City of Flagstaff

CONSUMER CONFIDENCE REPORT

Report Covers Calendar Year: January 1 – December 31, 2012

Este informe contiene información muy importante sobre el agua usted bebe. Tradúscalo ó hable con alguien que lo entienda bien.
Díí kwe'é naaltsoos hasht'eelyaayíí 'éí nit haz'ánígi tó baa 'áháyáá dóó yá'át'ééh óolzinígíí yaa halne'. Doo bik'i'dinit__hgóó da,
t'áá háida ta' níká'doolwot dóó hazhó'ó yee nit ch'íhodoo'áát.

Public Water System (PWS) Information

PWS Name:	City of Flagstaff Municipal Water System / PWS ID# AZ 0403-008				
Owner / Operator Name:	Brad Hill, Utilities Director				
Telephone #	(928) 213-2420	Fax #	(928) 556-1223	E-mail	water@flagstaffaz.gov

We want our valued customers to be informed about their water quality. If you would like to learn more about public participation or to attend any of our regularly scheduled meetings, please contact the Utilities Department at (928) 213-2400. Flagstaff Water Commission meetings are held the third Thursday of each month. Meeting locations are posted on the official City bulletin board at City Hall, 211 W. Aspen Ave., Flagstaff.

Drinking Water Sources

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. In 2012 the Utilities Division distributed approximately 8,295 acre-feet (or ~2.7 billion gallons) of drinking quality water at an average of 7.41 million gallons per day. Total water production was approximately the same for 2012 as it was in 2011. The City of Flagstaff's water supply is from surface water (i.e., from Upper Lake Mary and the Inner Basin) and groundwater (i.e., from Woody Mountain, Lake Mary and the Local well fields). Groundwater wells tap the Coconino Aquifer. These sources of water are blended in the water distribution system and the amount coming from each varies throughout the year.

Drinking Water Contaminants

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. 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. The presence of contaminants does not necessarily indicate that water poses a health risk. Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife. Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides 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, are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants can be naturally occurring or be the result of oil and gas production and mining activities. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline 1-800- 426-4791.

Vulnerable Population

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. 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 of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbiological contaminants call the EPA *Safe Drinking Water Hotline* 1-800-426-4791.

Source Water Assessment

Based on the information currently available on the hydrogeologic settings and the adjacent land uses that are in the specified proximity of the drinking water sources of this public water system, the Arizona Department of Environmental Quality (ADEQ) has given a low risk designation for the degree to which this public water system drinking water sources are protected. A low risk designation indicates that most source water protection measures are either already implemented or the hydrogeology is such that the source water protection measures will have little impact on protection.

Health Effects Language

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, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

While your drinking water meets EPA's standard for **arsenic**, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. 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 effects such as skin damage and circulatory problems.

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 City of Flagstaff 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 at 1-800-426-4791 or at www.epa.gov/safewater/lead.

Violations

There were no violations of the Safe Drinking Water Act (SDWA) in 2012.The Arizona Department of Environmental Quality and the Flagstaff Municipal Water System work together to ensure that your drinking water meets all the monitoring requirements mandated by the SDWA. The Flagstaff Municipal Water System conducted over 1180 water quality sampling events in 2012.

Definitions

AL = Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
MCL = Maximum Contaminant Level - The "Maximum Allowed" 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 = Maximum Contaminant Level Goal - The "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 = Maximum Residual Disinfectant Level - The highest level of a disinfection 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.
NA = Not Applicable, sampling was not completed by regulation or was not required.
ND = Non detectable level.
NTU = Nephelometric Turbidity Units, a measure of water clarity.
pCi/L = Picocuries per liter - picocuries per liter is a measure of the radioactivity in water.
pH = Potential Hydrogen - A measure of the acidity or basicity of an aqueous solution. Pure water is neutral, with a pH close to 7.0. Water with a pH less than 7 is said to be acidic and water with a pH greater than 7 is basic or alkaline.
PPM = Parts per million or Milligrams per liter (mg/L). ppm x 1000 = ppb
PPB = Parts per billion or Micrograms per liter (µg/L). ppb x 1000 = ppt
PPT = Parts per trillion or Nanograms per liter. ppt x 1000 = ppq
PPQ = Parts per quadrillion or Picograms per liter.
SDWA = Safe Drinking Water Act.
TDS = Total Dissolved Solids - A measure of the combined content of all inorganic and organic substances contained in a liquid in molecular, ionized or suspended form. The most common chemical constituents are calcium, phosphates, nitrates, sodium, potassium and chloride, which are found in nutrient runoff from general storm water.
µS/cm= microsiemens per centimeter - One unit of measurement for TDS is a microsiemens. TDS is measured in microsiemens per centimeter (µS/cm). Distilled water has a TDS in the range of 0.5 to 3 µS/cm. The TDS of rivers in the United States generally ranges from 50 to 1,500 µmhos/cm.
TT = Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.

Long Term (LT) 2 Enhanced Surface Water Treatment Rule

City of Flagstaff monitoring for this regulation found no detectable presence of *Cryptosporidium*. If *Cryptosporidium* is found at greater than 0.075 oocyst per liter, then additional treatment would be required. *Cryptosporidium* may cause serious illness in 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. These people should seek advice from their health care providers.

Water Quality Data

Microbiological	Violation Y or N	Number of present results	Number of absent results	MCL	MCLG	Sample Year	Likely Source of Contamination
Total Coliform Bacteria. >70 samples/month taken. >5% samples /month positive is MCL	N	0	840	5%	0	840/year	Naturally Present in Environment
Fecal coliform and E. Coli (TC Rule)	N	0	840	0	0	840/year	Human and animal fecal waste
Turbidity (NTU) – continuous monitoring. A value less than 95% is a violation. 100% of the samples in 2011 were below the TT value of 0.3 NTU.							Soil runoff

Disinfectants	Violation Y or N	Range		MCL	MCLG	Sample Month & Year	Likely Source of Contamination
		Low	High				
Chlorine (as Cl2) (ppm)	N	0.16	1.22	MRDL = 4	MRDLG = 4	840/year	Water additive used to control microbes
Chloride dioxide (ppb)	N	ND	138	MRDL = 800	MRDLG = 800	As needed per SDWA	Water additive used to control microbes

Stage 2 Disinfectants and Disinfection By-Products Rule (D/DBP)

Stage 2 D/DBP Rule required some systems to complete an Initial Distribution System Evaluation (IDSE) to characterize D/DBP levels in their distribution systems and identify locations to monitor D/DBPs for Stage 2 D/DBP Rule compliance. The following table summarizes the individual sample results for the IDSE standard monitoring performed in 2012.

Disinfection By-Products	Violation Y or N	Lowest Level Detected	Highest Level Detected	MCL	MCLG	Sample Year	Likely Source of Contamination
Haloacetic Acids (ppb)	N	<10	55	60	NA	2012	Byproduct of drinking water disinfection
Total Trihalomethanes (ppb)	N	<20	67	80	NA	2012	
Chlorite (ppm)	N	<0.10	0.138	1.0	0.8	2012	
Lead & Copper	**Violation Y or N**	**90th % / Samples over the AL (SAL)**	**Range of All Samples (L-H)**	**AL**	**ALG**	**Sample Year**	**Likely Source of Contamination**
Copper (ppm)	N	90%= 0.24 SAL= 4	Low= 0.02 High= 0.55	AL = 1.3	ALG = 1.3	2011	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	N	90%= 2.0 SAL= 4	Low= <5 High= 2.4	AL = 15	0	2011	
Radionuclides	**Violation Y or N**	**Lowest Level Detected**	**Highest Level Detected**	**MCL**	**MCLG**	**Sample Month & Year**	**Likely Source of Contamination**
Combined Radium 226 & 228 (pCi/L)	N	<0.3	0.5	5	0	2012	Erosion of natural deposits
Uranium (ppb)	N	1.5	2.8	30	0	2012	
Alpha emitters (pCi/L)	N	5.6	1.7	15	0	2012	
Inorganic Chemicals (IOC)	**Violation Y or N**	**Lowest Level Detected**	**Highest Level Detected**	**MCL**	**MCLG**	**Sample Year**	**Likely Source of Contamination**
Arsenic (ppb)	N	1.0	7.0	10	0	2012	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Fluoride (ppm)	N	0.06	0.14	4	4	2012	
Barium (ppm)	N	0.04	1.1	2	2	2012	Discharge of drilling wastes; discharge from metal refineries; Natural erosion.
Chromium (ppb)	N	ND	2.9	100	100	2012	Discharge from steel and pulp mills; Natural erosion.
Nitrate (ppm)	N	0.14	1.5	10	10	2012	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	N	4.3	11	250	250	2012	Erosion of natural deposits.
TDS (microsiemens)	N	268	373	NA	NA	2012	
pH	N	7.70	8.20	NA	NA	2012	