



# Lacey Water Utility Drinking Water Report

## Lacey Drinking Water Supply: Quality and Confidence



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 2006. Each year, all public water systems are required by the Federal Safe Drinking Water Act to provide their customers with reports on the quality of their drinking water. I am happy to inform you that our water not only meets, but exceeds the strict guidelines set by the Environmental Protection Agency.

The Lacey Water Utility has made considerable strides regarding water quality in recent years. Due to the detection of coliform bacteria in the water system in late 2003, the utility implemented a system wide disinfection program that eliminated any detectable levels of this contaminant. Furthermore, the Lacey Water Utility implemented an ongoing line flushing program that over the past two years has greatly improved the aesthetic quality of our water. Lacey Water Utility employees take great pride in providing you with the best water possible, and will continue to strive for excellence in delivering this resource to you.

You can have confidence in the fact that the City of Lacey operates a first-class water system. As one of its customers, it is important that you know your drinking water meets or exceeds all government standards. 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.

Drinking water quality is a complex subject and some of the information is technical in nature. This report was designed to present this important information in a way that is easy to understand. If you have questions regarding your drinking water or this report, please contact your Lacey Water Utility at 360-491-5600.

Sincerely,

Mayor Virgil Clarkson



## Water: A Precious Resource

Here in the rainy northwest, it's easy to take our water supply for granted. But communities are now realizing that quality, reliable sources of drinking water are not in endless supply.

By using water wisely, we can delay the need for costly water system upgrades, reduce water and utility costs, and protect fish and wildlife that depend on clean, abundant sources of water.

### Conserve Water Inside Your Home:

- Repair leaky toilets and faucets
- Take shorter showers
- Run washing machines and dishwashers only when you have a full load
- Replace old, inefficient water fixtures with low-flow models

### Conserve Water Outside Your Home:

- Choose drought tolerant plants
- Reduce the amount of turf in your landscape that needs irrigation
- Always use a properly functioning nozzle when using a hose.
- If you must water, do so late at night or early in the morning to reduce evaporation. Apply only about 1 inch of water per week (including rainfall).

## Free Kits Help You Conserve Water and Reduce Utility Bills

The City of Lacey, in cooperation with the LOTT Alliance, is offering free water conservation kits to its water customers. Indoor kits include a low-flow showerhead, faucet aerators for kitchen and bathroom, and toilet leak detection tablets. Outdoor kits contain a precipitation gauge, hose repair kit, hose nozzle and gaskets. Hose bib timers are also available. Conservation kits are available at the Public Works counter at Lacey City Hall.

### Outdoor Watering Policy

In 2006, the Lacey Water Utility adopted an alternate day outdoor watering policy in an effort to conserve water and reduce peak demand during summer when usage is almost 3 times that of winter. The approach successfully reduced peak demand last summer and will be implemented again in 2007. The schedule is based on your property's street address.

#### Outdoor Watering Schedule *(Jun-Sep)*

If your address ends with an **EVEN** number, irrigate **Sun/Tue/Thu**

If your address ends with an **ODD** number, irrigate **Sat/Mon/Wed**

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 include: (1) newly seeded lawns and landscape, (2) greenhouse plants, and (3) public-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 wise water use, or to register for an exemption, call Lacey Water Resources at 360-491-5600.

## Cross Connections and Drinking Water Safety

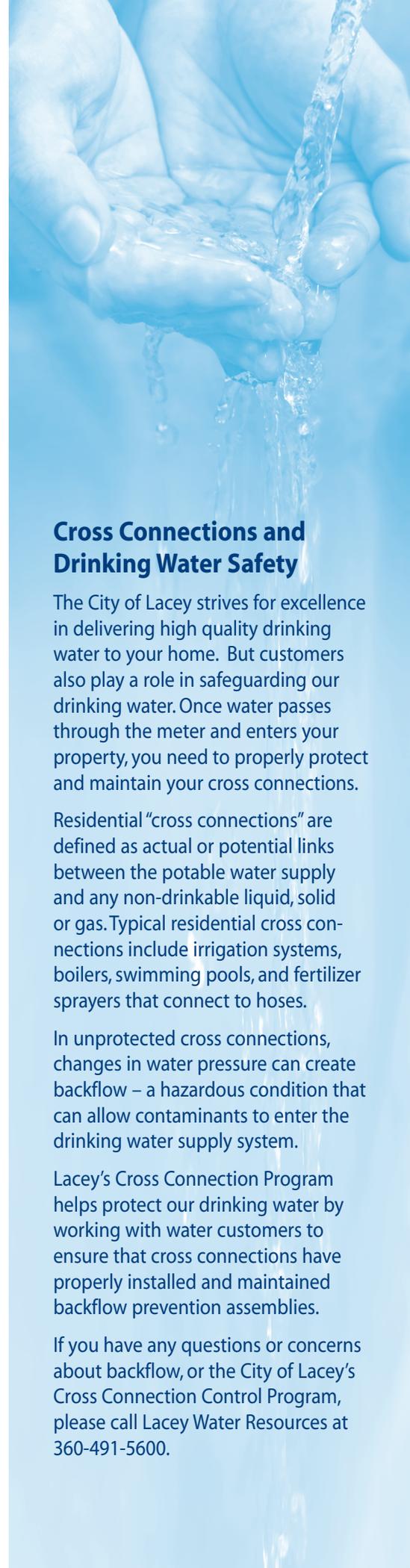
The City of Lacey strives for excellence in delivering high quality drinking water to your home. But customers also play a role in safeguarding our drinking water. Once water passes through the meter and enters your property, you need to properly protect and maintain your cross connections.

Residential "cross connections" are defined as actual or potential links between the potable water supply and any non-drinkable liquid, solid or gas. Typical residential cross connections include irrigation systems, boilers, swimming pools, and fertilizer sprayers that connect to hoses.

In unprotected cross connections, changes in water pressure can create backflow – a hazardous condition that can allow contaminants to enter the drinking water supply system.

Lacey's Cross Connection Program helps protect our drinking water by working with water customers to ensure that cross connections have properly installed and maintained backflow prevention assemblies.

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.





**Important Drinking Water Terms:**

**Maximum Contaminant Level (MCL):** the highest allowable level of a given contaminant.

**Maximum Contaminant Level Goal (MCLG):** the level of a contaminant below which there are no known or expected health risks.

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

**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, fixture staining or indirect health concerns.

**ppm (parts per million):** equivalent to milligrams per liter (mg/l). One ppm equals approximately 1 drop in 22 gallons of water.

**ppb (parts per billion):** one ppb equals approximately 1 drop in 22,000 gallons of water (about 1 drop in a small swimming pool).

**ppt (parts per trillion):** one ppt equals approximately 1 drop in 22,000,000 gallons of water.

**pCi/l (picocuries per liter):** the unit of measure used to describe an amount of radiation.

**umhos/cm (micromhos per centimeter):** the unit of measure used to describe conductivity.

**Conservation-Oriented Water Rates Now in Effect**

As part of the 2006 budget process, the City, in an effort to encourage water conservation, adopted a consumption-based water rate structure. The new rates became effective in January of this year.

Customers are grouped by their water use patterns and two new rate tiers were added. The third rate tier became effective January 1, 2007. A fourth tier becomes effective in January of 2008.

**Group 1 (subject to tiers 1 thru 4):**

Single-family residential, duplexes, and irrigation accounts.

**Group 2 (subject to tiers 1 and 2):**

Multi-family residential, mobile home parks, commercial, and public-owned properties such as city parks and schools.

**Water Utility Rates**

Customers Inside the City Limits		2007 Rates	2008 Rates
Base Rate	Volume in Cubic Ft*	\$8.83	\$9.27
Tier 1	First 600	0.735	0.7718
Tier 2	601-1200	1.7253	1.8116
Tier 3	1201-2400	2.2051	2.3154
Tier 4†	> 2400	2.2051	3.0918

\* 1 Cubic Foot = 7.48 Gallons

† Tier 4 becomes effective January 1, 2008

**Looking for Leaks? Use Your Meter!**

Use your water meter to check your plumbing system for leaks. First, turn off all indoor and outdoor water faucets and appliances. Then write down the numbers on the face of your water meter. (Most meters in Lacey's system have a face that looks like the odometer on a car.) Refrain from using any water for at least one hour and then read the meter again. If the numbers match, you're leak-free. If not, subtract the first reading from the second to determine how much water is leaking from your system.

If you determine that there is a leak on your property, please contact Lacey Water Resources for guidance on locating and repairing the leak.



**Dripping or leaking faucets can waste hundreds of gallons of water a year.**



## City of Lacey Water Quality Monitoring Summary

During 2006, Lacey's water met all state and federal drinking water standards. The City of Lacey tests its water for over 200 different substances – both regulated and non-regulated. The chart below lists the highest and lowest levels regulated substances detected at any one of the sample locations, providing the range of detections from all sample locations.

**Health Related (Primary) Standards:** Primary standards are intended to protect the public from substances that may be harmful to humans if consumed over long periods of time. EPA standards are set at levels that protect our most sensitive population, such as infants and the elderly.

Substance	Highest Level Allowed (MCL)	Goal Not to Exceed (MCLG)	Highest Level Detected	Lowest Level Detected	Sample Date of Highest Level	In Compliance?	Typical Sources
Arsenic	10 ppb	0 ppb	3 ppb	< 2 ppm	2/12/2003	Yes	geology, natural weathering
Nitrate	10 ppm	10 ppm	5.1 ppm	<0.2 ppm	12/28/2006	Yes	septic systems, fertilizer, animal waste
Total Coliform Bacteria	5% samples/month	0% samples/month	0% of samples	0% of samples	---	Yes	naturally present in environment
Total Trihalomethanes	80 ppb	N/A	1.64 ppb	Range: nd - 12.3 ppb (running annual average)	10/26/2006	Yes	reaction of chlorine with naturally-occurring organic matter
Total Haloacetic acids	60 ppb	N/A	0.28 ppb	Range: nd - 0.7 ppb (running annual average)	10/26/2006	Yes	reaction of chlorine with naturally-occurring organic matter
Chlorine Residual	4 ppm	4 ppm	1.0 ppm	0.2 ppm	4/23/2006	Yes	chlorine has been added to the entire Lacey water system since May 2005
Radium 228	5 pCi/L	N/A	1 pCi/L	0.318 pCi/L	9/6/2005	Yes	geology, natural weathering
Chloride	250 ppm	---	44 ppm	2 ppm	3/18/2005	Yes	geology, natural weathering
Fluoride	4 ppm	4 ppm	0.3 ppm	<0.2 ppm	10/30/2003	Yes	geology, natural weathering

**Aesthetic (Secondary) Standards & Other Characteristics:** Secondary standards ensure aesthetic qualities of water such as taste, odor and clarity. These standards govern substances that may influence consumer acceptance of water, rather than health related effects.

Substance	Highest Level Allowed (MCL)	Goal Not to Exceed (MCLG)	Highest Level Detected	Lowest Level Detected	Sample Date of Highest Level	In Compliance?	Typical Sources
Iron	300 ppb	N/A	26 ppb	<30 ppb	5/8/2002	Yes	geology, natural weathering
Manganese	50 ppb	N/A	30 ppb	<10 ppb	11/9/2006	Yes	geology, natural weathering
Sulfate	250 ppm	---	12 ppm	2 ppm	12/27/2003	Yes	geology, natural weathering
Conductivity	700 µmhos/cm	---	444 µmhos/cm	84 µmhos/cm	3/18/2005	Yes	geology, natural weathering

**Lead and Copper Monitoring Results:** Taken at the customer's tap.

Substance	State Action Level	Goal Not to Exceed (MCLG)	90% Percentile	# Samples Over State Action Level	Sample Date of Highest Level	In Compliance?	Typical Sources
Copper	1300 ppb	N/A	950 ppb	1 sample	11/23/2004	Yes	Corrosion of household plumbing or erosion of natural deposits
Lead	15 ppb	N/A	4 ppb	0 samples	9/20/2005	Yes	Corrosion of household plumbing or erosion of natural deposits

**Unregulated Contaminants:** These substances are disinfection by-products that must be monitored but have no MCL or AL. EPA requires additional monitoring for a number of unregulated contaminants that have no MCL or AL. Utilities are required to report any detected concentrations in their annual report.

Substance	Highest Level Allowed (MCL)	Goal Not to Exceed (MCLG)	Highest Level Detected	Lowest Level Detected	Sample Date of Highest Level	In Compliance?	Typical Source
Chloroform	N/A	---	1.9 ppb	< 0.5 ppb	10/26/2006	Yes	Byproduct of disinfection. Concentration is included in Total Trihalomethanes.

## Lacey Drinking Water Sources

The City of Lacey uses twenty one wells to draw its water from three underground aquifers. The water is pumped to stations throughout the city and delivered to customers through a common distribution system.

Additional water is periodically purchased from Olympia's water system to help meet peak demand. Olympia's water comes from McAllister Springs and several groundwater wells. Water quality data from Olympia is listed in the chart below.

## What Is An Aquifer?

Aquifers are natural, underground water sources that carry and store significant amounts of groundwater within layers of gravel, rocks and sand. Aquifers are resupplied or "recharged" as water slowly filters down through the soil layers.

## What Kinds of Substances Can Contaminate Drinking Water?

Sources for drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or flows underground through aquifers, it dissolves salts, minerals and in some cases radioactive material, and picks up substances caused by the presence of animals and human activity.

### Contaminants May Include:

- Microbial contaminants, such as viruses and bacteria, can come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals (naturally-occurring or from urban stormwater runoff, industrial or domestic wastewater discharge, oil and gas production, mining, or farming).

- Pesticides and herbicides from agriculture, urban stormwater runoff, residential use, and other sources.

- Synthetic and volatile organic chemical contaminants are by-products of industrial processes and petroleum production can also come from gas stations, urban stormwater runoff, and septic systems.

- Radioactive contaminants (naturally-occurring or the result of oil and gas production and mining activities).

## Who Sets the Standards for Water Quality?

The City of Lacey continually monitors its water supply to meet strict standards set by the Environmental Protection Agency. EPA regulations protect public health by limiting the amount of allowable contaminants in public water systems. Food and Drug Administration regulations require the same protection for bottled water.

## Water Quality Results for McAllister Springs

The City of Lacey periodically purchases water from the City of Olympia to help meet peak demand. Olympia's water comes from McAllister Springs. Water quality data from this source must be provided in this report for your information.

**Health Related (Primary) Standards:** Primary standards are intended to protect the public from substances that may be harmful to humans if consumed over long periods of time. EPA standards are set at levels that protect our most sensitive population, such as infants and the elderly.

Substance	Highest Level Allowed (MCL)	Goal Not to Exceed (MCLG)	Olympia Water Amount Detected	Range of Detection (Low/High)	Testing Frequency	Typical Sources of Contamination
Total Coliform Bacteria	95% of samples must have zero detections	Zero	No samples had confirmed detections	Zero	60 times per month minimum	Soil bacteria and fecally-contaminated water
Chlorine Residual	4.0 ppm	Detectable amount of 0.05 ppm	0.13 - 0.83 ppm	0.13 - 0.83 ppm	Metered continuously	Chlorine is used as a disinfectant in the water treatment process
Haloacetic Acids	60 ppb	Zero	1.1 ppb	0.0 - 1.1 ppb	Quarterly	Disinfection by-products caused by a chemical reaction between chlorine and naturally-occurring organic matter in water
Total Trihalomethanes	80 ppb	Zero	5.7 ppb	1.2 - 5.7 ppb		

### Other Primary Standards:

Substance	(MCL)	(MCLG)	McAllister Springs
Arsenic	10 ppb	10 ppb	2.0 (2006)
Fluoride	4 ppm	2 ppm	0.2 (2005)
Nitrates	10.0 ppm	5.0 ppm	2.66 (2006)

**Aesthetic (Secondary) Standards & Other Characteristics:** Secondary standards ensure aesthetic qualities of water such as taste, odor and clarity. These substances influence consumer acceptance of water, rather than health-related effects.

Substance	(MCL)	(MCLG)	McAllister Springs
Iron	0.3 ppm	0.3 ppm	None Detected
Manganese	50 ppb	50 ppb	None Detected



### How Can I Learn More?

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

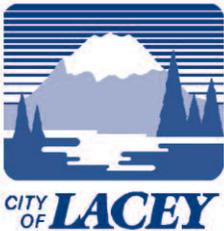
- For questions about your utility bill, call Lacey Utility Billing, 360-491-5616.
- For questions about drinking water safety, call the EPA Safe Drinking Water Hotline, 1-800-426-4791, or visit the EPA Homepage at [www.epa.gov/OW](http://www.epa.gov/OW).

### How Can I Get Involved?

- Join us for a Utilities Committee meeting on the third Thursday of each month at 4pm at Lacey City Hall, 420 College Street SE in Lacey. The committee discusses issues regarding our stormwater, drinking water, and wastewater utilities.
- Attend a City Council meeting on the second & fourth Thursday of the month January through October and the first and third Thursdays for November and December. Meetings begin at 7pm 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](http://www.ci.lacey.wa.us).

*Some people may be more vulnerable to contaminants in drinking water than the general population. Most commonly at risk are immunocompromised individuals such as those undergoing chemotherapy, people who have had organ transplants, those with HIV/AIDS or other immune system disorders, as well as some elderly adults and infants. These individuals should seek advice about drinking water from their health care providers. The Environmental Protection Agency/Center for Disease Control provide guidelines for reducing the risk of infection by Cryptosporidium and other microbial contaminants. Call the Safe Drinking Water Hotline at 800-426-4791.*

*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 rain-fall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.*



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