb)	10	0	8.1	yes	Mining, erosion of natural deposits.
Barium (ppm)	2.0	2.0	0.052	yes	Erosion of natural deposits.
Chromium (ppb)	100	100	3.3	yes	Erosion of natural deposits.
Fluoride (ppm)	4.0	4.0	0.43	yes	Naturally occurring, discharge from fertilizer and aluminum factories. Also a water additive which promotes strong teeth.

<b>Radiochemical Contaminants Measured at the Treatment Plant in 2009</b>					
<b>Contaminant</b>	<b>MCL</b>	<b>MCLG</b>	<b>Detected Range</b>	<b>Meets Standard</b>	<b>Typical Sources</b>
Gross alpha particles (pCi/L)	15		2.3 ± 0.7	yes	Naturally occurring, industrial and mining activity.
Combined radium (pCi/L)	5		< 0.4	yes	Naturally occurring, industrial and mining activity.

<b>Disinfection Related Contaminants Measured in the Distribution System in 2010</b>					
<b>Contaminant</b>	<b>MCL</b>	<b>MCLG</b>	<b>Detected Range</b>	<b>Meets Standard</b>	<b>Typical Sources</b>
Haloacetic Acids (ppb)	60	NA	1.1	yes	Byproduct of chlorine disinfection.
Trihalomethanes (ppb)	80	NA	-5.9	yes	Byproduct of chlorine disinfection.
Chlorine (ppm)	4.0	4.0	0.46 – 0.65	yes	Water additive used to control microbes.

<b>Unregulated Contaminants Measured at the Treatment Plant in 2010</b>		
<b>Contaminant</b>	<b>Detected Range</b>	
Sodium (ppm)	130	For information only.
pH	7.7 – 8.0	For information only.
Hardness (ppm)	180	For information only. 140 ppm from calcium and 40 ppm from magnesium, as CaCO <sub>3</sub> equivalents. Equivalent to 10.5 grains per gallon.

<b>Regulated Contaminants Measured at Residents Water Taps in 2009</b>						
<b>Contaminant</b>	<b>Action Level</b>	<b>MCLG</b>	<b>90<sup>th</sup> Percentile Reading</b>	<b>Number of Samples</b>	<b>Meets Standard</b>	<b>Typical Sources</b>
Lead (ppb)	15	NA	2	10	yes	Corrosion of household plumbing, erosion of natural deposits.
Copper (ppm)	1.3	NA	0.05	10	yes	Corrosion of household plumbing, erosion of natural deposits, leaching of wood preservatives.

During 2010 CHCID tested for total coliform bacteria over 48 times. One test out of 48 was positive for bacteria, but multiple retests in the same area failed to confirm the presence of bacteria.

These inorganic contaminants were measured during 2009 and were either not detected or were present at such low levels that there is no useful data to report.  
Cadmium, Mercury, Selenium, Antimony, Beryllium, Cyanide, Nickel, Thallium.

These synthetic organic chemicals were measured during 2009 and were either not detected or were present at such low levels that there is no useful data to report.  
2,4-D, 2,4,5-TP (Silvex), Toxaphene, Alachlor (Lasso), Atrazine, Carbofuran, Pentachlorophenol, Chlordane, Dibromochloropropane, Ethylene dibromide, Heptachlor, Heptachlor epoxide, Lindane, Benzopyrene, Dalapon, Diphthlate, Diadipate, Dinoseb, Dioxin, Diquat, Endothall, Endrin, Glyphosate, Hexachlorobenzene, Hexachlorocyclopentadiene, Oxamyl, Picloram, Simazine, Methoxychlor, Polychlorinated Biphenyls (PCB), Pentachlorophenol

These volatile organic chemicals were tested for during 2008 and were either not detected or were present at such low levels that there is no useful data to report.  
1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,4-Dichlorobenzene, Benzene, Bromodichloromethane, Carbon Tetrachloride, Chlorobenzene, Chloroform, dis-1,2-Dichloroethane, Ethylbenzene, m,p-Xylenes, Methylene Chloride, o-Xylene, Styrene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride

**VIOLATIONS:** CHCID had no monitoring or water quality violations during 2010.

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