



2014 Annual WATER QUALITY REPORT

Published March 2015

FROM SOURCE TO TAP

The City of Ann Arbor is once again proud to share our annual drinking water quality report, which documents that our water supply **continues to meet or exceed** state and federal drinking water regulations.

What's in your tap water besides water?

This report will tell you where your water comes from, what's in it, and how to keep our water supply safe. Take some time to read it through, because when it comes to understanding your drinking water, the most important ingredient is *you!*

Did we meet all monitoring requirements in 2014?

We have continued to meet the challenge of providing you with a safe and dependable supply of quality drinking water which meets or exceeds the requirements set forth by the Environmental Protection Agency (EPA) and the Michigan Department of Environmental Quality (MDEQ).

Share this report!

Paper copies of this report are available at City Hall, City library branches, and at the Water Treatment Plant. If you would like a copy mailed to you, call us at (734) 794-6426 and request a copy. Electronic copies can be found online at www.a2gov.org/A2H2O.

Your views are welcome!

Attend a City Council meeting if you would like to learn more about issues affecting your 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 the Guy C. Larcom, Jr. Municipal Building, 301 E. Huron Street.

City of Ann Arbor

A²H₂O



Only Tap Water
DeliversSM

www.a2gov.org/A2H2O



Now It Comes With A List of Ingredients!

During the past year, we have taken thousands of water samples. This report includes information on all regulated drinking water parameters detected during calendar year 2014. Many more parameters were tested, but not detected, and are not included in this report.

REGULATED CONTAMINANTS THAT WERE DETECTED

Detected Contaminants	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	4.6 ppb ¹	ND – 6.6 ppb	10	0	Byproduct of ozone disinfection
Chloramines ³	2.5 ppm ¹	0.1 – 3.5 ppm	MRDL: 4	MRDLG: 4	Disinfectant added at Water Plant
Haloacetic Acids (HAA5) ³	5.2 ppb ²	2.0 – 6.4 ppb	60	N/A	Byproduct of disinfection
Total Organic Carbon (TOC)	55% removed ¹	50 – 60% removed	TT: 27% minimum removal	N/A	Naturally present in the environment
Total Trihalomethanes (TTHM) ³	4.1 ppb ²	1.0 – 6.5 ppb	80	N/A	Byproduct of disinfection
Radioactive 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	15 ppb	N/A	2000	2000	Erosion of natural deposits
Chromium (total)	0.44 ppb	ND – 0.44 ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	0.99 ppm	0.12 – 0.99 ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth
Nitrate	0.5 ppm	0.4 – 0.5 ppm	10	10	Runoff from fertilizer use; leaching from septic tanks and sewage
Microbiological Contaminants					
Total Coliform ³	0.9% in Nov out of 112 tested	0 – 0.9%	≤ 5% positive per month	0 positive	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

Contaminants in Water

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.

TERMS USED IN THIS REPORT

- **Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.
- **Grains per Gallon (gpg):** A unit of water hardness defined as 1 grain (64.8 milligrams) of calcium carbonate dissolved in 1 US gallon of water (3.785 L).
- **Maximum Contaminant Level (MCL):** 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.
- **Maximum Contaminant Level Goal (MCLG):** 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.
- **Maximum Residual Disinfectant Level (MRDL):** 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.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** 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
- **Not Detected (ND):** Not detected at or above the minimum reporting level - laboratory analysis indicates that the constituent is not present.
- **Nephelometric Turbidity Units (NTU):** 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).
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **1 part per million (ppm) or milligrams per liter (mg/L):** corresponds to one minute in two years or a single penny in \$10,000. 1 ppm = 1000 ppb
- **1 part per billion (ppb) or micrograms per liter (µg/L):** corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

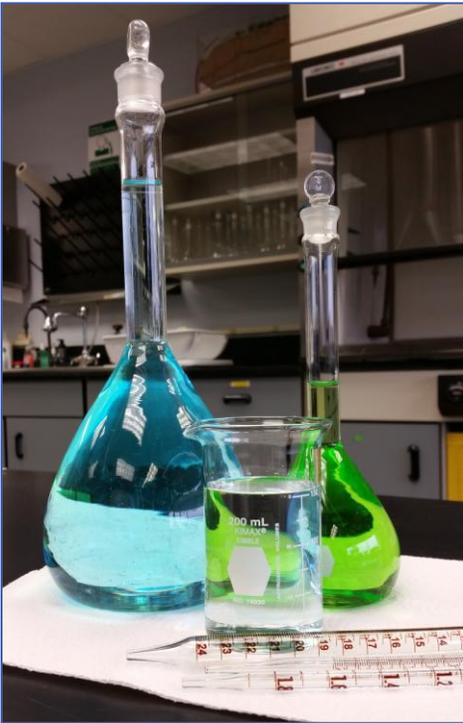
Are you at risk?

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.



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 percent 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. 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.



Unregulated Contaminants

The City of Ann Arbor has been working with the EPA and other researchers to define new national drinking water standards by testing for unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by the EPA, but that may be a health concern for consumers. Collecting information about the occurrence of these compounds in water supplies is the first step in determining whether they should be regulated.

The Future of Drinking Water Regulations

The City of Ann Arbor, along with other water providers, participated in water quality studies as part of the third Unregulated Contaminant Monitoring Rule (UCMR 3). The results of this testing will be used by the EPA to help shape future drinking water regulations. Information about UCMR 3 or other drinking water regulations is available at the EPA website, www.water.epa.gov/drink.

The results from the rounds of UCMR3 testing performed in 2014, as well as other unregulated contaminants that were detected, are located in the tables below.

UCMR3 CONTAMINANTS THAT WERE DETECTED

Detected Contaminants	Units	Your Water Results		Likely Source
		Average level detected	Range	
1,4-dioxane	ppb	ND	N/A	Groundwater contamination from manufacturing process and landfills
Chlorate	ppb	183	49 – 350	Byproduct of disinfection
Chlorodifluoromethane	ppb	0.03	ND – 0.09	Used as a refrigerant
Hexavalent Chromium	ppb	0.15	ND – 0.25	Industrial activities; naturally occurring sources
Molybdenum	ppb	5.3	4.9 – 6.0	Industrial activities; naturally occurring sources
Perfluorooctanesulfonic acid	ppb	0.014	ND – 0.043	Used as a surfactant in cleaners, paints and cosmetics
Strontium	ppb	147	120 – 170	Industrial activities; naturally occurring sources
Vanadium	ppb	0.41	0.32 – 0.54	Industrial activities; naturally occurring sources

OTHER CONTAMINANTS THAT WERE DETECTED

Detected Contaminants	Units	Your Water Results		Likely Source
		Average level detected	Range	
N-Nitrosodimethylamine (NDMA)	ppb	0.0033	N/A	Byproduct of disinfection
Perchlorate	ppb	0.10	N/A	Nitrate fertilizer runoff; contamination from industrial manufacturing process
Sodium	ppm	53	49 – 57	Erosion of natural deposits; road salt and water softeners

Is There Lead in My Water?

Water that comes out of the City's drinking water plant has no detectable lead, however, test results from homes in our community show there can be low levels of lead and copper in tap water, primarily caused by corrosion of household pipes, solder, and faucets.

The City adjusts the water chemistry of the water leaving the plant to minimize the amount of corrosion that can occur, thus helping to reduce the risk to you!



2014 LEAD AND COPPER RESULTS

Detected Contaminants	Units	Your Water Results		Regulatory Requirements		Likely Source
		Concentration at 90 th Percentile	Number of sites above Action Level	Action Level	MCLG	
Lead	ppb	2	0 out of 52	15	0	Corrosion of household plumbing
Copper	ppb	70	0 out of 52	1300	1300	Corrosion of household plumbing

Want more information about lead?

Michigan Department of
Community Health
(517) 335-8011
www.michigan.gov/mdch

Centers for Disease Control
and Prevention
www.cdc.gov/nceh/lead

Community Right-To-Know
Hotline
(800) 424-9346

Environmental Protection
Agency
(800) 424-LEAD
www.epa.gov/safewater/lead

Healthy Household Plumbing

What you can do to minimize lead in your home:

- **Use only cold tap water for drinking or cooking.** Never cook or mix infant formula using hot water from the tap.
- **Do not use water that has sat in your home's plumbing for more than 6 hours.** Run the tap until after the water feels cold. To save water, fill a pitcher with fresh water and place in the refrigerator for future use.
- **Check your plumbing fixtures to see if they are "lead-free".** A new law came into effect in 2014 limiting the amount of lead in faucets and plumbing.

Important information 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 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 from the Safe Drinking Water Hotline at (800) 426-4791 or at <http://water.epa.gov/drink/info/index.cfm>.

Did you know...

Storm drains lead directly to the river, without treatment?

Dumping waste into storm drains, ditches, or waterways contaminates drinking water supplies, recreational areas, and wildlife habitats. Plus, it is illegal!

We need your help!

Report any dumping, spills, or construction site runoff into the stormwater system to City officials.

Sources of Drinking Water

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.



Protecting Water Quality

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) 794-6426.

Using the information from the assessment, a susceptibility rating for each water source was determined by considering the number and location of all potential sources of contamination to our source water. The Huron River was rated "high" and the wells were rated "moderate". These ratings do not mean that source water contamination has or will occur in our water supply; rather, they indicate a need for us to continue to carefully monitor and protect our drinking water sources.

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.



Save Water, Save Energy

When you save water:

- You save money on your utility bills
- You save the energy that goes to pump, treat, and heat water
- You reduce greenhouse gas emissions
- You keep more water in our lakes, wetlands, and underground aquifers

Don't Flush Trouble!

Toilets are not meant for trash disposal

Many used household items are flushed down the toilet each day and are carried to the Wastewater Treatment Plant. They not only clog the city's pipes, resulting in clogged lines and sewer leaks, they could very well clog the pipes in your home. Either way, this could end up costing you money.

These items belong in the trash

- **"Flushable Wipes"** – Marketed as flushable, these don't break down like toilet paper.
- **Condoms** – These do not break down and can balloon, creating clogs.
- **Fats, Oils and Grease** – Don't put grease down garbage disposals! Pour into a container such as an empty jar or coffee can. Once cooled and solidified, secure the lid and place it in the trash or take it to the Drop-Off Center located at 2950 E. Ellsworth Road.
- **Diapers and Feminine Supplies** –The padding and adsorbent nature makes these too thick for plumbing.
- **Cotton Swabs** – Cardboard cotton swabs can be composted, plastic swabs go into the trash.
- **Dental Floss** – It is not biodegradable and can create clogs.
- **Cigarette Butts** – These contain chemicals that can contaminate our water.
- **Hair** – Put hair in the compost bin or throw it in the trash.

Why Can't I Flush Medications?

Protect your health and the environment

Wastewater treatment facilities have to deal with an increasing amount of prescription drugs in the water supply. Unfortunately, facilities aren't equipped to "filter out" these chemicals and, therefore, they make it into our water ways and eventually back into our water supplies.

It is easy to prevent this. Instead of tossing unused or unwanted prescription drugs in the toilet or down the drain, bring them to participating pharmacies and law enforcement offices in Washtenaw County. You will be doing our water and community a huge favor. To find a prescription disposal location near you, check out www.dontflushdrugs.com.



MORE WATER QUALITY PARAMETERS OF INTEREST

Parameter	Units	Your Water Results	
		Average level detected	Range
Alkalinity, total	ppm as CaCO ₃	57	26 – 91
Aluminum	ppm	0.012	N/A
Ammonia as N	ppm	0.16	ND – 0.41
Arsenic	ppb	ND	N/A
Calcium	ppm	30	19 – 44
Chloride	ppm	112	86 – 127
Conductivity	µmhos/cm	604	477 – 751
Hardness (calcium carbonate)	ppm	134	98 – 180
	gpg	7.82	5.7 – 10.5
Iron	ppm	ND	N/A
Lead	ppb	ND	N/A
Magnesium	ppm	21	10 – 32

Parameter	Units	Your Water Results	
		Average level detected	Range
Manganese	ppb	ND	N/A
Mercury	ppb	ND	N/A
Nitrite as N	ppm	0.014	ND – 0.028
Non-Carbonate Hardness	ppm	76	39 – 125
pH	S.U.	9.3	9.1 – 9.5
Phosphorus, total	ppm	0.26	0.12 – 0.40
Potassium	ppm	3	N/A
Sodium	ppm	53	49 – 57
Sulfate	ppm	56	43 – 79
Temperature	°C	14.2	3.7 – 24.8
Total solids	ppm	350	240 – 422
Zinc	ppb	ND	N/A

We Provide Exceptional Water for You!

The staff of the Ann Arbor Water Treatment Plant is strongly committed to bringing you the best drinking water possible. We take pride in not only meeting all federal and state drinking water regulations, but in reaching higher goals.

Do you know how water gets to your faucet and the processes that happen to ensure its quality and safety? To find out, contact us to arrange for a group tour.

Brian Steglitz, P.E.

Water Treatment Services Manager

Contact Us

Customer Service

(734) 994-2700

Water Quality & Treatment

(734) 794-6426

