

# 2010

## WATER QUALITY REPORT

TOWN OF GILBERT, PUBLIC WORKS



### *Confidence is high*

Welcome and thank you for choosing the Town of Gilbert for your residence. We are pleased to report another successful year for providing our customers the tap water that met and/or exceeded the federal and state standards.

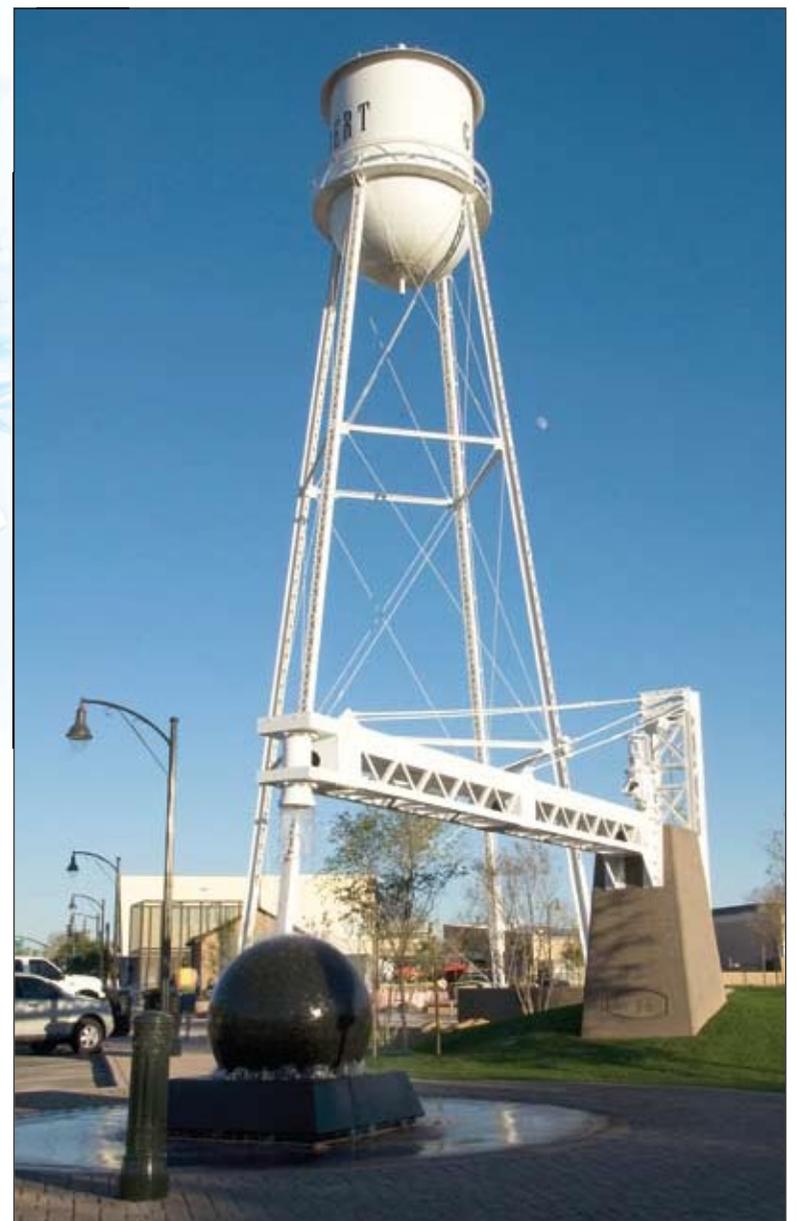
Following is the Water Quality Report, also known as the Consumer Confidence Report (CCR) for the water quality data for the year 2009. The CCR is our report with summary of water quality data, water supply and other useful information.

The Safe Drinking Water Act of 1974 and subsequent amendments by the U.S. Environmental Protection Agency (EPA) dictate that water providers monitor their treatment processes and systems to ensure a safe drinking water supply. The Town uses guidance from the U.S. EPA, the Arizona Department of Environmental Quality (ADEQ), and the Maricopa County Environmental Health Services (MCEHS) to establish regular monitoring schedules for contaminants such as organic, inorganic chemicals and microbiological species.

The drinking water supply is a top priority for the Town of Gilbert. In 2009 our population was approximately 220,000 and our average water use was 43 million gallons per day (mgd). In order to effectively and efficiently meet the increasing demands for drinking water, the Town expanded its existing surface water treatment plant to a capacity of 45 million gallons per day (mgd). The new Santan Vista surface water treatment plant was completed on time and is delivering water to our customers. We are also currently developing four additional groundwater wells and a new storage reservoir in our community.

Please contact the appropriate Town employees via e-mail or the phone numbers provided in this report for any question or concern.

As we constantly plan to meet the needs of today and tomorrow, success is reachable with the cooperation of the customers to help us by conserving water. Together we can do our part to use water wisely and ensure an adequate water supply.



Gilbert's Water Tower Plaza features our original reservoir for this precious resource.  
Photo by Mark Bennett.

*Este informe contiene información muy importante sobre su agua potable. Si desea una copia de este informe en español o tiene alguna pregunta sobre el, por favor llame a 480-503-6378.*

## Drinking Water Source

Surface water is a primary water source for the Town of Gilbert. Surface water is supplied via canal system from the Salt River Project (SRP) and Central Arizona Project (CAP). SRP manages several dams and reservoirs on the Salt and Verde rivers. Water collected from these rivers into reservoirs is released into SRP canals. CAP's 336 mile long system carries Colorado River water from Lake Havasu, through Phoenix, to south of Tucson.

## Water Treatment

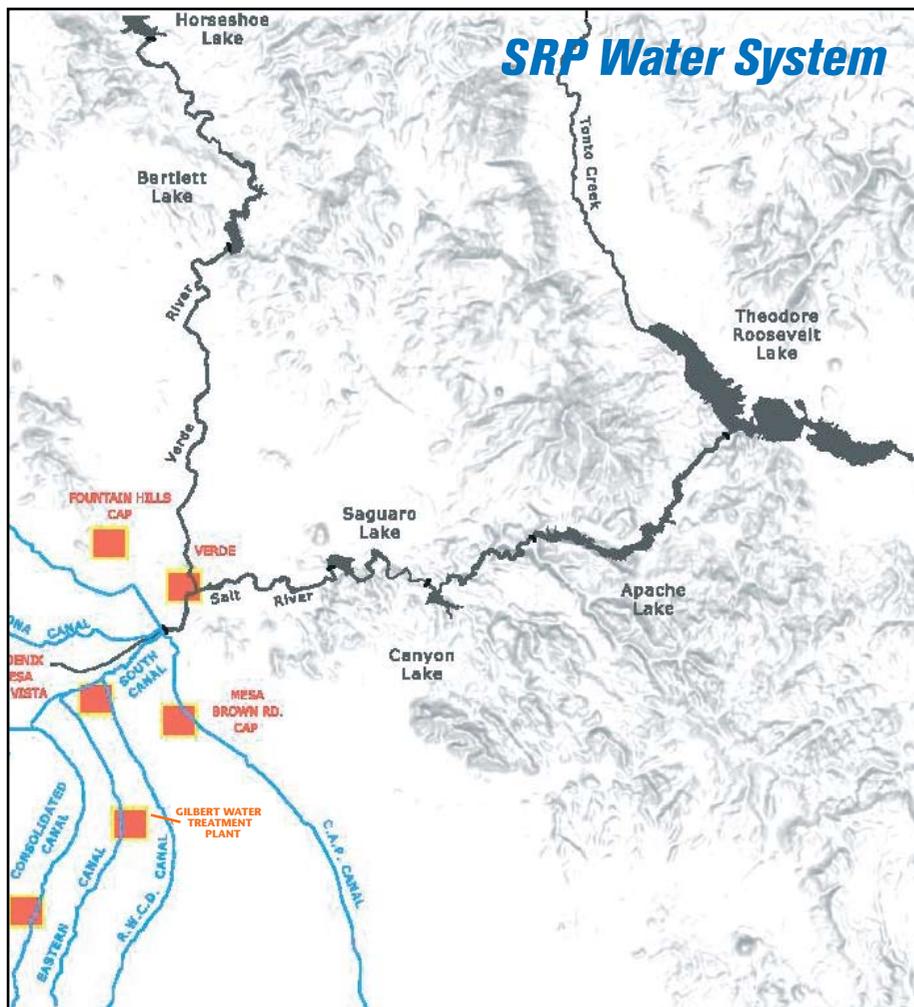
The Town of Gilbert has two drinking water treatment plants:

**North Water Treatment Plant (NWTP):** Called NWTP due to its location in the north side of the town. NWTP is situated on the eastern canal receiving water from the SRP (mixture of salt river and verde river). Water delivered from the NWTP is treated using the conventional methods of coagulation, flocculation, sedimentation, and filtration. The NWTP can produce as much as 45 million gallons of water per day (MGD) and has a 16 million gallon (MG) reservoir onsite for water storage.

**Santan Vista Water Treatment Plant (SVWTP):** Called Santan Vista because of the stunning view of the Santan mountains from the plant control room. This plant is receiving water from CAP (Colorado river watershed). From CAP turnout, water is brought to the plant through approximately 14 miles of 48" ductile iron pipeline. This plant is built and operating in partnership with City of Chandler. Initial capacity for this plant is 24 MGD; 12 MGD for the town and 12 MGD for the City of Chandler. This plant is treating the water using ballasted flocculation and average process time is 20-25 minutes. Onsite reservoir capacity is 6 MGD.

## Groundwater

Ground water availability from wells is nearly 44 MGD, not including reservoir storage, and is also delivered to the customers via the distribution system that uses chlorine as disinfectant. Groundwater is pumped from 18 wells located throughout the town. Groundwater is used to meet the high demand and during canal dry outs for maintenance. Groundwater can be pumped directly in the distribution systems or can be used to fill a reservoir. In total, the Town of Gilbert can produce approximately 101 MGD and has storage capacity of just over 45 MG and can more than meet the demands from the community which has now grown to over 220,000 residents.



## Water Quality

Town of Gilbert Water Quality Staff collects and analyzes the drinking water you receive at your home or business. These tests ensure that your water meets health and safety standard set by the state and federal government. Town of Gilbert has the State certified laboratory that analyzes daily process, distribution and regulatory compliance samples. Each month, the staff collects 150 bacteriology samples and monitors chlorine level in the distribution system to control microbial activity. Our staff works to ensure compliance with all drinking water regulations and helps with new rule implementation.

## Source Water Assessment

In 2004, ADEQ completed a Source Water Assessment (SWA) for the 12 groundwater wells (at the time of the assessment) and one WTP used by the Town of Gilbert. The assessment reviewed and evaluated adjacent land uses to the aforementioned locations that may pose a potential risk to water, and the quality thereof, served to the community from those sources. These risks may include, but are not limited to, gas stations, landfills, dry cleaners, and agriculture fields. The result of the SWA led to 10 sources receiving a low risk susceptibility to water rating and three identified as high risk. Those sites receiving a high risk designation are located in proximity to a gas station, agriculture field, and an industrial park. None of the locations, including those with a low risk assessment, have detected contamination; however, the Town remains vigilant in their monitoring to ensure the best water quality is served to our community. Residents can help protect source water by taking hazardous household chemicals to hazardous material collection sites and by limiting the amount of pesticide and fertilizer use in the home. The SWA is available to the public by request from the Town Clerk's Office for the Town of Gilbert or visit the ADEQ's SWA Unit website at [www.azdeq.gov/environ/water/dw/swap.html](http://www.azdeq.gov/environ/water/dw/swap.html) for an electronic copy.

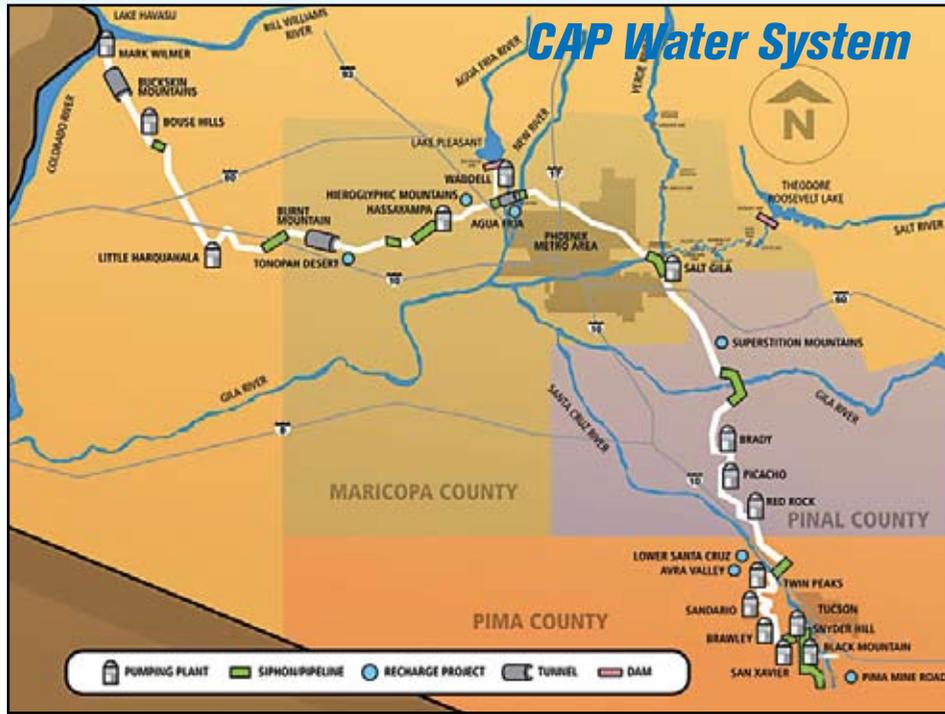
## Drinking Water – Possible Contamination Sources

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. In order to ensure that tap water is safe to drink, the U.S. EPA and the State of Arizona prescribe regulations that limit the amount of certain contaminants in the water provided by public water systems as drinking water. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants in tap water and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at 800/426-4791. Information on bottled water can be obtained from the U.S. Food and Drug Administration (FDA).

As water travels over the surface of the land or through the ground it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- **Inorganic contaminants** include salts and metals that can be naturally occurring in the makeup of soil and runoff from erosion. In addition, nitrate is found in fertilizer and animal waste products.
- **Microbial contaminants** include viruses or bacteria that may come from agricultural livestock operations or wildlife.
- **Organic chemical contaminants** include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production that may come from places such as gas stations and urban stormwater runoff.
- **Disinfection byproducts, precursors, turbidity, and biological species** are naturally occurring in the makeup of soil, runoff from erosion, and are byproducts of human and animal wastes. These analytes and species are tested in the WTP filtration process, in the distribution system, and at source water points of entry into the distribution system to ensure the effectiveness of water treatment and proper disinfection.
- **Pesticide and herbicide contaminants** may come from agriculture, urban stormwater runoff, and residential use.
- **Radioactive contaminants** may be naturally occurring or can be the result of oil/gas production and mining activities.
- **Turbidity** is a measure of the cloudiness of the water. It is measured because it is a good indicator of water quality, and high levels of turbidity can hinder the effectiveness of the disinfection process.

\* 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; persons 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. The U.S. EPA and the Center 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 800/426-4971.



## Terms and Abbreviations

To help you understand the terms and abbreviations used in this report, we have provided the following definitions:

**A.L.** – An action level is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a community water system shall follow.

**MCL** – The maximum contaminant level is 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** – The maximum contaminant level goal is 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** – The maximum residual disinfection level is 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** – The maximum residual disinfectant level goal is the level of disinfection in drinking water 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 contamination.

**Nd** – Non-detection of monitored contaminants is reported for contaminants whose values are below the reporting limits/detection of laboratory methodology. The Nd notation does not mean that the concentration is zero.

**mrem/yr** – A measure of radiation absorbed by the body given as millirems per year.

**pCi/L** – The standard measure of radioactivity found in drinking water is given as picoCuries per liter.

**ppb** – Parts per billion is a measure of concentration that is equivalent to micrograms per liter. An analogy for 1 ppb is one red grain of rice in a billion white grains of rice.

**ppm** – Parts per million is a measure of concentration that is equivalent to milligrams per liter. An analogy for 1 ppm is one red grain of rice in a million white grains of rice.

**T.T.** – A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

**Running Annual Average (RAA)** – An average of monitoring results for the previous 12 calendar months.

**ND:** Not Detected      **NA:** Not Applicable

## Water Quality Data

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The State of Arizona requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Some of our data, though representative, may be more than one year old.

These tables show the results of our monitoring for the period of January 1 to December 31, 2009 unless otherwise noted.

### Microbiological Contaminants

Contaminant	MCL	MCLG	Unit	Result
Total Coliform Bacteria for Systems that collects >40 samples per month	No more than 5% of monthly samples can be positive	0	Absent or Present	0.6% 1 positive out of 165 samples
Fecal Coliform and E. Coli	A routine sample & a repeat sample are total coliform positive, & one is also fecal coliform or E. coli positive	0	Absent or Present	0%

### Turbidity

TT Requirement	Level Found	Sample Date
Maximum 1 NTU for any single measurement	Highest single measurement: 0.32	Date: 4/30/09
In any month, at least 95% of samples must be less than 0.3 NTU	Lowest monthly percentage of samples meeting TT standard for our technology:  99.99 % of monthly measurements were less than 0.3 NTU	Month: April

### Disinfectants

	MRDL	MRDLG	Units	Average/Detection Level Range
Chlorine	4	4	ppm	1.3 / 0.24 - 2.50

### Disinfection Byproducts

Contaminant	Units	MCL	MCLG	Average	Range
Haloacetic Acids (HAA)	ppb	60	N/A	19	ND-44
Total Trihalomethanes (TTHM)	ppb	80	N/A	56	ND-140
Bromate	ppb	10	0	1.1	ND-8.9

### Inorganic Contaminants

Contaminant	MCL	Units	Detection Level Range
Arsenic	10	ppb	<1.0-9.4
Barium	2	ppm	0.015-0.14
Chromium	100	ppb	<1.0-24
Fluoride	4	ppm	<0.40-1.1
Nitrate (as Nitrogen)	10	ppm	<0.20-10
Selenium	50	ppb	<2.0-3.6

Total Organic Carbon			
Contaminant	Compliance Factor (measurements should not be lower than this factor)	Lowest Running Annual Average (compliance factor)	Running Annual Average Range for the Year (compliance factor)
Total Organic Carbon (TOC) Removal Ratio	1.0	1.13	1.13-1.63

## Secondary Contaminants

Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects or aesthetic effects in drinking water. EPA recommends these standards but does not require water systems to comply.

Secondary Contaminants		
Contaminant	Units	Level Detected/Range
Alkalinity	ppm	42-197
Hardness as CaCO <sub>3</sub>	ppm gr/gal*	38-370 2.2-21.6
Iron	ppm	<0.050-1.2
Temperature	°C	12.7-33.5
pH	s.u.**	7.19-8.52
Chloride	ppm	96-310
Langlier Index	N/A	-0.07-0.56
Sodium	ppm	96-250
Sulfate	ppm	51-280
Total Dissolved Solids	ppm	410-1000
*The standard measure for hardness as calcium carbonate (CaCO <sub>3</sub> ) is either gr/gal (grains per gallon) or ppm. 1 gr/gal of hardness is equivalent to 17.1 ppm of hardness.		
**The standard measure for pH is standard units (s.u.)		

## Drinking Water and Your Health

Gilbert has long been a community of agriculture and remains so today although the numbers of farmed acres and numbers of dairy cattle are lower. Due to the agricultural and dairy business in Gilbert, we sometimes see nitrate levels that are above 5 ppm however none of the water delivered to residences exceeds the MCL of 10 ppm. While nitrate levels did not exceed the MCL in 2009 it is important to note that nitrate in drinking water at levels over 10 ppm is a health risk for infants of less than six months of age and can cause Blue Baby Syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity and the Town monitors regularly to ensure that the MCL is not exceeded. If you are caring for an infant you should ask advice from your health care provider regarding tap water in our community.

The arsenic standard of 10 ppb became effective on January 23, 2006 (prior to which it was set at 50 ppb). While your drinking water meets current EPA standards for arsenic, it does in fact contain low levels of arsenic. Arsenic is a naturally occurring element in the soils and geologic formations found in Arizona. 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. EPA continues to research the health effects of arsenic levels and their relevance to health. The Town has already added treatment technology to any source location indicating levels above the MCL of 10 ppb, and will also add treatment technology to future locations should it be necessary to ensure health and compliance to the standard.

## Pharmaceuticals and Personal Care Products (PPCPs)

PPCPs are being discovered in our drinking water supplies at very low concentrations. At this time EPA does not know whether there is a human health risk associated with these reported levels. We will continue to follow up with this issue. We encourage town residents to dispose of unused or expired prescription drugs properly and to follow federal government guidelines.



Photo by Mark Bennett

## Information on Water Conservation

Gilbert has adequate water supplies, but none to waste. Much of the water we use to drink, bathe, wash our cars, water our lawns and swim in comes from rain and snowmelt that collects in lakes and reservoirs north of our valley.

Periods of drought are common in our desert community and may last from three to thirty years. This requires Gilbert residents to take action as a community and as individuals. Incorporating conservation into our daily lifestyle isn't a choice, it's our responsibility.

Together, we can do our part to use water wisely and ensure an adequate water supply for today and future generations. Water conservation not only will help you save our precious water resources; it will also help you save money.

Often, small, inexpensive replacements or modifications of equipment indoors can mean big long term savings, not only of water, but of money and time. Several inexpensive water-saving devices can be easily installed in your home. These include faucet aerators; flow regulators for shower heads; displacement devices for toilets to reduce water consumption and hot water recirculation systems.

It may surprise you to learn that up to 70 percent of household water is used outdoors. Studies have found that homeowners use two to five times more water than is really needed in their landscapes. Most landscape watering can be cut in half with no visible effects on the plants. Even if you have installed low water use plants, it is up to you to continually monitor the amount of water they receive.

## For Additional Information and Resource

For more information on water quality for the Town of Gilbert please feel free to contact any of the following references. Water related information and topic may also be discussed at Town Council meeting, and information on meeting agendas and discussion opportunities are available at [www.gilbertaz.gov](http://www.gilbertaz.gov)

- Questions on water quality, 503-6387  
Public Works, 503-6400  
Water Conservation, 503-6098  
Utilities Department, 503-6800
- Tap Into Quality, [www.tapintoquality.com](http://www.tapintoquality.com)
- USEPA, [www.epa.gov/ogwdw](http://www.epa.gov/ogwdw)  
Safe Drinking Water Hotline, 800/426-4791
- Maricopa County Environmental Health Services,  
[www.maricopa.gov/envsvc](http://www.maricopa.gov/envsvc)
- Arizona Department of Environmental Quality, [www.azdeq.gov](http://www.azdeq.gov)

For more information on how you can conserve water use in and around the home or for an in-home water audit, please contact the Water Conservation Department for the Town of Gilbert.

