



# Water Quality Report for 2009

City of Milwaukie  
WATER DEPARTMENT

MILWAUKIE CITY COUNCIL • MAYOR JEREMY FERGUSON • DEBORAH BARNES • GREG CHAIMOV • JOE LOOMIS • SUSAN STONE

## Where Our Water Comes From

The City of Milwaukie's water comes from the Troutdale Gravels Aquifer located more than 200 feet below the earth's surface. This aquifer provides water for communities north and south of the Columbia River. The Troutdale Aquifer encompasses about 300 square miles and extends from northern Clark County in Washington to south of Milwaukie and from the 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. The paleo-channel of the Columbia serves to draw water from the aquifer during periods of low water use, such as in the winter, and provides water to the aquifer in times of high volume pumping in the summer.

The City of Milwaukie reaches this water source through seven wells located throughout town that run at depths from 300 to nearly 500 feet deep. Emergency water connections with Clackamas River Water and The City of Portland Water Bureau and a future connection with Oak Lodge Water are capable of supplying all the water the City 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 of high level maintenance.

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

PLEASE SEE ASSESSMENT ON PAGE 2



Dear Water Customer.

We are proud to report to you that our water is as safe as any drinking water supply in the nation. Our water meets or exceeds all water quality standards as set by the Environmental Protection Agency (EPA) and the State of Oregon Public Health Division, Drinking Water Program (DWP).

This Water Quality report discusses where our water comes from and what we do to ensure it is safe. We strive for increasing the accountability of every aspect of getting the water to you. The last couple of years have been a challenge to maintain the service level necessary to maintain the drinking water system without passing on dramatic cost increases. Most of you are aware of the increased cost of electricity but may not realize how much electricity is used to produce your drinking water. Last year the City of Milwaukie paid nearly \$175,000 dollars for the electricity to provide the 879,000,000 gallons of water used by the citizens, schools and businesses. The drinking water is still a bargain at \$1.73 for every 748 gallons or \$0.002 per gallon. We continuously strive to operate the business of delivering water to you in the most cost effective way possible and increasing the quality and security at the same time.

This report will also discuss conservation tips and a few of the most frequently asked questions. The work that was completed in 2009 and what we will do in 2010 are summarized. Health concerns are also addressed and you will find links to more information on water quality and related information.

Meetings that deal with drinking water and related issues are held throughout the year and are announced in the City's monthly newsletter, THE PILOT. If you have questions regarding information in this report please contact me. Once again thank you for taking the time to read this years report and letting us know how we can improve.

*Don Simenson*

Water Quality Coordinator

6101 SE Johnson Creek Blvd.

Milwaukie, OR 97206

Email: [simensond@ci.milwaukie.or.us](mailto:simensond@ci.milwaukie.or.us) Phone: 503-786-7622 Fax: 503-786-7635

## An Assessment of the City of Milwaukie's Water

In 2004 a drinking water source assessment was conducted by the Oregon DEQ and the Oregon Health Division Drinking Water Program, with assistance from Milwaukie staff.

The assessment report indicates

## What is Milwaukie Doing to Keep Our Water Safe?

The City of Milwaukie works hard to prevent the “Worst Case” scenario and 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, industrial and residential properties with contaminants ranging from naphthalene, heating oil and industrial solvents. Milwaukie is currently working with DWP to increase the area of protection to include known contaminated sites.

This enhanced protection will result in sites being cleaned up to more stringent standards.



## Help Protect Our System

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 and do not wash them into the street.
- Do not store fertilizers, pesticides and herbicides outdoors. These chemicals should be stored in a floored, weatherproof shed.
- Properly discard old or unused chemicals including cleaners, solvents, paints and lubricants through the local METRO Hazardous waste program.
- Do you have a septic system? If so please contact the City of Milwaukie Engineering staff and ask for information on connecting to sewer.

For more information go to [www.oregonmetro.gov](http://www.oregonmetro.gov).



### ASSESSMENT FROM PAGE 1

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 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.

## Monitoring Our Water Ssystem and Makeing Sure It's Safe

Maintaining the quality of our drinking water is a major concern to the City of Milwaukie staff, citizens, and elected officials.

The first part of the equation is always knowing what the quality standards are and testing the water. The City's 2009 water analysis costs were in excess of \$20,000.

Upcoming regulatory changes driven by improved methods for analyzing water are increasing the annual cost of monitoring our drinking water. 2009 samples included sampling for explosives and fire retardants in the drinking water. The results of the sample testing revealed that these chemical compounds are not present in Milwaukie's drinking water.

Our monitoring of water quality reaches far beyond our own wells. The industrial areas of Milwaukie have been the scene of historically poor disposal methods of industrial wastes. Several sites are under investigation by Oregon DEQ and are being cleaned up. Most of these sites have monitoring wells that are actively sampled and all information about the types and levels of contaminants are compiled by Oregon DEQ. This information is part of the Source Assessment that is on file at the Johnson Creek Facility or on the Oregon DEQ web site.

Sampling of our water takes place continuously where the water enters the distribution system and samples are collected every week from many different locations. Samples are collected at all of the wells as raw water and are analyzed to determine if there are any changes occurring. Water is again sampled after treatment to ensure proper operation and effectiveness of the treatment plants.

Samples are collected out in the Neighborhoods at sample stations, homes, businesses and schools to ensure that the water that arrives in your glass is safe and clean.

## Milwaukie's Water Source

In 2009 the City of Milwaukie water system relied on six operating wells to supply 820 million gallons of safe reliable drinking water. The seventh well for the City of Milwaukie was drilled and brought into production early in 2009.

The City of Milwaukie no longer accepts water on a daily basis from Clackamas River Water. However Milwaukie continues to enhance our capability through emergency inter-

In 2009 we did not sample for Lead and Copper. We are happy to report that the information we gained from the 2007 sampling event clearly displayed that our drinking water does not leach Lead and Copper out of residential plumbing fixtures or our water delivery system. Thank you to those of you that collected samples in 2007.

Milwaukie is required to submit Lead and Copper water samples every three years from an established list of addresses. The City of Milwaukie's Water Department will be asking for your help in collecting Lead and Copper samples again in August and September of 2010. The results of the 2010 Lead and Copper sampling will be reported in the 2010 Water Quality Report.

---

---

*Our sample testing reveals that the water provided by the City of Milwaukie is clean, safe and meets or exceeds all state & federal requirements.*

---

---

City staff collected nearly 270 water samples in 2009 for microbiological testing and found all samples to be negative for coliforms and E coli. Water sampling in the distribution system for Disinfection by Products (DBP's) reveal that our process and control procedures are effective. DBP's are chemical compounds that form when

chlorine or other disinfectants react with natural organic matter in the water.

Levels of these compounds in Milwaukie's water are so low that the EPA and DWP granted Milwaukie a waiver from increased monitoring and distribution system analysis. Milwaukie will continue to monitor quarterly for DBP's to ensure process and controls are properly maintained.

Samples are collected every quarter from each well site and from each treatment plant and tested for 56 different Volatile Organic Chemicals (VOC's).

Our sample testing reveals that the water provided by The City of Milwaukie is clean, safe and meets or exceeds all state and federal requirements.

connections with Clackamas River Water and the City of Portland Water Bureau.

The City's Water Department is working toward a connection with Oak Lodge Water District. These inter-connections provide the water transmission capabilities necessary to support the water needs of each other in the event of a natural disaster.

# An Explanation of the Water Quality Data Tables

The tables below show the results of our water quality analyses. We analyze the City's water at each of the City's wells and entry points.

Entry points are where treated water enters the water system. We don't test for every contaminant each year. Some pose greater risks than others, and are therefore tested at least annually. Others are less harmful and occur less frequent-

ly and are not tested for as regularly.

Every regulated contaminant that we detected in the finished water, no matter how small the trace, is listed in the tables on these two pages.

The tables contain the name of each substance, the highest level allowed by regulation, the ideal goals for public health, the amount detected and the usual sources of such contamination.



**Key To Tables:** The data presented in this report is from the most recent testing conducted in accordance with regulations. Not all contaminants are tested annually. All testing is accomplished within the EPA schedule.

ND: None Detected  
 MCL: Maximum Contaminant Level  
 MCLG: Maximum Contaminant Level Goal

pCi/l: Picocuries per liter (a measure of radioactivity)  
 PPM: Parts per million, or milligrams per liter (mg/l)

ppt: Parts per trillion, or nanograms per liter  
 ppb: Parts per billion, or micrograms per liter (µg/l)

**Maximum Contaminant Level or MCL:**  
 The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal or MCLG:**  
 The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Inorganic Contaminants	MCL	MCLG	Results	Major Sources In Drinking Water	Possible Health Effects
Nitrate (NO3) (ppm)	10	n/a	0 to 4.3	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.	Infants below the age of 6 months who drink water in excess of the MCL could become seriously ill, if untreated, die. Symptoms include shortness of breath and blue baby syndrome.
Arsenic	10	n/a	0 to 4	Erosion of natural deposits: Runoff from orchards, glass, and electronics manufacturing production wastes.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
TTHM's Total Trihalomethanes	80	n/a	6	By-product of drinking water chlorination.	Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidney, or central nervous system and may have an increased risk of getting cancer.
Haloacetic acids HAA5	60	n/a	0	By-product of drinking water disinfection.	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

## Unregulated Contaminants

The City of Milwaukie does not test for Cryptosporidium since it is rarely present in well water.

During testing, in December of 2003, our water revealed no Gross Alpha particle activity level.

One well did display a level of combined Radium 226/228 of 1.28 pCi. The U.S. Environmental Protection Agency (EPA) limit is 5 pCi.

The EPA is preparing regulations that will specify a Maximum Contaminant

Level for radon. Radon is a radioactive gas that occurs naturally in ground water and is released from water into the air during household use.

2009 will bring in a round of sampling for explosives and fire retardants.

The EPA will utilize the data from this sampling event to determine whether or not these chemicals represent a threat in drinking water.

## Sampling & Reporting Violations

City Staff failed to report the 3<sup>rd</sup> Quarter sample for Volatile Organic Chemicals (VOC) for entry Point D Well #8. The reporting was due Sept. 30, 2009. The sample was collected on August 3, 2009 and analyzed on August 5, 2009. Compliance was achieved on October 30, 2009.

There are 57 regulated and unregulated contaminants in the VOC family. No VOC's were present in the sample.

Radioactive Contaminant	MCL	MCLG	Results	Major Sources In Drinking Water	Possible Health Effects
Combined Radium (pCi/L)	5	0	0 to 1.28	Erosion of natural deposits.	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

Substance	Units	Goal	Action Level	90 <sup>th</sup> Percentile*	Homes Exceeding Action Level	Complies?	Source of Contaminate?
Copper	ppb	1,300	1,300	70	0	Yes	Corrosion of household plumbing
Lead	ppb	0	1,500	2	0	Yes	Corrosion of household plumbing

\* The 90<sup>th</sup> percentile is the highest result found in 90% of the samples when they are listed in order from the lowest to the highest results. EPA requires testing for lead and copper at customers' taps most likely to contain these substances based on when the house was built.

The EPA determined that if the sample results exceeded the Action Level (AL), the City must take action in reducing the risk of leaching of lead and/or copper. As you can see by the table above, our water was well below the Action Level on our last round of testing in 2007. Our next testing is scheduled for this summer.

Microbiological Contaminant	MCL	MCLG	Results	Major Sources In Drinking Water	Possible Health Effects
Total Coliform bacteria	Presence of coliform bacteria in 5% of monthly samples	0	0	Naturally present in the environment.	Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.
Fecal coliform and E. coli	If a routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive	0	0	Human and animal fecal waste.	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

## Additional Health Information

All of the water we drink, both tap water and bottled water, originates from a combination of rivers, lakes, streams, ponds, reservoirs, springs and wells. But as water travels over the surface of the land or through the ground, it absorbs naturally occurring minerals and radioactive material. Water also picks up substances resulting from the presence of animals or from human activity.

Some of the 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 storm 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, storm water 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, storm water runoff and septic systems.*
- ✿ *Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production, mining activities or manufacturing. In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public systems.*



*In 2009 the City of Milwaukie purchased “Dorothy,” a water valve maintenance trailer designed to fully maintain, exercise, and repair all aspects of the City’s water valve system.*

*The City’s Water System includes 964 fire hydrants, over 4,800 valves and 6,911 service connections.*

*The City’s water infrastructure is valued at over \$16,516,356.*

## National Primary Drinking Water Regulation Compliance

In order to ensure our drinking water is safe, the United States Environmental Protection Agency sets regulations for drinking water. The City of Milwaukie is in full compliance with the National Primary Drinking Water Regulations.

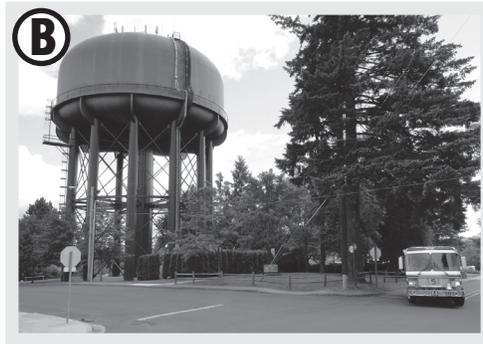
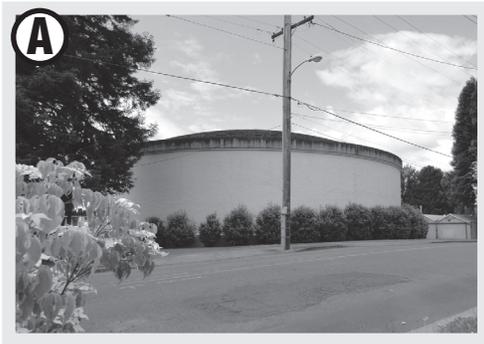
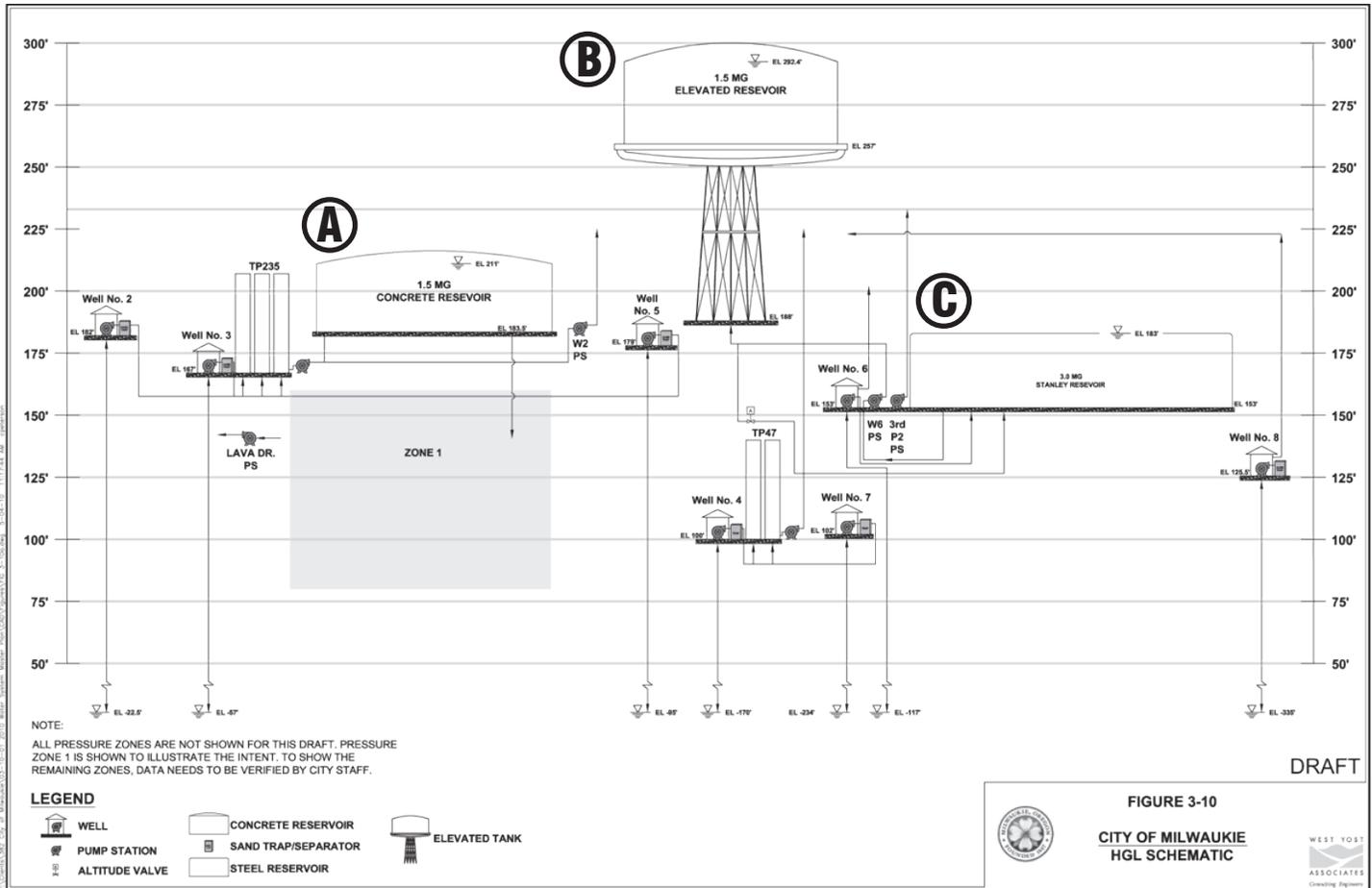
Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that

water poses a health risk.

However, 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: (800) 426-4791 and online at [www.epa.gov/safewater](http://www.epa.gov/safewater).



## Cross-Contamination

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.”

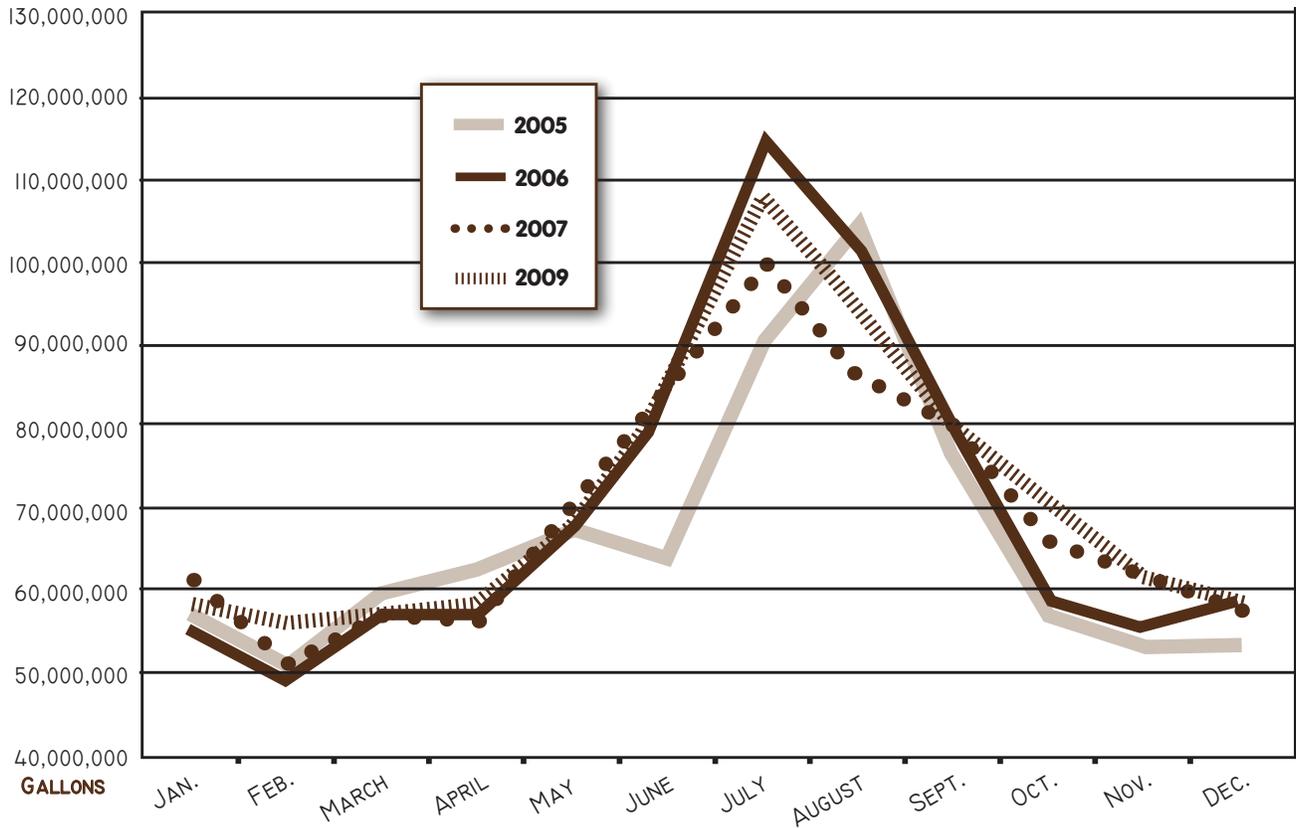
As the water purveyor, we are mandated by State of Oregon Drinking Water rules to eliminate or control all actual and potential cross-connections.

A cross-connection is any actual or potential connection between drinking water piping and any other substance. Ex-

amples of cross-connections include: residential irrigation, fire sprinkler systems, commercial beverage dispensers, and your garden hose.

If you would like to know if your home or commercial building is free of cross-connections and drinking water 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.

# Water Production Over The Last Four Years



**Questions?** The City of Milwaukie will be happy to answer any questions you might have about the City's water operations or water quality. Ask for Don Simenson, Water Utility Specialist, for questions related to quality. Water Quality data for community water systems throughout the United States is available via the Internet at [www.water.data.com](http://www.water.data.com) and the State of Oregon's Drinking Water Home Page.

## Water Quality Report *for* 2009

Check the City's web site for a copy of this report, and other water related information.



City of Milwaukie  
10722 SE Main Street  
Milwaukie, Oregon 97222

Presorted  
Standard  
ECRWSS  
U.S. Postage  
PAID  
Portland, OR  
Permit 990

Postal Customer