

Annual
WATER
QUALITY
REPORT

Reporting Year 2013



Presented By



City of YUMA
"Making Yuma Better!"

PWS ID#: AZ0414024

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

To Our Valued Water Customers:

The City of Yuma Utilities Department is proud to provide you with our 2013 Annual Water Quality Report. This report covers all testing performed between January 1, 2013, and December 31, 2013. Under the requirements of the Federal Safe Drinking Water Act the City of Yuma monitors and tests the water delivered from our source (the Colorado River) to your tap to ensure the water meets all regulatory and health standards. Each year the Department conducts hundreds of water quality samples and conducts tests to detect more than 80 different kinds of contaminants. Once again, the City of Yuma's water supply met or exceeded all federal and state drinking water standards. Please take a moment to review this important information about your drinking water. I welcome and encourage you to share with either myself or my staff any comments, questions or concerns you have about the information presented in this report. We are always here to provide answers to your questions. Thank you.

Sincerely,

Jay Simonton, M.P.A.

Utilities Director

Where Does My Water Come From?

The main source of Yuma's drinking water is surface water from the Colorado River, which is delivered to the Treatment Facilities via the canal systems. The Main Street Treatment Facility is a conventional surface water treatment plant. The Agua Viva Water Treatment Facility presently treats surface water and ground water. Water drawn from a well is ground water.

Source Water Assessment

In 2004, the Arizona Department of Environmental Quality (ADEQ) completed a source water assessment for the Yuma Main Canal, "A" Main Canal, and groundwater wells used by the City of Yuma. The Assessment reviewed the adjacent land uses that may pose a potential risk to the sources. The result of the assessment was adjacent land use with low risk to all source water. For a complete copy of the Assessment contact dml@azdeq.gov or call (602) 771-4641 or visit the ADEQ's Source Water Assessment and Protection Unit website at: www.azdeq.gov/enviro/water/dw/swap.html.

Substances That Could Be in Water

To ensure that tap water is safe to drink, Arizona Department of Environmental Quality 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. 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 dissolves naturally occurring minerals, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Contaminants 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.

More information about contaminants in tap water and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791 or visit online at www.epa.gov/safewater/hotline. Information on bottled water can be obtained from the U.S. Food and Drug Administration.

Treatment Train Description

City of Yuma Main Street Water Treatment Facility uses a series of conventional water treatment methods. First, raw water is drawn from our water source and is pretreated with either chlorine gas or chlorine dioxide. Treatment chemicals are added which include alum and polymer. The addition of these substances cause small particles to adhere to one another (called “floc”) making them heavy enough to settle into a basin from which sediment is removed. The treated water then flows from the sedimentation basins to the dual media sand/anthracite filters. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Finally, fluoride is added to prevent tooth decay, and chlorine is added again as a precaution against any bacteria that may still be present prior to distribution in the water system.

The Agua Viva Water Treatment Facility treats both ground water and surface water.

The Agua Viva Water Treatment Facility uses a series of local wells to provide water for the ground water treatment process. After the water is extracted from the wells iron and manganese are removed by a highly absorptive catalytic media. After iron and manganese removal the treated groundwater will enter into storage vessels prior to disinfection and before being distributed in the water system.



Membrane Filter Display

The surface water treatment process uses an advance membrane treatment technology. First, raw water is pretreated by screening water through a 500-micron screen and adding alum to coagulate particles. Then the water is sent to the membrane filtration system. The membranes are hollow polymer fibers with billions of microscopic pores on the surface. The pores are much smaller in size than common contaminants, bacteria, and viruses. The physical barrier only allows clean water to pass through while rejecting impurities. A slight vacuum is all that is required to draw water into the membrane fiber and filter out the impurities. After the water passes through the membranes, treated surface water will receive a dose of fluoride which is administered to prevent tooth decay. Finally the water will enter into storage vessels prior to disinfection and before being distributed in the water system.

The Agua Viva Water Treatment Facility may use surface water, ground water, or a blend of both prior to distribution in the water system.



Water from the sedimentation basin flows over a weir



View of the housing deck for the membrane filters and vacuum system

Important 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. The U.S. 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 at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

QUESTIONS?

If you have any questions about this report or the quality of our drinking water, please contact Betsy Bowman, Laboratory Director, at the Utility Treatment Laboratory, (928) 329-2893.

E-mail address: Betsy.Bowman@yumaaz.gov

City of Yuma Home Page: www.yumaaz.gov

Laboratory Direct Web Page: www.yumaaz.gov/7666.htm

Environmental Protection Agency: (800) 426-4791

Arizona Department of Environmental Quality: (800) 234-5677

You're Invited to Participate in Yuma's Water Quality Future

The City of Yuma's Water and Sewer Commission is a group of citizens developing ideas and providing advice to the Utilities Director on a range of water and wastewater issues. Our Water and Sewer Commission meets on-call at 5:00 p.m. in the Department of Public Works Administrative Conference Room. The public is invited. You can contact the Utilities Department at (928) 373-4500 for more information regarding meeting dates.

Waiver

The City of Yuma was granted a waiver from the Enhanced Coagulation and Enhanced Softening rules on July 2, 2002, by the Arizona Department of Environmental Quality. The waiver was based on two years of research performed on City of Yuma water. The data confirmed that the Colorado River water at Yuma is not amenable to the requirements of the rule. The waiver remains in effect as long as the running annual average for Total Trihalomethanes (TTHMs) remains below 0.064 mg/L and Haloacetic Acids (HAA5) remains below 0.048 mg/L.

Variances and Exemptions are ADEQ or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Lead in Home Plumbing

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. We are 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 or at www.epa.gov/safewater/lead.

Sampling Results

In 2013, the City of Yuma conducted all water quality testing required by state and federal regulations plus many more tests than regulations required. Testing revealed the city's drinking water quality met all regulatory standards set to safeguard public health. The data tables present 2013 results and corresponding water quality standards.

The state requires us to monitor for certain substance less than once per year because the concentrations of substances do not change frequently. In those cases the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water for 30 unregulated contaminants. UCMR3 benefits the environment and public health by providing EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Any UCMR3 detections are shown in the data tables in this report. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Main Street Treatment Facility		City of Yuma Distribution System		Agua Viva Treatment Facility		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Alpha Emitters (pCi/L)	2011	15	0	1.3	NA	NA	NA	ND	NA	No	Erosion of natural deposits
Arsenic (ppb)	2013	10	0	1.9	NA	NA	NA	1.8	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2013	2	2	0.11	NA	NA	NA	0.099	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2013	[4]	[4]	NA	NA	1.10	0.03–1.10	NA	NA	No	Water additive used to control microbes
Fluoride (ppm)	2013	4	4	0.36	NA	NA	NA	0.36	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids–Stage 2 (ppb)	2013	60	NA	NA	NA	13	7.6–21	NA	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2013	10	10	0.3	ND–0.3	NA	NA	0.26	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes]–Stage 2 (ppb)	2013	80	NA	NA	NA	63	21–110	NA	NA	No	By-product of drinking water disinfection
Total Coliform Bacteria (% positive samples)	2013	5% of monthly samples are positive	0	NA	NA	0.32	NA	NA	NA	No	Naturally present in the environment
Turbidity ¹ (NTU)	2013	TT	NA	0.091	0.029–0.091	NA	NA	0.039	0.014–0.039	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2013	TT=95% of samples <0.3 NTU	NA	100	NA	NA	NA	100	NA	No	Soil runoff
Uranium (ppb)	2011	30	0	2.8	NA	NA	NA	5.8	NA	No	Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2012	1.3	1.3	0.068	0/100	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2012	15	0	0.62	0/100	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES

		Main Street Treatment Facility		Agua Viva Treatment Facility			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE	
Sodium (ppm)	2013	120	NA	130	NA	Naturally present in the environment	

UNREGULATED CONTAMINANT MONITORING REGULATION (UCMR3)

		Main Street Treatment Facility		Agua Viva Treatment Facility		Main Street Maximum Resident Sample Site		Agua Viva Maximum Resident Sample Site	
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Bromochloromethane (ppb)	2013	0.23	0.075–0.23	NA	NA	NA	NA	NA	NA
Chlorate (ppb)	2013	60	<20–60	400	210–400	120	78–120	390	220–390
Chromium (total) (ppb)	2013	NA	NA	0.23	<0.2–0.23	NA	NA	NA	NA
Chromium-6 ² (ppb)	2013	NA	NA	0.032	<0.03–0.032	NA	NA	0.033	<0.03–0.033
Molybdenum (ppb)	2013	10	5.2–10	5	4.6–5	5.6	4.7–5.6	5.7	4.6–5.7
Strontium (ppb)	2013	2,100	1,100–2,100	1,100	980–1,100	1,200	1,000–1,200	1,200	950–1,200
Vanadium (ppb)	2013	3.6	2.7–3.6	2.8	2.2–2.8	2.7	1.8–2.7	2.7	2.1–2.7

¹Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

²Total chromium was nondetectable.

Definitions

AL (Action level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a community water system shall follow.

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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

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).

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