



CITY OF MILWAUKIE

2015 Annual Drinking Water Quality Report

Spanish (Español)

Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúscalo o hable con alguien que lo entienda bien.

DEAR WATER CUSTOMER,

The past year has seen many drinking water issues in the news. This has caused Milwaukie residents to ask questions about the safety and quality of Milwaukie's drinking water.

This report provides information showing that the City's water meets or exceeds all water quality standards as set by the Oregon Health Authority, Public Health Division, Drinking Water Services and the Environmental Protection Agency but we recognize that the data alone may not alleviate everyone's concerns. The City has taken steps to increase the flow of information with web site that is informative and up to date. We've presented water quality information at public meetings with City Council, regular interaction with the local schools and answering many email and phone inquiries.

The City's water system is in the capable hands of professionals who are certified by the state and receive regular training. From field utility workers who ensure the 24/7/365 delivery of water to engineers who are committed to keeping the infrastructure in good shape, replacing water mains to maintain a well-functioning system. The City's most recent water survey performed by the state was rated as "Outstanding Performance" and our survey cycle was moved from every three years to once every five years.

Thank you for taking the time to read this year's report and letting us know how we can improve. This report is available on the City of Milwaukie web page under Departments, Public Works, and Water <http://www.milwaukieoregon.gov/publicworks/water-division-information> There you will find more information and answers to frequently asked questions and the video "Liquid Assets" that will provide a great overview of the current state of our nation's infrastructure. If you have questions regarding information in this report please contact me. Thank you for taking the time to read the 2015 City of Milwaukie Water Quality Report.

Don Simenson

City of Milwaukie

Water Quality Coordinator

VIEW THE CITY WATER SAMPLING REPORTS ANYTIME ONLINE

Milwaukie residents are welcome to view all of our water sampling results anytime at the State of Oregon Drinking Water Program website. Simply go to <https://yourwater.oregon.gov/namelook.php> and type in Milwaukie. Here you will be able to browse through water sampling results of not only the City of Milwaukie but any other water system in the state of Oregon. You may contact Don Simenson at 503-786-7622 simonsond@milwaukieoregon.gov for any questions on the reports.

WHERE DOES OUR WATER COME FROM?

Milwaukie water comes by way of the Troutdale Gravels Aquifer located over 200 feet below ground, not local rivers or streams. This Aquifer provides water for communities on both the North and South side of the Columbia River. The Troutdale Aquifer encompasses about 300 square miles and extends from northern Clark County in Washington State to south of Milwaukie and from East of Troutdale to the Willamette River. The land mass above the aquifer and the Columbia River's prehistoric paleo-channel (old-channel) serves to maintain water levels within the aquifer. In Milwaukie the groundwater flows primarily from the northeast to southwest.

The City reaches this source of water by means of seven operating wells that range from 250 to nearly 500 feet deep. Milwaukie wells are located in several locations around town. Emergency water connections with Clackamas River Water and The City of Portland Water Bureau and a possible future connection with Oak Lodge Water are capable of supplying all the water we may need in an emergency.

These interties allow the Milwaukie water system to assist other water systems when they need water in times of emergency or high level maintenance.

The City's water system is currently not using any City of Portland water, so when they issue a boil water notice, Milwaukie residents do not need to boil water. This is the same for the Clackamas River Water District area as well. The only time we would use City of Portland or CRW water is during an emergency or during a project such as the elevated tank painting project that will be taking place in fall 2016. The project will require Milwaukie staff to drain the elevated tank to conduct repairs prior to recoating the inside and outside of the tank. This will require us to pressurize the Milwaukie water system with the City of Portland water from our emergency intertie. The project should last a total of two months and the dates will be posted on the City of Milwaukie web site.



THE BIG GREEN TANK AT 40TH AND HARVEY

The Elevated Tank is 1.5 million gallon reservoir was erected in 1963 to meet all standards of that time. Since then our knowledge about earthquakes has significantly improved. Beginning in 2004 the elevated reservoir was evaluated based on new seismic building standards for essential structures.

There were upgrades that needed to take place to help to insure the structure could withstand a major earthquake. Once the engineering was completed and a contractor selected the reconstruction began. The project lasted several months at a cost of over \$345,000.

WHAT IS MILWAUKIE DOING TO KEEP OUR WATER SAFE?

The City works hard to protect our ground water resource and the water distribution system. Milwaukie is currently extending its wastewater service area to reduce the viral threat from septic systems and works closely with Oregon DEQ and Federal EPA to monitor and cleanup past contaminated sites and to properly evaluate and render safe any new sites. Contaminated sites include former gas stations, dry cleaners, industrial and residential properties with contaminants ranging from naphthalene, heating oil and industrial solvents. Oregon DEQ maintains a complete listing of these sites that can be viewed at Oregon DEQ: Search Environmental Cleanup Site Information (ECSI) Database. Milwaukie's storm water, erosion control, and Cross-Connection programs all work together keeping our ground water and surface water safe.

EVERYONE CAN HELP PROTECT OUR GROUNDWATER

You are in control of what chemicals are used in your yard and what falls onto your driveway. Limit your chemical use and the use of cleaners that are harmful to the environment. Clean up any oil or gas spills in your driveway, do not wash them into the street. Do not store fertilizers, pesticides and herbicides outdoors. These chemicals should be stored in a weatherproof shed equipped with a floor. Properly discard old or unused chemicals including cleaners, solvents, paints and lubricants through the local METRO Hazardous waste program. For more information go to www.oregonmetro.gov. Do you have a septic system? If so please contact the City of Milwaukie Engineering staff and ask for information on connecting to sewer @ 503-786-7600. Old septic systems are the leading cause of high nitrate levels that lead to viral contamination of the drinking water aquifer.



CROSS-CONTAMINATION BACKFLOW ASSEMBLIES

Cross-contamination is the leading cause of waterborne disease. Cross-Contamination occurs whenever the water contacts anything that is contaminated or objectionable. Wherever this can occur is called a "cross-connection." As the water purveyor, we are mandated by State of Oregon Drinking Water rules (OAR 333-061-0020, 0070 through 0074) to eliminate or control all actual and potential cross-connections.



Backflow Assembly

A cross-connection is any actual or potential connection between drinking water piping and any other substance. Examples of cross-connections include: residential irrigation, fire sprinkler systems, commercial beverage dispensers, boilers and garden hose spray attachments. Most times a backflow assembly can be installed to prevent a cross connection. If you would like to know if your home or commercial building is safe, please call our specialist at (503) 786-7622 for a free safety survey.

If you know of any backflow assemblies at your property, please be sure to have them tested annually by a certified tester.

The Drinking Water Program (DWP) provides a current public list of OHA-certified Backflow Assembly Testers. The public can use this list to contact a Tester that is currently certified and has indicated availability and appropriate licensing to test assemblies for compensation. Only Oregon OHA-certified Testers can test assemblies in Oregon. Certified public Backflow Assembly Testers on this list are required to obtain licensing through the Construction Contractor's Board (CCB) or Landscape Contractor's Board (LCB). DWP does not verify CCB or LCB licensing for individuals on this list of public Testers. Customers should always verify the licensing of any contractor they hire by using the above links or by calling the CCB at 503-378-4621 or the LCB at 503-986-6561.

Water Quality Data Table

Regulated Substances							
Substance	Year sampled	MCL (MRDL)	MCLG (MRDL)	Amount Detected	Range	Violation	Typical Source
Chlorine	2015	4	2	0.23	0.19-0.41	No	Disinfection chemical used in drinking water.
Fecal Coliform and E.Coli (number of Positive samples)	2015	0	0	0	NA		E. coli is a type of fecal coliform bacteria commonly found in the intestines of animals and humans. E. coli is short for Escherichia coli. The presence of E. coli in water is a strong indication of recent sewage or animal waste contamination. Sewage may contain many types of disease-causing organisms.
Total Coliform Bacteria	2015	0	0	2	NA	NO	Repeat sampling revealed false positive or sampling error.
5 Haloacetic Acids (HAA5) (ppb) Stage 2	2015	60	NA	1.3	0-1.3	NO	By Product of the disinfection process when organic matter is present in the raw water.
Total Trihalomethanes (TTHMs) (ppb) Stage 2	2015	80	NA	1.78	0-1.78	NO	By Product of the disinfection process when organic matter is present in the raw water.
Barium	2015	2		0.00495	0.0033-0.00495	NO	Discharge from Drilling wastes: Discharge from metal refineries and erosion of natural deposits
Fluoride	2015	4	4	0.17			Naturally occurring in ground water
Nitrates	2015	10		5.2	3.7-5.2	No	Nitrate is an essential component of living things and is a major part of animal manure, human sewage waste and commercial fertilizers. Nitrates and nitrites can be associated with septic systems and have been used for centuries as fertilizers, in explosives and as food preservatives.

Tap Water Samples collected for Lead and Copper analysis from throughout the system. Lead and copper Will be sampled again summer 2016

Substance	Year sampled	Action Level (AL)	MCLG	Amount Detected (90th percentile)	Sites Above AL	Violation	Typical Source
Copper	2013	1.3	1.3	0	0	No	Corrosion of Household plumbing systems; Erosion of natural deposits
Lead	2013	15	0	0	0	No	Corrosion of Household plumbing systems; Erosion of natural deposits

Unregulated Substances					
Contaminant	Year sampled	Result of sampling from 8 locations	MCL Regulatory limit	Major Sources in Drinking Water	Health Effects Language
Chromium	2013	0.080 Average Range 0.002-00.16	1	See Chromimum 6 for use or source information.	See Chromimum 6 for health effects information
Strontium	2013	100.88 Average Range 79 to 130	NA	Naturally occurring element: historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions	Rfd: 0.6 mg/kg/day associated with rachitic bone (rickets) (IRIS) EPA CANCER CLASS D not classifiable as to human carcinogenicity
Vanadium	2013	9.18 Average Range 7.9 to 120	NA	Naturally occurring elemental metal used as vanadium penoxide which is a chemical intermeiadate and a catalyst.	Associated with altered kidney function indicated by increased blood urea and mild tissue changes
Hexavalent Chromium Chromium 6	2013	1.23 Average Range .97 to 1.7	NA	Naturally-occurring element; used in making steel and other alloys; chromium-3 or 6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.	Rfd: -0.005mg/kg/day (IRIS, 1998) (basis for MCL) -0.003 mg/kg/day (IRIS, 2005) (basis for HRL) Draft Rfd; 0.0009mg/kg/day associated with intestinal lesions (IRIS, Draft 75 FR 60454) Draft Slpoe Factor: 0.5 (mg/KG/) (IRIS, Draft75 FR 60454)
1,4-Dioxane	2013	1 Sample positive 7.8	NA	Cyclic aliphatic ether: used as a solvent or solvent stablizer in manufacturing and processing of paper, cotton, textile products, automotive coolant, cosmetics and shampoos.	Rfd: 0.003mg.kg/day associated with liver and kidney toxicity (IRIS) EPA 10-4 Lifetime cancer risk: 0.2mg/L Slpoe factor: -0.11 (mg/kg/day)-1 -0.19 (mg/kg/day)-1 (IRIS Draft; 74FR 21361) EPA CANCER CLASS: B2 - probable human carcinogen (sufficient evidence from anaimal studies and inadequate/no epidemiologic studies)

DEFINITIONS

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

AVG: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Highest Compliance Level: The highest level of that contaminant used to determine compliance with a National Drinking Water Regulation

MCL: Maximum Contaminant Level: The highest level of 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 contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for margin and safety.

MFL: Million fibers per liter (a measure of asbestos)

mg/L: Number of milligrams of substance in one liter of water

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.

MRL: Minimum Reporting Level: The lowest concentration of a contaminant that can be measured by a laboratory.

NA: Not applicable.

ND: none detected

NTU: Nephelometric Turbidity Unit: A measure of water turbidity and clarity.

pCi/L: Picocuries Per Liter: A measure of radioactivity.

ppb: Parts Per Billion or micrograms per liter (µg/L)

ppm: Part Per Million or milligrams per liter (mg/L)

ppq: Parts per quadrillion, or pictograms per liter (pg/L)

ppt: Parts per trillion, or nanograms per liter (ng/L)

Range of Detections: The lowest to the highest result value recorded during the required monitoring timeframe for systems with multiple entry points.

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



SOURCE WATER ASSESSMENT.

In 2004 a drinking water source assessment was conducted by Oregon DEQ and Oregon Health Division Drinking Water Program with assistance from Milwaukie staff. The assessment report indicates that the water system would be moderately to highly susceptible to a contamination event inside the drinking water protection area. The drinking water protection area is defined in the Source Water Assessment Report based on the distance water migrates toward a well over a specified period of time.

The presence of several high and moderate risk potential contaminant sources within the protection area was confirmed through a potential contaminant source inventory.

Under a “worst case” scenario, where it is assumed that nothing is being done to protect groundwater quality at the identified potential contaminant sources, the assessment results indicate that the water system would be highly susceptible to several of the identified potential contaminant sources.

In 2010 the drinking water protection area around well 4 was reevaluated and the area was expanded slightly to the north and west. Oregon DEQ is currently working to update source assessments and we will publish any changes to the City of Milwaukie assessment when it is complete.

In addition, the assessment results indicate that, at this time, the water system is considered susceptible to viral contamination. Viral contamination is typically caused by failed septic systems. You may view a copy of the source assessment at the Public Works and Community Development Facility located at 6101 SE Johnson Creek Blvd. If you would like your own copy one can be provided for a fee.

WHAT MAKES UP OUR DRINKING WATER?

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 Environmental Protection Agency’s (EPA) Safe Drinking Water Hotline (800-426-4791). 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 byproducts 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.

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 regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Additional Information for 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 Milwaukie is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Use water from cold tap for drinking and cooking. 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 <http://www.epa.gov/safewater/lead>.