

KEY TO TABLE

AL (Action Level): Concentration of a contaminant that, if exceeded, triggers treatment or other community water system requirements.

ALG (Action Level Goal): The "Goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. The ALG allows for a margin of safety.

MCL (Maximum Contaminant Level): The highest level of a substance that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available technology.

MCLG (Maximum Contaminant Level Goal): The level of a substance 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 Disinfection 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 contamination.

Range: The highest and lowest measurements reported during the year.

TT (Treatment Technique): A required process intended to reduce the level of substance in drinking water.

mg/L = milligram per liter
mrem = milli rem
N/A = Not Applicable
ND = Not Detected
NTU = Nephelometric Turbidity Units
NG = No MCLG established
pCi/L = picocuries per liter (a measure of radioactivity)
PPM = Parts Per Million, or milligrams per liter (mg/L)
PPB = Parts Per Billion, or micrograms per liter (µg/L)
PPT = Parts Per Trillion, or nanograms per liter (nanograms/L)
P/A = Presence / Absence
ARA = Annual Running Average

1. 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. The arsenic level for 2011 was well below the 10 PPB MCL.

2. While your drinking water meets EPA's standard for nitrate-nitrogen, it does contain low levels of nitrate-nitrogen. The highest 2011 value for nitrate-nitrogen in the city of Glendale's water supply was 10.44 PPM. A single sample for nitrate-nitrogen at a well was 10.44 PPM. The well was on for a total of 15 minutes. The incident was reported to Maricopa County Environmental Services Department (MCESD), who determined that due to rounding, the nitrate-nitrogen level did not exceed the EPA's MCL of 10 PPM.

3. The city of Glendale has detected various amounts of radon in its drinking water. Radon can get into indoor air when released from tap water during showering, washing dishes or from 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.

4. Turbidity is a measure of the cloudiness of the water. We monitor turbidity because it is an indicator of the effectiveness of our filtration system.

5. Total Haloacetic Acids (HAA5): The sum of concentrations of mono-, di-, and trichloroacetic acids and mono- and dibromoacetic acids, which are byproducts of adding chlorine to water to kill harmful germs. The annual running average HAA5 value for 2011 was 14.7 PPB, meeting the EPA's MCL of 60 PPB. Water samples are collected for total haloacetic acids quarterly at 12 locations within the city which are then averaged together as a running average. This number reflects sampling that occurred during the last three quarters of 2010 and the entire year of 2011.

6. Total Trihalomethanes (TTHM): The sum of concentrations of chloroform, bromodichloromethane, dibromochloromethane and bromoform, which are byproducts of adding chlorine to water to kill harmful germs. Water samples are collected for total trihalomethanes quarterly at 12 locations within the city which are then averaged together as a running annual average. This number reflects sampling that occurred during the last three quarters of 2010 and the entire year of 2011. The average annual running TTHM value for 2011 was 50 PPB, meeting the EPA's MCL of 80 PPB.

7. The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

The city of Glendale has not detected any cryptosporidium in its source water or finished water during tests conducted in 2011.

This report contains important information about your drinking water. For a Spanish translated version, call 623-930-2700.

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



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2011 Water Quality Analysis

This table shows the results of our water quality analysis in 2011. Each substance that was detected in the water, even in the smallest traceable amount, is listed. The table contains the name of each substance; the highest substance level allowed by federal regulation; the highest level and range detected; and the major sources of each substance.

SUBSTANCE	FEDERAL MCL	MCLG	MAXIMUM	RANGE	AVERAGE	UNITS	SOURCES
Arsenic ¹	10	0	8.1	ND To 8.1	5.2	PPB	Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes
Barium	2000	2000	121	14.1 To 121	56.3	PPB	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	100	100	35.3	ND To 35.3	10.5	PPB	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	4	4	0.57	ND To 0.57	0.36	PPM	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer & aluminum factories.
Di(2-Ethylhexyl)Phthalate	6	0	0.78	ND To 0.78	0.61	PPB	Discharge from rubber and chemical factories
1,2-dibromo-3-chloropropane (DBCP)	0.2	0	0.02	ND To 0.02	0.01	PPB	Runoff/Leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Nitrate as Nitrogen ²	10	10	10.44	ND To 10.44	2.27	PPM	Runoff from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Total Organic Carbon	TT	N/A	2.54	ND To 2.54	1.46	PPM	Naturally present in the environment
Total Coliforms	Presence in no more than 5% of monthly samples	0	Highest monthly percentage 0.3%	0% To 0.30%	0.03%	P/A	Naturally present in the environment
Chlorine	MRDL = 4	MRDLG = 4	2.20	0.06 To 2.20	0.83	PPM	Water additive used to control microbes
Gross Alpha (excluding Radon & Uranium)	15	0	2.2	ND To 2.2	1.1	pCi/L	Erosion of natural deposits
Gross Beta	50 ⁷	0	14.4	ND To 14.4	3.3	pCi/L	Erosion of natural deposits
Radon ³	N/A	N/A	735	ND To 735	210	pCi/L	
Turbidity ⁴	TT=1 NTU	0	0.25	0.005 To 0.28	0.061	NTU	Soil runoff
Turbidity ⁴	TT=% Samples <0.3 NTU	0	100% of Samples <0.3	0% To 100.0%	100%=TT	NTU	Soil runoff
Total Haloacetic Acids ⁵	60 (ARA)	N/A	42.8	ND To 42.8	14.7 (ARA)	PPB	Byproduct of drinking water disinfection
Total Trihalomethanes ⁶	80 (ARA)	N/A	94	ND To 94	50 (ARA)	PPB	Byproduct of drinking water disinfection

SUBSTANCE	AL	ALG	MAXIMUM	# OF SITES ABOVE THE AL	90TH PERCENTILE	UNITS	SOURCES
Copper (2009)	1,300	1,300	655	0	411	PPB	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (2009)	15	0	3.77	0	ND	PPB	Corrosion of household plumbing systems; erosion of natural deposits

Keeping Your Drinking Water Safe

The quality of your drinking water is very important to us. The city of Glendale adheres to the water quality requirements established by the U.S. Environmental Protection Agency (EPA). The city delivers high quality drinking water through treatment and analysis.

Glendale has a dedicated staff of water industry professionals working around the clock to provide you with water that is superior to state and federal water quality standards. The city tests, analyzes and monitors water quality many times, everyday.

2011 Water System Enhancements

Each year, the city of Glendale works hard to provide you, and the community with safe, reliable drinking water and outstanding customer service. We are continually improving our services, facilities, and operations. Current projects include:

- Improving the water distribution system, replacing the older pipes and constructing new distribution pipelines and connections.
- Continuously updating security measures and safety plans.
- Operation of a new groundwater treatment plant at the Oasis Water Campus. The treatment plant reduces nitrates and other contaminants found in groundwater.
- A state-of-the-art Water Quality Detection System that uses the best available technology to ensure a safe water supply.
- Continuing to use wells to improve water quality.
- Using system optimization practices to improve water quality. This is accomplished through treatment and mechanical operations that reduce costs and maximize the ability to meet and exceed regulatory requirements.

This report contains important information about your drinking water.

Want to Know More?

Water-related topics may be discussed at City Council meetings or other public forums. We welcome your attendance. City Council meeting minutes are available on the city of Glendale website at www.glendaleaz.com.

Below is a list of city of Glendale water-related contacts.

Water Services Department: 623-930-4100 (General Information)
 Water Quality Laboratory: 623-930-3885 (Water Quality Information)
 Water Billing: 623-930-3190 (Water Billing)
 Conservation and Sustainable Living Office: 623-930-3596 (Water Conservation Programs)
www.glendaleaz.com

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2011 Water Quality Report



Frequently Asked Questions

How do I know that my water meets all water quality standards?

The U.S. Environmental Protection Agency (EPA) places strict limits on the amount of contaminants and impurities allowed in drinking water to ensure that your water is safe to drink. As your water provider, the city of Glendale is required to comply with federal Safe Drinking Water standards, which are administered by the EPA and the Arizona Department of Environmental Quality.

The city of Glendale uses modern treatment processes to reduce and/or eliminate the presence of potentially harmful substances in your drinking water. The city disinfects drinking water prior to delivery to your home to ensure the elimination of bacteria. The water is then monitored through an extensive sampling and water quality testing program.

Is bottled water better?

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 the water poses a health risk.

More information about contaminants and their potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791. Information on bottled water can be obtained from the FDA.

What is hard water?

Hardness is a measure of the presence of the minerals calcium and magnesium in water. As water moves through or over the earth, it picks up these minerals and causes the water to become hard. Hardness refers to the difficulty with which the water produces soapsuds, with successively harder water requiring more and more soap. The amount of hardness in the city of Glendale's drinking water is between 250 to 350 PPM or 15 to 20 grains per gallon. Hard water is not a health hazard. According to the National Research Council (National Academy of Sciences), hard water generally contributes a small amount toward total calcium and magnesium human dietary needs.

If I have health problems, how will drinking tap water affect me?

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. EPA and Centers for Disease Control 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).

Is it true that drinking water containing high nitrate levels is a health concern?

Nitrate in drinking water at levels above 10 parts per million poses a health risk for infants 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 due in part to rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

The nitrate level in Glendale's drinking water consistently meets safe drinking water requirements.

Is a home water treatment system necessary?

The use of a home water treatment system is a personal decision. Some people invest in home water treatment systems to enhance the taste of water and to further remove impurities. Home water treatment systems are not needed to make water safer. In fact, if not properly maintained, home water treatment systems may actually cause water quality problems that may affect your health.

All home water treatment devices, including refrigerated water dispensers and ice makers, need regular maintenance to operate effectively and safely. Follow the operating manual that comes with the home water treatment system to ensure that your system is properly maintained and operated in accordance with the manufacturer's directions. Filter cartridges should be changed on a regular basis as recommended by the manufacturer.

Does Glendale have enough water resources for a growing community?

Strategic investments in securing long-term and renewable water resources have allowed the city of Glendale to earn and maintain a designation of Assured Water Supply from the state of Arizona. The designation of Assured Water Supply ensures residents, businesses and investors that there are sufficient water resources for land being considered for purchase or lease within the city's water service area.

Glendale has a 100-year water supply for all existing and planned developments within the city's water service area, and is capable of building the necessary distribution and treatment facilities to deliver high quality water to a growing community.

Where does Glendale's water come from?

The city uses renewable water supplies from the Salt, Verde and Colorado rivers, and stored water credits that are earned through the city's recharge program. In addition, Glendale can pump a limited amount of groundwater when needed.

Runoff from the Salt/Verde River watershed is stored in a series of lakes operated by the Salt River Project. Runoff from the Colorado River is stored in Lake Mead, Lake Powell, and Lake Pleasant and delivered to Arizona through the Central Arizona Project (CAP) canal.

Tips & Guidelines

Water Tips

City Code prohibits draining your pool or spa water into city streets, alleyways and rights-of-way. When possible, use the water to irrigate your landscaping. For more information on how to legally drain and backwash your pool, go to: www.glendaleaz.com/WaterConservation/publications.cfm.

Need help with your landscaping? Several free how-to brochures are available to help you maintain an attractive low-water-use landscape. The brochures are available online at www.glendaleaz.com/waterconservation. Click on "free brochures".

Interested in reducing your water use? Look for the "Reduce Your Use" checklist at www.glendaleaz.com/waterconservation or call for a mailing of a "Managing Your Home Water Use" kit at 623-930-3535.

Cloudy Water – Cloudy water is usually caused by temperature change and the presence of dissolved air in the water. When water appears to have a milky white, gray, or carbonated appearance a simple test may suffice to denote its origin. Fill a clear glass with tap water and observe it over a minute or so. If the glass clears from bottom to top, then it is dissolved air escaping into the atmosphere. There is no health risk associated with this situation.

Chlorine Taste & Odor – Glendale has a long and successful history of water treatment using chlorine. Chlorine content throughout the city is checked daily to ensure the highest quality control. Without proper initial disinfection and continuing residual protection in the distribution system, the city's entire water distribution system would be vulnerable to bacteria. If the taste or odor is found to be objectionable, it should be noted that you could eliminate the taste of chlorine in your water by setting an open pitcher in your refrigerator overnight.

Musty Taste & Odor – Occasionally Glendale water may have an earthy, musty or fishy taste and odor. These seasonal phenomena can be caused by the bi-annual turnover of our lakes, or with the presence of varied algal blooms in the lakes or rivers. It is important to note this taste and odor poses no health concern. Advanced treatment techniques involving granular activated carbon are being used to continually improve the quality of our water.

Storm Water Pollution – Our yards are channels to our waterways. When it rains, a storm can wash fertilizers, herbicides, or pesticides from yards into the gutters and ultimately our waterways. Proper lawn care can reduce storm water runoff and help protect water quality. To minimize storm water pollution, use pesticides, herbicides, and fertilizers sparingly and do not apply just before, during or immediately after rainfall. Always read and follow the directions for use. For helpful tips for monitoring your impact to the storm water drains, visit www.glendaleaz.com/environmentalresources/stormwater.

Water Conservation – Cash for Unwanted Grass

The city of Glendale offers landscape rebate programs for homeowners, businesses, and homeowner associations to encourage low water-use landscaping. More than 4,000 homeowners have participated in the program. The program includes a free on-site consultation to discuss grass removal methods and provides information about desert adapted plants and proper watering. The rebate program includes the following:

- New homes can receive a \$200 rebate for installing a low water-use landscape.
- Existing homes can receive up to a \$750 rebate for converting grass to a low-water-use landscape.
- Homeowners Associations, multi-family units, and businesses can receive up to a \$3,000 rebate for converting grass to a low-water use landscape.

For more information on how to qualify for a rebate, call the city's Conservation and Sustainable Living Office at: 623-930-3760 or go to www.glendaleaz.com/waterconservation.

Air Quality

Reducing dust emissions in the Valley is important to protect air quality and public health. For information on air quality requirements and what you can do to help, visit www.glendaleaz.com/environmentalresources or the Maricopa County website at www.maricopa.gov/aq/divisions/compliance/dust.

Pollution Prevention

One quart of used oil can contaminate up to 150,000 gallons of water. Pouring used oil on the ground is illegal and may contaminate storm water and groundwater. You can recycle your used oil at participating auto parts stores and service facilities, or through Glendale's twice-a-year Household Hazardous Waste Collections. To find a location near you, go to www.earth911.com.

Grease Control Tips

When fats, oils and grease (FOG) are poured into drains, either in homes or businesses, it can cause costly sewer blockages and overflows that can damage homes, threaten the environment and cause health hazards. The easiest way to solve the problem of grease blockage is to keep grease out of the drains in the first place. Here are some disposal tips.

- Scrape food scraps into a can or the trash for disposal. Put baskets or strainers in sink drains to catch food scraps and other solids. Empty the drain baskets or strainers into the trash for disposal.
- Do not put grease down garbage disposals.
- For small amounts of oil or grease, soak it up with paper towels and dispose in the trash.
- For amounts ranging from a cup to a pint, pour the grease or oil into a container and freeze it. Put the frozen grease into the trash the day your trash is collected. Try to use a non-recyclable container if possible. If you have none available, a tin or steel can works well.
- For moderate amounts from a pint to a gallon, use cat litter to solidify the grease or oil. Put the cat litter in a double lined plastic bag and pour the grease into the bag. Be sure there is no free liquid before tying the bag shut.

Information & News

Safely Dispose of Unused Medications

You can help lessen the impact on the environment by disposing of unused medications in a responsible way by following these recommendations:

1. Do not put out-of-date or unused medications down the toilet or sink.
2. Ask if your pharmacy has a medication recycling program.
3. If they do not, dispose of the medication in the following manner:
 - Remove medication from its original containers (to reduce the risk of someone else using or reselling the medication).
 - Mix prescription medication with used coffee grounds or kitty litter and place them in a plastic bag.
 - Dispose of the plastic bags in the trash (this reduces the risk of accidental ingestion by children or pets).

Flushing unused medications and personal health care products down the sink or toilet introduces those chemicals into the environment. These products

mainly include:

- Prescription and over-the-counter medication
- Pet medication
- Cosmetics/fragrances
- Vitamins
- Sun-screen products

Awards

Water Services Department - The city of Glendale was awarded WESTMARC's prestigious Excellence in Innovation award for the Oasis Groundwater Treatment Plant at the 2011 Best of the West Awards event. The treatment plant is a state-of-the-art facility that provides high quality safe drinking water to the Glendale community by enhancing the overall reliability of Glendale's water services and supports economic growth and a sustainable community. As the largest facility of its kind west of the Mississippi, this 10 million-gallon-per-day facility, co-located with the Oasis surface water treatment plant, went online in 2011. The advanced ion exchange technology used at the Oasis Groundwater Treatment Plant allows for a cost-effective way to treat and process groundwater.

Excellence in Environmental Education - Glendale's Conservation and Sustainable Living Program was honored in September 2011 by Valley Forward with the Crescordia first place award for Excellence in Environmental Education and Communication. More than 130 entries were received in Arizona's oldest and most prestigious awards competition focusing exclusively on environmental initiatives. The Glendale Conservation and Sustainable Living programs educate residents, businesses and neighborhoods about good environmental practices, including water conservation and energy efficiency. Go to www.glendaleaz.com/green for more program information.



Glendale Water Services
Reliability • Quality • Value

Potential Impurities

The city of Glendale's raw water sources include rivers, lakes, reservoirs and wells. As water travels from these sources, it dissolves naturally occurring minerals and, in some cases, radioactive material. Water also can pick up substances remaining from the presence of animals or people. Substances that may be present include:

- Microbial contaminants, such as viruses and bacteria, which may come from agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring, or a result of storm water runoff, industrial or domestic wastewater discharges, mining or farming.
- Organic chemical contaminants, including synthetic and volatile organics which are byproducts of industrial processes. These also can come from gas stations, storm runoff and septic systems.
- Pesticides and herbicides, which may come from agriculture, storm water runoff and homes.
- Radioactive contaminants, which can be naturally occurring.

The city treats and processes the water to improve quality and has an extensive water testing program to ensure water quality. Glendale analyzed more than 14,000 water samples last year to ensure your water is safe and the environment is protected.

Source Water Assessment

The Arizona Department of Environmental Quality (ADEQ) conducted a source water assessment of the city of Glendale's surface water and groundwater sources. The assessment included an evaluation of land uses, such as gas stations, landfills, dry cleaners, agricultural fields, wastewater treatment plants, and mining activities that may pose a potential water quality risk to the city's water sources.

In order to ensure high quality water, the city treats the water received from all sources prior to delivery. The city of Glendale's top priority is to provide safe drinking water 24 hours a day, every day.

A copy of the preliminary source water assessment report is available for inspection at ADEQ, 1110 West Washington Street, Phoenix, Arizona 85007, between the hours of 8 a.m. and 5 p.m. Electronic copies are available from ADEQ at dml@azdeq.gov.

For more information, visit the ADEQ website at: www.azdeq.gov/environ/water/dw/swap.html or contact the city of Glendale's Water Services Department at 623-930-4100.

