

Sources of Lacey's Drinking Water

Nineteen wells are used to draw Lacey's water from underground aquifers. Additional water is purchased periodically from the Olympia water system to help meet peak demand. The water purchased from Olympia comes from McAllister Springs. Water quality data from Olympia is listed in this report.

What is an aquifer?

An aquifer is an underground layer of unconsolidated rock or sand that is saturated with usable amounts of water. Aquifers, which store and carry water, form significant natural water supplies. Recharge areas are important to a healthy aquifer. In a recharge area, water is able to filter slowly into the earth and down to the aquifer, helping to re-supply the resource.

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.

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 (1-800-426-4791).

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, such as Lacey's water system. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

For More Information...

...About Lacey's distribution system or to report problems, call the Lacey Maintenance Service Center at 360-491-5644.

...About your utility bill, call Lacey Utility Billing at 360-491-5616.

...About drinking water safety, call the EPA Safe Drinking Water Hotline at 1-800-426-4791 or visit the EPA Homepage at www.epa.gov/OW.



Water Resources
P.O.Box 3400
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PWSID #43500Y



Water Quality Report 2008

From water quality data collected in 2007

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A Message from the Mayor



It is my pleasure to provide you with the City of Lacey's annual Drinking Water Quality Report. It is important that the City's drinking water customers know that they, their families and businesses receive the highest quality drinking water.

This report summarizes the water quality testing that Lacey Water Utility staff performed on our water supply through 2007. It is indeed my pleasure to inform you that our water not only meets, but exceeds the strict guidelines set by the Environmental Protection Agency.

City of Lacey staff goes to great lengths to protect your water supply through repetitive monitoring, treatment, investment and long-term planning. When you go to your tap, you can have confidence in the fact that the City of Lacey operates a first-class water system, and that your water is safe and reliable.

The information in this report will allow all of our customers, especially those with special health needs, to make informed decisions regarding their drinking water. Although this report is designed to present important information in a way that is easy to understand, drinking water quality is a complex subject and much of the information is technical in nature. If you have questions regarding your drinking water or this report, please contact your Lacey Water Utility at 360-491-5600.

Sincerely,

Mayor Graeme Sackrison

New Water System Upgrades in Hawks Prairie Area

2008 will be an exciting year for upgrades to the Lacey Water Utility, with two major projects scheduled for completion this spring and summer. The new Hawks Prairie Well Treatment Facility, scheduled for startup in June, will treat water from the existing Hawks Prairie well, and, in addition, has the capacity to treat water from a future well proposed for the area. The facility will provide high quality water to the Hawks Prairie area and into the Carpenter Road area.

Also, a new water pump station will be completed and begin operation in June. The pump station will provide higher and more consistent water pressures to customers north and south of I-5, while ensuring adequate water pressure and volume during fire events and peak demand periods. The new pump station will also provide a backup water source when other wells throughout the system undergo routine maintenance. In the short term, customers may notice slight changes in the aesthetic quality of their water supply. This will be temporary and not result in any health risk.

To Get Involved...

...Join us for a Utilities Committee meeting on the second Thursday of each month at 8:00 a.m. at Lacey City Hall, 420 College Street S.E. in Lacey. The committee discusses a variety of issues regarding our stormwater, drinking water, and wastewater utilities.

...Public attendance at City Council meetings is also welcome. The Council generally meets the second & fourth Thursday of the month January through October and the first and third Thursdays for November and December. Meetings begin at 7:00 p.m. at Lacey City Hall.

...Call 360-491-3214 to check the agenda of upcoming meetings or check our web site at www.ci.lacey.wa.us.

Drinking Tap Water Saves You \$\$\$

Your tap water from the Lacey Water Utility not only undergoes a higher degree of testing and reporting than bottled water, it is also less expensive. Additionally, bottled water comes with a high price tag for the environment. It is estimated that the production of the 29 billion water bottles used each year in the U.S. requires 17.6 million barrels of oil. That's enough oil to supply fuel to 1 million vehicles for a full year. Here is how Lacey tap water fares against typical bottled water.

Bottled Water

16.9 ounces per bottle, 35 bottles/4.62 gallons per case at \$6.99 per case = \$ 1.51 per gallon

Lacey Tap Water

About \$ 0.77 per 748 gallons = 0.103 of a penny per gallon. Less than 1 cent per case!

Are You Sending Money Down the Drain?

Did you know that on the average, nearly 10% of the water that passes through residential meters is wasted due to plumbing leaks? Over time, this can add up to serious money. Even if you think that your plumbing system is in good shape, chances are there are areas where you are leaking water, and a quick 30 minute test can determine your water loss. Your water meter can be an important tool in checking for leaks. Most water meters used within the City of Lacey's water system have a face that looks like the odometer on a car. To utilize the meter to check for leaks, first make sure that all indoor and outdoor water faucets and appliances are off. Take an initial reading by writing all of the numbers on the face of the meter down. Wait as long as possible, at least 30 minutes, and again record the numbers on the meter. Simply subtract the first reading from the second to determine the amount of water that is leaking from your system.

The most common culprits for water loss are leaking toilets and dripping faucets. Many toilets leak water from the tank into the bowl without being flushed, and the water loss, although barely noticeable, can result in thousands of gallons of wasted water annually.

How to Test for Toilet Leaks:

1. Lift the lid off the toilet tank and put 5-10 drops of food coloring into the tank.
2. Wait five minutes and then look in the bowl. If you see food coloring in the bowl, you have a leak.

In most cases, replacing the toilet flapper and/or the filling mechanism will correct the problem. For help in determining if you have a leak, call your Lacey Water Utility at 360-491-5600.

Irrigation Systems and Drinking Water Safety

If you have an in-ground sprinkler system or private irrigation well, Washington State law requires you to install, maintain and schedule yearly inspections of the backflow prevention device. Backflow occurs when water flows in the opposite direction than intended, resulting in potential contamination of the drinking water supply. Under the law, annual inspection and testing of the backflow device must be performed by a licensed tester.

Properly installed and maintained backflow prevention assemblies will stop the backflow of contaminated water into the drinking water supply. If you have any questions or concerns about backflow or the City of Lacey's Cross Connection Control Program, please call Lacey Water Resources at 360-491-5600.

Outdoor Watering Policy

During the months of June through September, Lacey Water Utility customers are required to adhere to the following schedule for outdoor watering. Water usage during the summer months is almost 3 times the winter usage, and the peak demand associated with outdoor watering can seriously affect our system's ability to provide fire protection and essential services during these times. The Odd/Even approach has shown to be successful in reducing peak demand, and will again be implemented in 2008. The irrigation/watering schedule is based on each property's street address.

All Addresses Ending with an Odd Number:

Saturday • Monday • Wednesday

All Addresses Ending with an Even Number:

Tuesday • Thursday • Sunday

The policy covers regular outdoor watering of lawns, flowerbeds, gardens, and other landscaping. Water used for other purposes (i.e., car washing, pressure washing, swimming pool filling, etc.) is not regulated by this policy.

Exemptions may include: (1) newly seeded lawns and landscape, (2) greenhouse plants, and (3) publicly-owned facilities with active sports playfields.

All water customers are required to participate in the watering schedule, and your cooperation is vital. In addition to helping Lacey meet peak water demands, the schedule ensures that the fire department has the available water it needs to effectively respond to fires.

For more information on the outdoor watering policy, or to register for an exemption, call Lacey Water Resources at 360-491-5600.

2007 Water Quality Results for Lacey's Source Wells

PWSID #43500Y

Primary Standards Regulated by EPA						
Contaminant	Highest Level Allowed (MCL)	Goal Not to Exceed (MCLG)	Highest Level Detected	Lowest Level Detected	Sample Date of Highest Level	Typical Source of Contamination
Arsenic	10 ppb	0 ppb	2 ppb	< 2 ppm	10/16/07	geology, natural weathering
Nitrate*	10 ppm	10 ppm	6.7 ppm	<0.2 ppm	6/6/07	septic systems, fertilizer, animal waste
Total Coliform Bacteria	5% samples/month	0% samples/month	0% of samples	0% of samples		naturally present in environment
Total Trihalomethanes**	80 ppb	NA	12.1 ppb	<0.5 ppb	10/23/07	reaction of chlorine with naturally-occurring organic matter
Total Haloacetic acids***	60 ppb	NA	2.0 ppb	<0.5 ppb	7/23/07	reaction of chlorine with naturally-occurring organic matter
Chlorine Residual	4 ppm	4 ppm	1.1 ppm	0.05 ppm	4/11/07	chlorine has been added to the entire Lacey water system since May 2005
Radium 228	5 pCi/L	N/A	1.01 pCi/L	< 0.2 pCi/L	5/9/07	geology, natural weathering

Secondary Standards						
Contaminant	Highest Level Allowed (MCL)	Goal Not to Exceed (MCLG)	Highest Level Detected	Lowest Level Detected	Sample Date of Highest Level	Typical Source of Contamination
Chloride	250 ppm		29 ppm	2 ppm	11/9/06	geology, natural weathering
Fluoride†	4 ppm	4 ppm	<0.2 ppm	<0.2 ppm		geology, natural weathering
Iron	300 ppb	NA	16 ppb	<30 ppb	10/23/07	geology, natural weathering
Lead	N/A	15 ppb	9 ppb	< 2 ppb	10/23/07	plumbing material
Manganese	50 ppb	NA	10 ppb	<10 ppb	10/16/07	geology, natural weathering
Sulfate	250 ppm		12 ppm	3 ppm	10/16/07	geology, natural weathering

Regulated by the State						
Contaminant	Highest Level Allowed (MCL)	Goal Not to Exceed (MCLG)	Highest Level Detected	Lowest Level Detected	Sample Date of Highest Level	Typical Source of Contamination
Conductivity	700 µmhos/cm	NA	444 µmhos/cm	84 µmhos/cm	3/18/05	geology, natural weathering

Regulated by the State at the Consumer's Tap						
Contaminant	State Action Level	Goal Not to Exceed (MCLG)	90% Percentile	# Samples over state action level	Sample Date of Highest Level	Typical Source of Contamination
Copper	1300 ppb	N/A	950 ppb	1 sample	11/23/04	Corrosion of household plumbing or erosion of natural deposits
Lead	15 ppb	NA	4 ppb	0 samples	9/20/05	Corrosion of household plumbing or erosion of natural deposits

next copper and lead compliance samples from customers to be collected in 2008



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. Environmental Protection Agency/Centers for Disease Control 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).



2007 Water Quality Results for Olympia's McAllister Springs Source Water						
Contaminant (Units)	MCL	MCLG	McAllister Springs Water Amount Detected	Range of Results (Low - High)	Testing Frequency	Typical Source of Contamination
Cryptosporidium	N/A		Zero	N/A	Once a month	Fecally contaminated water
Giardia Lambia	99.9% removal		Zero	N/A	Once a month	Fecally contaminated water
Fecal Coliform Bacteria (# of bacteria per 100 ml of water)	90% of samples must have fewer than 20 bacteria per 100 ml of water	Zero	100% of samples had fewer than 20 bacteria per 100 ml of water	0 - 2 organisms	5 times a week	Fecally contaminated water
Total Coliform Bacteria (# of bacteria per 100 ml of water)	90% of samples must have fewer than 20 bacteria per 100 ml of water	Zero	99.6% of samples had fewer than 100 bacteria per 100 ml of water	0 - 101 organisms	5 times a week	Soil bacteria and fecally contaminated water
Turbidity (NTU)	5 NTU	1 NTU	0.33-0.520 NTU	0.022 - 0.53 NTU	Metered continuously	Soil runoff

Water Supply System (or Tap Water) After Chlorination						
Contaminant (Units)	MCL	MCLG	City of Olympia Water Amount Detected	Range of Results (Low - High)	Testing Frequency	Typical Source of Contamination
Total Coliform Bacteria	90% of samples must have zero detections	Zero	No samples had confirmed detections	Zero	60 times per month at a minimum	Soil bacteria and fecally contaminated water
Chlorine residual (ppm)	4.0 ppm	Detectable amount of 0.05 ppm	0.09-1.56 ppm	0.09 - 1.56 ppm	Metered continuously	Chlorine is used as a disinfectant in the water treatment process

Important Drinking Water Terms:

Maximum Contaminant Level (MCL): the highest level of a contaminant that is allowed in drinking water.

Maximum Contaminant Level Goal (MCLG): the contaminant level in drinking water below which there is no known or expected risk to health.

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

Primary Standard: the MCL for these substances is set primarily for health reasons.

Secondary Standard: the MCL for these substances is set primarily for non-health reasons such as color, taste, or fixture staining or indirect health concerns when levels are too high.

NTU: Nephelometric Turbidity Unit is the standard unit to measure the amount of material suspended in water.

ppm: Parts per million is equivalent to milligrams per liter (mg/l). One ppm is approximately equal to 1 drop in 22 gallons of water.

ppb: Parts per billion. One ppb is approximately equal to 1 drop in 22,000 gallons of water (equivalent to about 1 drop in a small swimming pool).

ppt: Parts per trillion. One ppt is approximately equal to 1 drop in 22,000,000 gallons of water (equivalent to about 1 drop in Long's Pond).

pCi/l: Picocuries per liter is the unit of measure used to describe an amount of radiation.

µmhos/cm: Micromhos per centimeter is the unit of measure used to describe conductivity.

Secondary Standard: the MCL for these substances is set primarily for non-health reasons such as color, taste, or fixture staining or indirect health concerns when levels are too high.