2018 WATER QUALITY REPORT

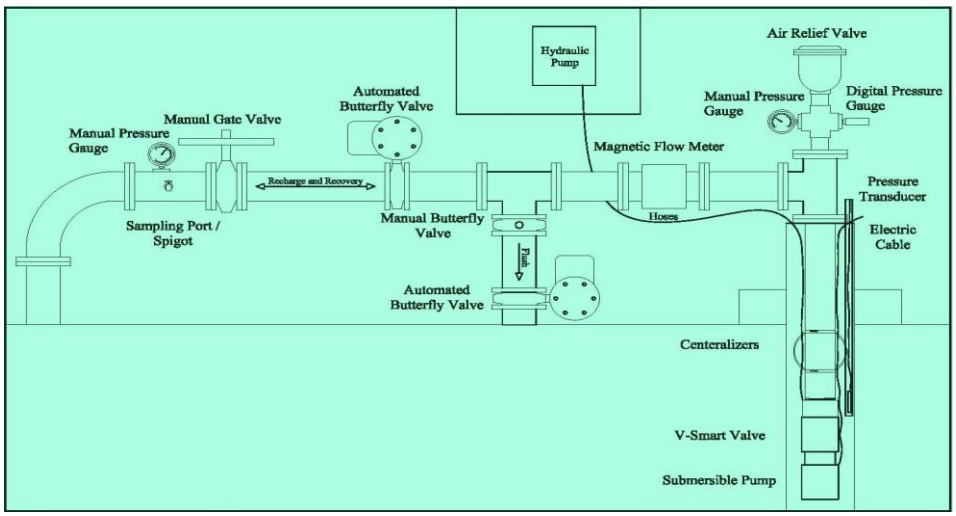
The water provided by the Town of Payson meets or surpasses all Federal and State drinking water quality standards.

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

The Town of Payson Water Department (Public Water System AZ04-04032) is a public water utility that supplies drinking water to approximately 17,000 customers within a 16 square mile area. The current water system includes 37 active production groundwater wells that draw water from an aquifer consisting of a series of complex random cracks and fractures in the granite rock beneath the town. The water distribution system has 8.6 million gallons storage capacity, 9 booster pumping stations, 1 water remediation facility and more than 190 miles of pipe lines. A staff of 20 full-time employees provides a variety of services for our customers. Nearing completion in 2019, The C.C. Cragin Reservoir project will more than double the average amount of water supply available to the Town of Payson. This project connects the Town of Payson to C.C. Cragin Reservoir on top of the Mogollon Rim.

C.C. Cragin Reservoir Project

The C.C. Cragin Reservoir Project consists of approximately 14 miles of new out-of-town and 5.6 miles of in-town 18-inch diameter Ductile Iron Pipeline and a new 4.5 million gallon per day microfiltration treatment plant. More information on the C.C. Cragin Project is available at http://www.paysonaz.gov/Departments/water/Cragin.html



Additional Underground Storage Wells

The Town of Payson is nearing construction completion of 8 Aquifer Storage and Recovery (ASR) Wells in Town for long term underground storage of treated C.C. Cragin Reservoir Water. This water will be stored during years with high precipitation and used for supply during extended drought conditions.

UNDERSTANDING WATER QUALITY RESULTS

The sources of drinking water (both tap 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.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of contaminants in water provided by public water systems. The Water Quality Table on Page 6 lists all of the drinking water contaminants that we detected during the calendar year. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Results listed in the table are from 2018, which presents the most recent information acquired. The EPA and the Arizona Department of Environmental Quality (ADEQ) require us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

The sample results are organized into two major tables:

1) The Primary Drinking Water Standards, which are limits established for regulated substances (either a Maximum Contaminant Level or Action Level), and
2) The Secondary Drinking Water Standards, which contain unregulated substances that public water systems are required to monitor, but that have no established regulatory limits.

FREQUENTLY ASKED QUESTIONS ABOUT WATER QUALITY:

What is the Hardness of Payson Water?

Groundwater is considered hard and the surface water is soft. The hardness is due to dissolved minerals primarily calcium and magnesium in the water. These minerals are not harmful, but can leave white spots on glassware and plumbing fixtures. The most recent testing of our active wells showed hardness in the range of 62 – 230 ppm (3.6 – 13. gpg).

C.C. Cragin's surface water is considered soft, with a median hardness of 28 ppm (1.6gpg). The town will buffer the water by adding minerals to stabilize the water and prevent corrosion.

How is our water treated?

Groundwater is treated by adding a small amount of Sodium Hypochlorite or Calcium Hypochlorite also known as chlorine to disinfect the water and prevent bacterial growth.

Surface water from C.C. Cragin Reservoir is treated by microfiltration and granular activated carbon. Next, lime and carbon dioxide are added to buffer the water and prevent corrosion, and finally, a small amount of chlorine is added to disinfect and prevent bacterial growth.

Does the Town of Payson add Fluoride to its Drinking Water?

No, the Town of Payson does not add fluoride to its drinking water. Fluoride is naturally occurring in Payson groundwater with an average concentration of 0.7 ppm. Testing of C.C. Cragin water showed levels of fluoride in the range of 0.042 ppm or less.

How is our water tested?

In order to ensure that tap water is safe to drink, the EPA and ADEQ prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

Water from each approved drinking water well is tested for several different types of contaminants, which include the following:

1. Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
2. Inorganic Contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
3. Pesticides and Herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
4. Organic Chemicals, including synthetic and volatile organics which are by-products of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, and septic systems.
5. Radioactive contaminates, that can be naturally occurring or be the result of oil and gas production or mining activities.

The Water Quality Table on Page 6 lists the quantities of substances that were detected in our water. None of the substances found in Payson's water exceed the Maximum Contamination Levels established by EPA for healthful water.

PROTECTING OUR WATER QUALITY

Health standards for drinking water are designed to detect and eliminate any unwanted substances long before they pose a threat to public health. If an unwanted contaminant is detected, the Town of Payson Water Department implements a strict set of established procedures to correct any problems immediately.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of contaminants. The presence of these 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 EPA's Safe Drinking Water Hotline (800) 426-4791.

What is a Vulnerable Population?

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 for infections. These people should seek advice about drinking water from their health care providers. EPA/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 (800)426-4791.

What is a Maximum Contaminant Level (MCL)?

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 technologies for treatment.

What is a Maximum Contaminant Level Goal (MCLG)?

The level of a substance in drinking water below which there is no known or anticipated adverse health effects. This level is a non-enforceable health goal which allows an adequate margin of safety.

What is an Action Level (AL)?

The concentration of a substance, which if exceeded, triggers treatment or other requirements which a water system must follow.

SOURCE WATER ASSESSMENT

On August 05, 2003, ADEQ staff published a Source Assessment document that provides detailed information on the Town of Payson's drinking water sources and the vulnerability of those sources to contamination. Based on currently available information, ADEQ determined that our source water is susceptible to possible future contamination.

The following list is shown as examples of potential sources of contamination. For further information or to request a copy of the final source water assessment report, contact the Payson Water Department at (928) 472-5109

PARAMETER	MAJOR POTENTIAL SOURCES OF DETECTED SUBSTANCES
Barium	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Copper	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
Fluoride	Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Gross Alpha	Erosion of natural deposits
Haloacetic Acids	Byproduct of drinking water chlorination.
Lead	Corrosion of household plumbing systems; Erosion of natural deposits
Nitrate	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Combined Radium	Erosion of natural deposits.
Tetrachloroethylene	Discharge from dry cleaners.
Total Trihalomethanes	By-product of drinking water chlorination.
Xylenes	Byproduct of Storage Reservoir Coating

INFORMATION STATEMENT ABOUT LEAD

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Payson is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting 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 water, you may wish to have your water 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 800-426-4791 or at www.epa/safewater/lead.

Nitrates in drinking water at levels above 10 ppm is a health risk for infants, which can cause blue baby syndrome.

Monitoring Violation:

Radionuclide Monitoring: All Community water systems are required to test at each Entry Point to the Distribution System to determine compliance with the maximum contaminant level for Gross Alpha, Combined Radium and Combined Uranium. During the 2010 – 2018 period, Entry Points 006, 018, 020, 022, and 026 were not tested for Combined Radium. The wells were tested for Gross Alpha in 2010 and all were below the maximum contamination level. 2010 was the first year ADEQ required analysis for Gross Alpha and combined Radium, In the past, the analysis of combined radium was only required if Gross Alpha results were >5 pCi/L. Recent testing (March 2019) of wells (EPDS 006, 018, 020, 022, and 026) for Gross Alpha and combined Radium proved all wells were below the maximum contamination level for Gross Alpha and combined radium (See analysis table on page 6).

Volatile Organic Chemicals (VOC): During the third quarter 2018 compliance period, Entry Points 018 and 022 were tested for VOCs but state forms were not submitted in a timely manner which resulted in a monitoring violation. The late data was received and entered into the ADEQ database.

The Town of Payson drinking water system is currently in full compliance with all EPA and ADEQ drinking water regulations.

WHAT CAN YOU DO TO HELP?

It's much easier and far less expensive to prevent a water pollution problem than it is to clean it up. You can help protect the quality of our drinking water by following these simple guidelines:

1) Use herbicides, insecticides and fertilizers sparingly.

2) Unused medicines and pharmaceutical/prescription products should be disposed of at the Police department drop box in lobby, (medicines will be incinerated).

3) Recycle old car batteries, used motor oil and other fluids.

4) Take hazardous household products, including solvents, paints and chemicals to a proper disposal center.

Go to http://www.paysonaz.gov/Departments/water/water-index.html click on "RECYLING LOCATIONS "
Recycling locations

FOR MORE INFORMATION ABOUT YOUR DRINKING WATER

The Town of Payson is committed to providing a safe and sufficient supply of drinking water for our community both now and in the future. If you have any questions about your drinking water, please call:
Gordon Dimbat, Water Quality & Treatment Manager gdimbat@paysonaz.gov (928) 472-5109.
Town of Payson's Web Site http://www.paysonaz.gov/
This report is available online at: http://www.paysonaz.gov/wqr-18.pdf
EPA's Safe Drinking Water Hotline (800) 426-4791 https://www.epa.gov/ground-water-and-drinking-water
Arizona Department of Environmental Quality (602)771-4617 ADEQ Water Quality Programs

A paper version of this report is available at the Town of Payson Water Department, 303 N. Beeline Highway, Bldg. A, or the Payson Public Library.

2018 Unregulated Contaminant Monitoring Rule 4 (UCMR4)

The 1996 Amendments to the Safe Drinking Water Act required the USEPA to establish criteria for a monitoring program for unregulated contaminants and to publish a list of contaminants to be monitored. EPA published the "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR 4) for Public Water Systems and Announcement of Public Meeting" on December 20, 2016 (81 FR 92666). UCMR 4 includes Assessment Monitoring for a total of 30 chemical contaminants including two metals, eight pesticides plus one pesticide manufacturing byproduct, three alcohols, and three semi volatile organic chemicals (SVOCs), as shown in the table below. UCMR 4 also requires Assessment.

Contaminant	Detected (Y/N)	MCL	MRL	Lowest Level	Highest Level	Average	
Bromide(ppm)	**Y**	**~**	**0.005**	**0.035**	**0.170**	**0.103**	
Germanium (ppb)	**Y**	**~**	**0. 3**	**0.00078**	**0.0012**	**0.00099**	
Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications							
Haloacetic Acids (HAA5) (ppb)	**Y**	**60**	**~**	**1.27**	**1.5**	**1.4**	
Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.							
HAA6Br (ppm)	**Y**	**~**	**~**	**2.13**	**4.33**	**3.23**	
HAA9 (ppm)	**Y**	**~**	**~**	**2.41**	**4.33**	**3.37**	
Manganese (ppb)	**Y**	**50***	**0.4**	**0.5**	**240**	**41.2**	
Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient *Secondary MCL							
Total Organic Carbon (mg/L)	**Y**		**TT**			**1.1**	
Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by products. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.							

WATER QUALITY ANALYSIS

PARAMETER	DATE	UNIT	MCL	MCLG	Town of Payson Drinking Water Sources Payson Groundwater	
PRIMARY DRINKING WATER STANDARDS - **Mandatory Health-Related Levels Established by EPA and ADEQ.**						
DISINFECTANT RESIDUALS - **20 Samples required each month for the entire water distribution system.**			MRDL	MRDLG	Running Annual Average	Range
Chlorine (Free)	2018	ppm	4	4	0.50	0.03 – 1.25
LEAD AND COPPER - **Compliance with Action Levels based on samples collected at source wells and thirty customer taps.**						
Lead Results - Homes	2016	ppb	15	0	90th Percentile = 4.7	1 Household >Action Level
Copper Results- Homes	2016	ppm	1.3	1.3	90th Percentile = 0.27	0 Households >Action Level
Lead Results- Sources	2016	ppb	~	~	Town-wide Source Level Range =<0.50 – 19.	
Copper Results-Sources	2016	ppm	~	~	Town-wide Source Level Range = 0.05 – 0.35	
RADIOCHEMICAL MONITORING					Average	Range
Gross Alpha	2019	pCi/l	15	0	3.2	2.3 – 4.7
Radium 226	2019	pCi/l	5	0	0.56	N.D. – 0.6
Radium 228	2019	pCi/l	5	0	0.7	N.D. – 0.7
Uranium	2019	pCi/l	30	0	2.86	0.4 – 4.5
REGULATED INORGANIC COMPOUNDS					Average	Range
Barium	2016	ppm	2	2	0.049	0.0043 -0.10
Fluoride	2016	ppm	4	4	0.67	N.D. – 1.9
Nitrate (as N)	2018	ppm	10	10	1.4	N.D. – 4.1
REGULATED ORGANIC COMPOUNDS					Average	Range
Tetrachloroethylene	2018	ppb	5	0	N.D.	N.D. – 0.61
DISINFECTION BYPRODUCT MONITORING					Average	Range
Total Trihalomethane (TTHM)	2018	ppb	80	N/A	6.8	4.6 – 9.0
Haloacetic Acids (HAA)	2018	ppb	60	N/A	1.4	N.D.-1.5
SECONDARY DRINKING WATER STANDARDS - **Aesthetic Levels Established by EPA and ADEQ.**						
UNREGULATED INORGANIC COMPOUNDS						Range
Alkalinity	2016	ppm	~	~		66 - 240
Calcium	2016	ppm	~	~		16 - 71
Chloride	2016	ppm	~	~		3.7 - 21
Hardness, Total	2016	ppm	~	~		62 - 230 (3.6 – 13.2 gpg)
Iron	2016	ppm	~	~		N.D. – 1.5
Magnesium	2016	ppm	~	~		5.4 - 22
Manganese	2016	ppm	~	~		N.D. - 0.15
pH	2016	SU	~	~		6.2-7.5
Sodium	2018	ppm	~	~		11 - 54
Sulfate	2016	ppm	~	~		5.8 - 15
Total Dissolved Solids	2016	ppm	~	~		170 - 330
Zinc	2016	ppm	~	~		N.D. – 0.063

KEY TO CHART

MCL	Maximum Contaminant Level	~	Limits are not set for these parameters	N.D.	Not Detected
MCLG	Maximum Contaminant Level Goal	Range	Low to high measurements reported during the year	N/A	Not Applicable
MFL	Million Fibers per liter	Pci/l	Pico Curies per liter, measurement for radiochemicals	ppm	Parts per million
(<)	Less than amount indicated	gpg	Grains per gallon (Water Softener Terminology)	ppb	Parts per billion
MRDL	Maximum Residual Disinfection Level	MRDLG	Maximum Residual Disinfection Level Goal	TT	Treatment Technique