

CITY OF ANN ARBOR 2016

water

QUALITY REPORT

Image of Barton Dam by
Farzin Montazersadgh



Safe • Reliable • Affordable

Quality drinking water is an essential resource. The good news is that your tap water is top quality! Our water meets or exceeds all State and Federal health standards.

WHAT'S INSIDE

Page 2.....A Message to Our Customers

Page 3.....About This Report

Pages 4-6.....Water Quality Data

Page 8.....Kid's Page

Published March 2017
a2gov.org/A2H2O

A MESSAGE TO OUR CUSTOMERS

DEAR CUSTOMERS,

We, at the City of Ann Arbor Water Treatment Services Unit, are pleased to share with you our annual drinking water quality report. The U.S. Environmental Protection Agency (EPA) and Michigan Department of Environmental Quality (MDEQ) require that all water supplies produce an annual report that informs its customers about the quality of their drinking water. **This report explains where your drinking water comes from, what is in it and how we keep it safe.**

A significant part of keeping drinking water safe and reliable is our commitment to reinvest in our water infrastructure, like pipes, pumps, and the technology that treats our water. In 2016, I was fortunate to serve on Governor Snyder's 21st Century Infrastructure Commission. A key recommendation from the Commission was that utilities must demonstrate a commitment to **reinvesting in infrastructure at a rate that is affordable, sustainable and ensures use for future generations.** With much of Ann Arbor's infrastructure constructed over 50 years ago, our investment needs are significant, and our plans for the future reflect this need. These plans include replacing water pipes in areas where we see more breaks and where we have water quality problems, as well as replacing parts of the Water Treatment Plant that date back to 1938. Following the commission's recommendations, these reinvestments will be made while keeping water rates affordable and competitive with our neighboring communities.

There are some exciting things that I would like to share with you; first, our drinking water won the title of **Best Tasting Water in Michigan**, an



Best Tasting Water in Michigan 2016 Trophy



annual award given by the American Water Works Association, which we also won in 1996. While it was an honor to be recognized for the taste of our water, this award also illustrates the high quality of our water and the hard work that goes into producing it. With over 140,000 water quality tests performed every year, our staff work to ensure safe, reliable water is delivered to your tap every day.

Second, you may have noticed the newly painted artwork on our Manchester Road water tower in southeast Ann Arbor. Over 3,000 people shared their voice to help select the design as part of the "Art in the Sky" contest. The winning artwork, Birds of the Huron, was voted Tnemec's "Tank of the Year" for 2016; selected from over 200 tanks painted in the United States and is featured in their 2017 calendar.

We are proud to have received these accolades in 2016. In 2017, we will continue to strive to meet your expectations, and welcome your feedback on our services. If you have the opportunity, please contact us for a group tour or attend our annual open house on May 6, 2017, which is free to the public. These are great opportunities to learn more about your drinking water.

If you have questions about this report or water quality in the City of Ann Arbor, please contact us at (734) 994-2840, email us at water@a2gov.org or visit us on the web at www.a2gov.org/departments/water-treatment.

Sincerely,

Brian Steglitz, PE
Manager of Water Treatment Services



ABOUT THIS REPORT

Your Drinking Water Quality

In the following pages, you will find an overview of the required and voluntary water testing programs that protect our drinking water system. 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. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. 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 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 at (800) 426-4791.

How Do Drinking Water Sources Become Polluted?

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 and, in some cases, radioactive material, and can pick up 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, and wildlife.
- Inorganic contaminants, such as salts and metals, which 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, 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 can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

SOURCE WATER ASSESSMENT PROGRAM

All sources of drinking water may be susceptible to contamination. Federal regulations require states to develop and implement Source Water Assessment Programs (SWAP) to compile information about any potential sources of contamination to their source water supplies. This information allows us to better protect our drinking water sources. In 2004, the MDEQ performed a Source Water Assessment on our system. To obtain a copy of the assessment, request one by calling (734) 994-2840.

Where does my water come from?

The City of Ann Arbor's source water is comprised of both surface and ground water sources. About 85% of the water supply comes from the Huron River with the remaining 15% provided by multiple wells. The water from both sources is blended at the Water Treatment Plant.




Photo of Barton Pond by Greg Croasdill

WATER QUALITY DATA

We routinely monitor for contaminants in your drinking water according to federal and state standards. Many more parameters were tested, but not detected, and are not included in this report. This report includes information on all regulated drinking water parameters detected during calendar year 2016. We are required to monitor for certain contaminants less than once per year because the concentration of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, even if more than one year old.

REGULATED CONTAMINANTS THAT WERE DETECTED

Parameter Detected	Your Water Results		Regulatory Requirements		Likely Source
	Highest Level Detected	Results Range	EPA LIMIT MCL, TT, or MRDL	EPA GOAL MCLG or MRDLG	
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors					
Bromate	6.3 ppb ¹	1.8 – 8.6 ppb	10	0	Byproduct of ozone disinfection
Chloramines ³	2.4 ppm ¹	0.07 – 3.9 ppm	MRDL: 4	MRDLG: 4	Disinfectant added at Water Plant
Haloacetic Acids (HAA5) ³	5.6 ppb ²	1.5 – 9.1 ppb	60	N/A	Byproduct of disinfection
Total Organic Carbon (TOC)	55% removed ¹	45 – 62% removed	TT: 25% minimum removal	N/A	Naturally present in the environment
Total Trihalomethanes (TTHM) ³	3.5 ppb ²	0.6 – 5.9 ppb	80	N/A	Byproduct of disinfection
Radiochemical Contaminants (tested in 2014)					
Radium 226 and 228	2.21 ±0.87 pCi/L	N/A	5	0	Erosion of natural deposits
Inorganic Contaminants					
Barium	19 ppb	N/A	2000	2000	Erosion of natural deposits
Chromium (total)	<0.9 ppb	N/A	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	0.86 ppm	0.13 – 0.86 ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth
Nitrate	0.9 ppm	0.4 – 0.9 ppm	10	10	Runoff from fertilizer use; leaching from septic tanks and sewage
Nitrite	0.012 ppm	ND – 0.022 ppm	1	1	Runoff from fertilizer use; leaching from septic tanks and sewage
Microbiological Contaminants					
Total Coliform ³	2 positives out of 127 tested in Dec.	0 – 1.6%	TT: ≤ 5% positive per month	N/A	Naturally present in the environment
Turbidity	0.24 NTU	100% of samples ≤0.3 NTU	1 NTU and 95% of samples ≤0.3 NTU	N/A	Naturally present in the environment

¹ highest running annual average

² highest locational running annual average

³ measured in the distribution system

Have we met all of our requirements?

Your water met all EPA and MDEQ drinking water health standards in 2016. In November 2016, a cryptosporidium source water sample was collected during the required sampling period and due to an error, a duplicate sample was not collected at the same time, which caused a monitoring violation. At no time was the quality of drinking water affected. Immediately after this missed sample was noticed, the City collected a replacement, along with the required duplicate sample, thus completing the monitoring requirement. Although this was not an emergency, we are required to notify customers and we have put in place measures to prevent this error from recurring.

WATER QUALITY DATA

2014 LEAD AND COPPER RESULTS FROM CUSTOMER FAUCETS

Parameter Detected	Your Water Results		Regulatory Requirements		Likely Source
	90% of samples ≤ this level	Number of sites above Action Level	Action Level	MCLG	
Lead	2 ppb	0 out of 52	15	0	Corrosion of household plumbing
Copper	70 ppb	0 out of 52	1300	1300	Corrosion of household plumbing

Every three years the City of Ann Arbor is required to sample 50 homes throughout the distribution system to test for lead and copper. We will be conducting this testing again in 2017.

CONTAMINANTS OF CONCERN

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 City of Ann Arbor 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 for the Safe Drinking Water Hotline at 1-800-426-4791 or on the USEPA Web site (<http://water.epa.gov/drink/info/lead/index.cfm>)



Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We

encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

1,4-Dioxane

Groundwater in parts of Washtenaw County, including some areas under the city of Ann Arbor and Ann Arbor and Scio townships, is polluted with the industrial solvent 1,4-dioxane due to Gelman Sciences', now Pall Life

Sciences (PLS), improper disposal of wastewater containing the chemical between 1966 and 1986. As a result of their actions, the chemical seeped through soil and rock layers into the groundwater and has since spread. It is important to note, however, that Ann Arbor's drinking water is safe. To date, no 1,4-Dioxane has ever been detected in the municipal drinking water supply.

To date, no 1,4 – Dioxane has ever been detected in the municipal drinking supply

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source water, but not in the finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease.

SPECIAL MONITORING AND OTHER PARAMETERS OF INTEREST

2016 SPECIAL MONITORING

Parameter Detected	Units	Your Water Results		Likely Source
		Average level detected	Range	
1,4-dioxane	ppb	<0.07	N/A	Groundwater contamination from manufacturing process and landfills
N-Nitrosodimethylamine (NDMA)	ppb	0.0029	N/A	Byproduct of disinfection
Perchlorate	ppb	0.09	N/A	Nitrate fertilizer runoff; contamination from industrial manufacturing process
Sodium	ppm	60	56 – 63	Erosion of natural deposits; road salt and water softeners

OTHER WATER QUALITY PARAMETERS OF INTEREST

Parameter Detected	Units	Your Water Results		Parameter Detected	Units	Your Water Results	
		Average level detected	Range			Average level detected	Range
Alkalinity, total	ppm as CaCO ₃	55	33 – 125	Magnesium	ppm	25	10 – 39
Aluminum	ppm	0.012	N/A	Manganese	ppb	<2.0	N/A
Ammonia as N	ppm	0.11	<0.10 – 0.19	Mercury	ppb	<0.1	N/A
Arsenic	ppb	<1.0	N/A	Non-Carbonate Hardness	ppm	83	30 – 132
Calcium	ppm	36	24 – 70	pH	S.U.	9.3	8.9 – 9.4
Chloride	ppm	124	94 – 154	Phosphorus, total	ppm	0.21	0.10 – 0.35
Conductivity	µmhos/cm	631	545 – 757	Potassium	ppm	3.6	N/A
Hardness (calcium carbonate)	ppm	137	101 – 210	Sulfate	ppm	56	45 – 71
	gpg	8.0	5.9 – 12.3	Temperature	° Celsius	15.8	6.7 – 25.5
Iron	ppm	<0.1	N/A	Total solids	ppm	401	328 – 507
Lead	ppb	<1.0	N/A	Zinc	ppb	<1.0	N/A

This table contains both regulated and unregulated contaminants. Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

Do I need to take any special precautions?

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/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) 426-4791.

LEARN MORE

Get involved!

We invite public participation in decisions that affect drinking water quality. Attend a City Council meeting if you would like to learn more about issues affecting our community.

City Council meets at 7:00 p.m. on the 1st and 3rd Monday of every month in the City Hall Council Chamber, 2nd floor of Larcom City Hall, 301 E. Huron Street.

Come visit us!

If you have the opportunity, please contact us for a group tour or attend our annual open house on May 6, 2017, which is free to the public. These are great opportunities to learn more about your drinking water.



Eddie the Water Drop at the 2016 Open House

Printed copies available

Please share this report with all people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand and mail. To receive a printed copy of this report, please call (734) 994-2840.

Abbreviations and Definitions

Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.

CaCO₃: Calcium carbonate

gpg (Grains per Gallon): A unit of water hardness defined as 1 grain (64.8 milligrams) of calcium carbonate dissolved in one US gallon of water (3.785 L). This is a term often used by appliance manufacturers.

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.

N/A: Not Applicable

ND: Not detected at or above the minimum reporting level - laboratory analysis indicates that the constituent is not present.

NTU (Nephelometric Turbidity Units): Turbidity 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.

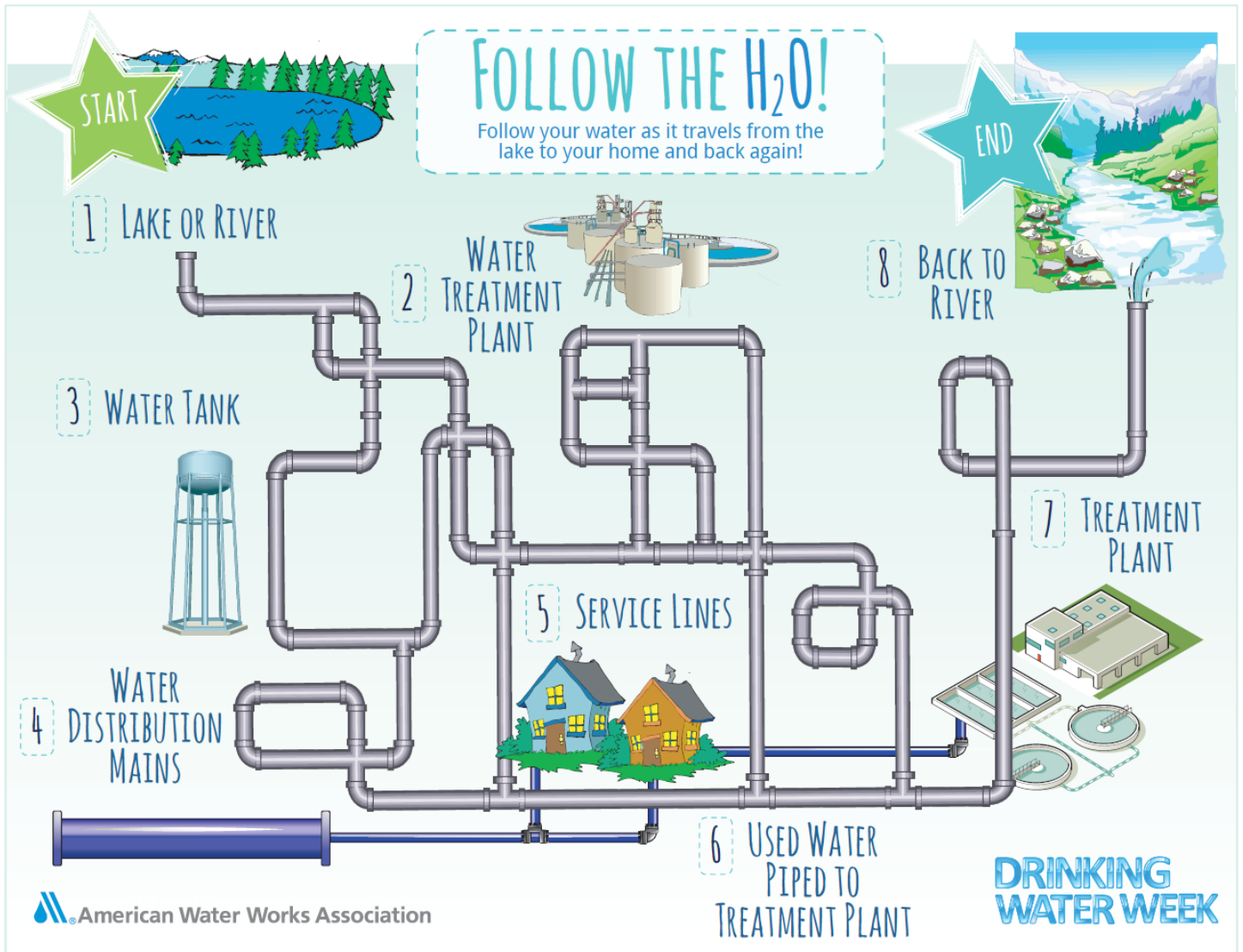
pCi/L: picocuries per liter (a measure of radioactivity).

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

ppm (1 part per million) or mg/L (milligrams per liter): corresponds to one minute in two years or a single penny in \$10,000. 1 ppm = 1000 ppb.

ppb (1 part per billion) or µg/L (micrograms per liter): corresponds to one minute in 2,000 years, or a single penny in \$10,000,000

KIDS PAGE



Drinking Water Week May 7-13, 2017

YOUR WATER

to know it is to love it