



# 2006 annual water quality report

City of  
Surprise

PWS ID: 04-07-500



## Our Mission: To Serve Your Water Needs

The city of Surprise and Arizona American Water Company bring you solid value for your money. We are dedicated to protecting the environment while bringing you quality water at a fair price.

Our scientists and engineers work hard to bring you refreshing water every time you pour a glass.

We start with a natural fresh water source. We regularly sample and analyze water before it enters our system. We conduct quality control checks as water leaves our plant.

Finally, we routinely check the water at selected locations around our distribution system to ensure our water has remained high-quality until it reaches your home.

## Our Mark of Excellence

We are once again proud to present to you our annual water quality report. Over the years, we have dedicated ourselves to producing high-quality drinking water. We continually strive to adopt new and better methods of delivering the best quality drinking water to you. As regulations and drinking water standards change, it is our commitment to you to incorporate these changes system wide in an expeditious and cost-effective manner.

As new challenges to drinking water safety emerge, we will be vigilant in maintaining our objective of providing quality drinking water at an affordable price. If you have any health concerns relating to the information in this report, we encourage you to contact your health care provider.

### Our Customer Charter

#### We Are...

- dedicated to service excellence
  - focused on personalized solutions
  - committed to our customers' health and welfare
- therefore...**

#### We Will...

- partner with our customers
- treat them with dignity and respect
- enhance their quality of life
- earn their loyalty
- exceed their expectations

## What's Inside?

This report outlines the processes involved in delivering you the highest quality drinking water available. In it, we will answer these important questions:

### **Where does my water come from? What is in my drinking water?**

We will also provide information on other available resources that will answer questions about water quality and health effects.

## Share This Report

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important water quality information with water users at their location who are not billed customers of Arizona American Water Company and therefore do not receive this report directly.

## Where Does My Water Come From?

All of the water provided by Arizona American Water to the city of Surprise comes from groundwater pumped from the West Salt River Valley (WSRV) Sub-Basin.

The WSRV Sub-Basin is a broad, gently sloping alluvial plain that is bounded on the north by the Hieroglyphic Mountains and Hedgpeth Hills and on the west by the White Tank Mountains. Along the eastern boundary of the WSRV Sub-Basin are the Union Hills, Phoenix Mountains, and Papago Buttes. South Mountains, Estrella Mountains, and Buckeye Hills define the southern limits of the WSRV Sub-Basin. Depth to groundwater in this area is typically between 350 to 500 feet below the land surface.

Sources of groundwater include natural recharge from flood flows in streams and along mountain fronts, and incidental recharge from agricultural and urban irrigation, canals, effluent, and artificial lakes.

## Notice of Source Water Assessment

In 2004, the Arizona Department of Environmental Quality (ADEQ) completed a source water assessment for four wells used by the city of Surprise. The Assessment reviewed the adjacent land uses that may pose a potential risk to the sources. These risks include, but are not limited to, gas stations, landfills, dry cleaners, agriculture fields, wastewater treatment plants, and mining activities. Once ADEQ identified the adjacent land uses, they were ranked as to their potential to affect the water source. The assessment was finalized in 2004 and revealed that there were no adjacent land uses in the vicinity of the four wells.

The complete assessment is available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, Arizona 85007, between the hours of 8:00 a.m. and 5:00 p.m. Electronic copies are available from ADEQ at [dml@azdeq.gov](mailto:dml@azdeq.gov). For more information, call ADEQ's Source Water Assessment and Protection Unit at 602-771-4644 or visit their website at [www.azdeq.gov/environ/water/dw/swap.html](http://www.azdeq.gov/environ/water/dw/swap.html).

### **What we do to protect groundwater:**

We protect the sources by ensuring proper well construction and system operations and management.

### **What you can do to protect groundwater:**

Residents can help by taking hazardous household chemicals to hazardous material collection days and limiting pesticide and fertilizer use. For information on household hazardous material collection days in your area, please contact the city of Surprise at (623) 594-5858.

## Water Conservation Tips

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water but can also save you money by reducing your water bill.

### **Conservation measures you can use inside your home include:**

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Soak dishes before washing.
- Run the dishwasher only when full.

### **You can conserve outdoors as well:**

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car, and save the hose for rinsing.

## What's In My Water?

The data presented in this report is a combination of analysis results from our nationally recognized water quality lab and commercial laboratories, all certified in drinking water testing by the State of Arizona Department of Health Services. For your information, we have compiled a list in the table below showing what substances were detected in our drinking water during 2006 or the last sampling period. If you have any questions about this report or your drinking water, please call our Arizona Customer Service Center at (800) 383-0834.

## Water Quality Results

Regulated Substances Measured on the Water Leaving the Treatment Facility								
Substance (units)	Year Sampled	MCLG	MCL	Highest Amount Detected	Range of Detections	Compliance Achieved	Typical Source	
Arsenic (ppb)	2005	0	10	17 <sup>1</sup>	4 – 17	YES <sup>1</sup>	Erosion of natural deposits	
Barium (ppb)	2005	2000	2000	19	1 – 19	YES	Erosion of natural deposits	
Chromium (ppb)	2005	100	100	43	19 – 43	YES	Erosion of natural deposits	
Selenium (ppb)	2005	50	50	3.0	ND – 3.0	YES	Erosion of natural deposits	
Fluoride (ppm)	2005	4	4	1.5	0.5 – 1.5	YES	Erosion of natural deposits	
Nitrate (ppm)	2006	10	10	7.8 <sup>2</sup>	0.9 – 7.8	YES	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	
Total Xylenes (ppm)	2006	10	10	0.0025	ND – 0.0025	YES	Discharge from petroleum factories; Discharge from chemical factories	
Alpha Emitters (pCi/L)	2002	0	15	8	1.6 – 8.0	YES	Erosion of natural deposits	
Regulated Substances Measured in the Distribution System								
Substance (units)	Year Sampled	MCLG/MRDLG	MCL/MRDL	Average Amount Detected	Range of Detections	Compliance Achieved	Typical Source	
TTHMs (ppb)	2006	NA <sup>3</sup>	80	15.2	0 – 15.2	YES	By-product of drinking water disinfection	
HAA5s (ppb)	2006	NA <sup>3</sup>	60	0.1	ND – 1.3	YES	By-product of drinking water disinfection	
Chlorine residual (ppm)	2006	4	4	0.8	0.2 – 1.8	YES	Water additive used to control microbes	
Tap Water Samples: – Lead <sup>4</sup> and Copper Results								
Substance (units)	Year Sampled	MCLG	Action Level	90th Percentile	Number of Samples	Number of Samples Above Action Level	Compliance Achieved	Typical Source
Copper	2005	1.3	1.3	0.18	30	0	YES	Corrosion of household plumbing systems; erosion of natural deposits
Unregulated Substances Measured on the Water Leaving the Treatment Facility								
Substance (units)	Year Sampled		Range of Detections		Typical Source			
Nickel (ppb)	2005		ND – 1		Erosion of Natural Deposits			
Sodium (ppm)	2005		46 – 94		Natural erosion			
Sulfate (ppm)	2005		17 – 72		Natural erosion			
Hardness (grains/gallon)	2005		3 – 7		Natural calcium/magnesium content			
PH (standard units)	2005		7.5 – 8.3		pH is a measure of acid/base properties			
Iron (ppm)	2005		<0.1 (ND)		Natural content			
<p>1 Arsenic – Although arsenic was detected in the drinking water at levels higher than the MCL, compliance with the arsenic MCL is based on four quarterly samples. At this time, four quarters of sampling has been not completed. The City of Surprise is committed to meeting the new Federal arsenic standards of 10 parts per billion and is working diligently to complete the Arsenic Removal Facilities in Surprise. 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.</p> <p>2 Nitrate – 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. 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.</p> <p>3 TTHM/HAA5 – Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants:            Trihalomethanes: bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L). Chloroform is regulated with this group but has no MCLG.            Haloacetic acids: dichloroacetic acid (zero); trichloroacetic acid (0.3 mg/L). Monochloroacetic acid, bromoacetic acid, and dibromoacetic acid are regulated with this group but have no MCLGs.</p> <p>4 Lead – Lead Samples were taken and analyzed in 2005. No lead was detected in any of the samples, and therefore it is not listed in the tables of detected constituents above.</p> <p><b>Home Water Treatment Units</b> – If you install a home treatment system such as a water softener or reverse osmosis system to improve taste or odor, remember to follow the manufacturer's instructions on operation and maintenance. Failure to perform maintenance can result in poor water quality. We recommend contacting the manufacturer of your treatment system for maintenance instructions or assistance. Additional information about home treatment systems is available from the Arizona Water Quality Association at 480-947-9850 or by writing to 6819 E. Diamond St., Scottsdale, AZ 85257.</p>								

## How to Read This Table

Arizona American Water conducts extensive monitoring to guard against contaminants in your water. The results of our monitoring are reported in the adjacent tables. For help with interpreting this table, see the "Table Definitions" section.

Starting with a **Substance**, read across. **Year Sampled** is usually in 2006 or prior. **MCLG** is the goal level for that substance (this may be lower than what is allowed). **MCL** shows the highest level of substance (contaminant) allowed. **Highest Amount Detected** represents the highest result that was found. **Range of Detections** tells the highest and lowest amounts found. A **Yes** under **Compliance Achieved** means the amount of the substance is below government requirements. **Typical Source** tells where the substance usually originates.

Unregulated substances are measured, but maximum contaminant levels have not been established by the government.

## Definitions of Terms Used in This Report

- **MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs 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. MCLGs allow for a margin of safety.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.
- **AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **ND:** None detected.
- **pCi/L (Picocuries per liter):** Measurement of the natural rate of disintegration.
- **ppb – parts per billion:** One part substance per billion parts water (or micrograms per liter).
- **ppm – parts per million:** One part substance per million parts water (or milligrams per liter).
- **TTHM – Total Trihalomethanes:** Consist of Chloroform, Bromoform, Bromodichloromethane, Dibromochloromethane.
- **HAA5 – Haloacetic Acids:** Consist of Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Bromoacetic Acid, Dibromoacetic Acid.

## Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

## Lead

Arizona American Water Company monitored the water for lead and copper in 2005 at 30 residences throughout the community and met the federal lead and copper standards. The 30 houses sampled were representative of the types of houses throughout the system. If your house was sampled you would have received the analysis results. If you weren't part of the representative sampling and are concerned about elevated lead levels in your home's water, you may wish to flush your tap for 30 seconds to 2 minutes before using the water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

## Substances Expected to be in Drinking Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must 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 these contaminants does not necessarily indicate that the water poses a health risk.

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 can acquire naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity.

## Substances 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, or wildlife.

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems.

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at 1-800-426-4791.



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Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. 1-(800) 383-0834

For more information about this report, or for any questions relating to your drinking water, please call our customer service center at 1-(800) 383-0834.