Water Quality Report

2009

From water quality
data collected through 2008

CITY OF LACEY

A Message from the Mayor

I am pleased to provide you with the City of Lacey's annual Drinking Water Quality Report. This report summarizes the water quality testing that Lacey Water Utility staff performed on our water supply through 2008. The City of Lacey's water not only meets, but exceeds the strict guidelines set by the Environmental Protection Agency.

Overlooking the Nisqually Valley

It is important that the City's drinking water customers know that they, their families and businesses receive the highest quality drinking water. When you go to your tap, you can have confidence in the fact that the City of Lacey operates a reliable, first-class water system.

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. Please take the opportunity to read and learn about the quality of your community's drinking water. 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

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.

To Get Involved

- Join us for a Utilities Committee meeting on the first Tuesday of each month at 11:00 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 .

Justin and Scott after a long day working on Lacey's water lines.

Contractor tapping one of Lacey's water lines.

Sources of Lacey's Drinking Water

The majority of Lacey's water supply comes from 19 wells that withdraw groundwater from three aquifers.

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.

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.

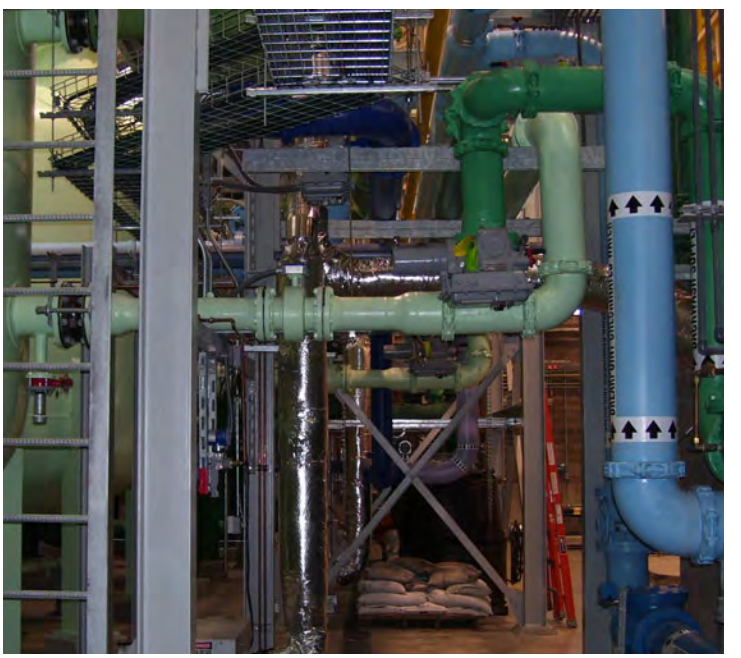
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and in some cases, radioactive material, and can pick 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.



Hawks Prairie Water Treatment Facility

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 substantially 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 a substantial amount of 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. Subtract the first reading from the second to determine the amount of water (in cubic feet) 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.

Want a New Toilet that Doesn't Guzzle Water?

If you have a toilet that uses more than 3 gallons per flush, you may be eligible for a brand new high efficiency toilet (HET)! HETs are a new generation of toilets that use 20% less water than a standard low-flow toilet. Depending on which services the City of Lacey provides to your home (water, sewer or both) and the type of toilet you currently have, you may qualify for a free or reduced cost high efficiency toilet. If you are a City of Lacey water or sewer customer, contact Lacey Water Resources at 360-491-5600 to see if your toilet qualifies for an upgrade.

Is Your Sprinkler System up to Code?

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 assembly. 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 assembly 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 questions about backflow or the City of Lacey's Cross Connection Control Program, please call Lacey Water Resources at 360-491-5600.

Mandatory Odd/Even Outdoor Watering Schedule began June 1, 2009 for all Lacey Water Customers

All Addresses Ending with an Odd Number, 1, 3, 5, 7 or 9 can irrigate on :

Saturdays • Monday • Wednesdays

All Addresses Ending with an Even Number 0, 2, 4, 6 or 8 can irrigate on:

Tuesdays • Thursdays • Sundays

During the summer months, mainly due to outdoor watering, Lacey Water Utility customers consume three times as much water as in the winter. Alternating outdoor watering is necessary to meet peak daily demands. It also reduces the city's construction and maintenance costs associated with demands, thereby saving our water customers money.

Mandatory odd/even watering will remain in effect from June 1 through September 30. All water customers are required to participate in the watering schedule, and your cooperation is vital. The Odd/Even approach has shown to be successful in reducing peak demand and helps ensure that the fire department has the available water needed to effectively respond to fires.

2008 Water Quality Results for City of Lacey PWSID #43500Y

Primary Standards Regulated by EPA to protect public health

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 ppb	10/16/07	geology, natural weathering
Nitrate*	10 ppm	10 ppm	5.6 ppm	<0.2 ppm	6/24/08	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	N/A	15 ppb	<0.5 ppb	8/27/08	reaction of chlorine with naturally-occurring organic matter
Total Haloacetic acids***	60 ppb	N/A	4.6 ppb	<0.5 ppb	10/24/08	reaction of chlorine with naturally-occurring organic matter
Chlorine Residual	4 ppm	4 ppm	0.95 ppm	0.24 ppm	6/12/08	added as a disinfectant to the water system
Radium 228	5 pCi/L	N/A	1.01 pCi/L	< 0.2 pCi/L	5/9/07	geology, natural weathering

Secondary Standards regulated by the EPA for aesthetics

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	N/A	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	N/A	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	N/A	245 µmhos/cm	84 µmhos/cm	10/23/07	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	960 ppb	1 sample	9/10/08	Corrosion of household plumbing or erosion of natural deposits
Lead	15 ppb	N/A	10 ppb	0 samples	9/10/08	Corrosion of household plumbing or erosion of natural deposits

* Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.
**Highest running annual average was 2.6 ppb ***Highest running annual average was 0.90 ppb †Lacey does not add Fluoride to our water

For more information on the outdoor watering policy, or to request an exemption, call Lacey Water Resources at 360 491-5600 or visit www.ci.lacey.wa.us and click on "Lacey Water Resources".

Important Information about Your Water

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 (1-800-426- 4791). 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 Lacey 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 drinking 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.

2008 Water Quality Results for City of Olympia Source Water

TABLE 1 - McAllister Springs (Surface Water Source) Before Chlorination

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 Lamblia	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 - 5 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 100 bacteria per 100 ml of water	Zero	99.6% of samples had fewer than 100 bacteria per 100 ml of water	0 - 88 organisms	5 times a week	Soil bacteria and fecally contaminated water
Turbidity (NTU)	5 NTU	1 NTU	0.33-0.520 NTU	0.024 - 0.189 NTU	Metered continuously	Soil runoff

TABLE 2 - 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	95% 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 disenfectant in the water treatment process
Disinfection By-Products						
Haloacetic Acids (HAA) (ppb)	60 ppb	N/A	1.5 ppb	0.0 - 1.5 ppb	Quarterly	Disinfection by-products are caused by a chemical reaction between chlorine and naturally occurrring organic matter in water
Total Trihalomethanes (TTHM) (ppb)	80 ppb	N/A	5.0 ppb	0 - 5.0 ppb		

TABLE 3 - Lead & Copper (taken at customer tap) Results from 2006

Contaminant (Units)	MCL	City of Olympia Water Amount Detected	Number of Sites Found Above the AL	Range of Results (Low - High)	Testing Frequency	Typical Source of Contamination
Copper (ppm)	Action Level (AL) 1.3 ppm	90% of the homes tested had copper levels less than 0.985 ppm	Zero sites above AL out of 35 sites sampled	<0.059 -1.2 ppm	Once every 3 years	Corrosion of household plumbing
Lead (ppb)	Action Level (AL) 15 ppb	90% of the homes tested had lead levels less than 3 ppb	Zero sites above AL out of 35 sites sampled	<1 - 5 ppb	Once every 3 years	Corrosion of household plumbing

Action Level for Copper: 90% of the homes tested must have levels less than 1.3 ppm detected
Action Level for Lead: 90% of the homes tested must have levels less than 15 ppb detected

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).

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.