



2015 Water Quality Report



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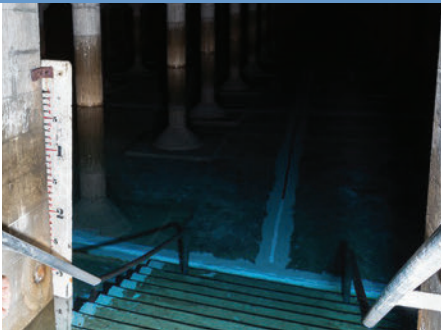
YOUR WATER SYSTEM: FROM SOURCE TO TAP

PURE WATER FROM THE GROUND

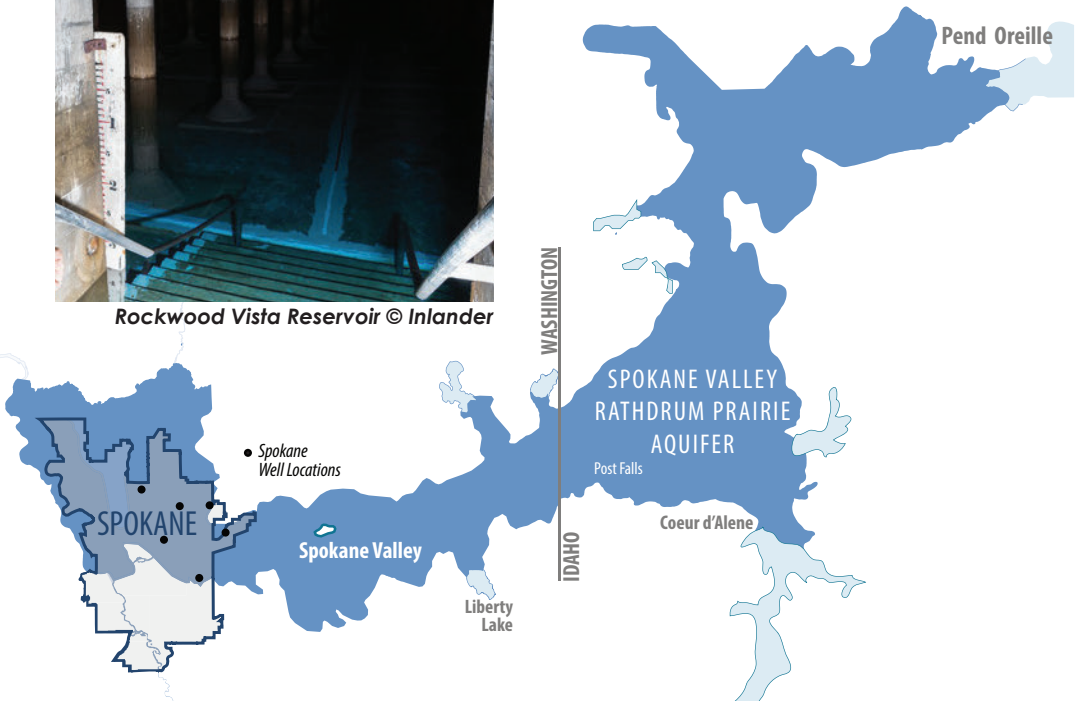
The Spokane Valley - Rathdrum Prairie Aquifer was created by Ice Age floods that deposited a thick layer of boulders and gravel. This rock and gravel layer is now filled with water and extends 370 square miles from Pend Oreille Lake in Idaho to just past the western edge of the City of Spokane. It ranges in surface depth from a few feet in some areas to as much as 500 feet in others.

We are working and living over our drinking water source. Since our water is beneath us, it is important that we follow good stewardship practices and not pour anything on the ground or in storm drains that you would not want to drink.

For more information, visit:
www.spokaneaquifer.org.



Rockwood Vista Reservoir © Inlander



1 The City of Spokane has seven wells located throughout the City from which it draws water directly from the aquifer. The water from the aquifer is pure enough to be pumped directly from the ground without any treatment. We simply add chlorine to the water to ensure that purity is maintained throughout the distribution system.

3 More than 1,000 miles of water mains are located throughout the City. Water reaches your house directly from service lines running off smaller mains. To meet customers' needs, the City has over 100 million gallons of water stored in reservoirs. The amount of water stored in a given tank depends on both the water demand for that area as well as the fire protection requirements.

2 To pump the water up to storage tanks and reservoirs, booster stations are located throughout the city. These stations contain large pumps and motors to help move the well water from lower elevations to the tanks at higher elevations within the distribution system. Water at a higher elevation in a tank provides water pressure to the homes below it.

4 Throughout the year, hundreds of water quality tests are performed, water mains, valves and meters are repaired and replaced, and water department personnel continually search for leaks and problems to ensure you the best drinking water possible. Highly trained operators monitor the distribution system from a 24-hour control center. Ultimately, the water system is extensive and requires thousands of staff hours to maintain and operate.



Water tank at 33rd and Lamonte

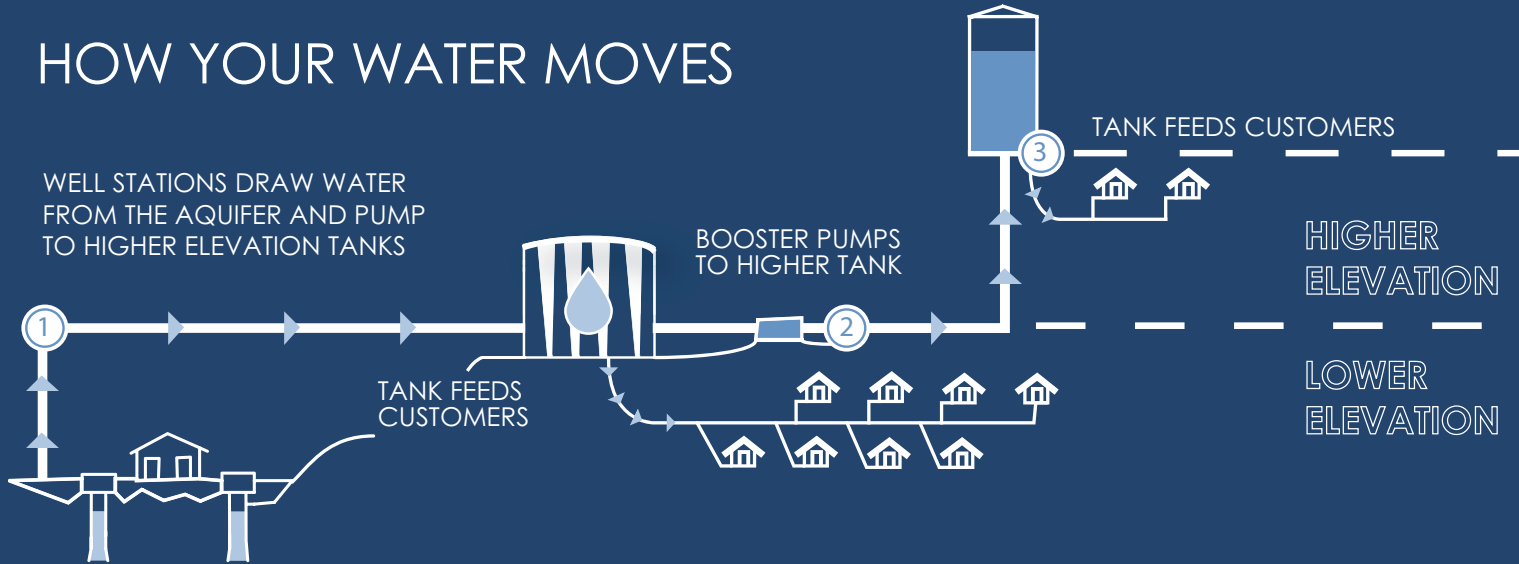


Upriver Hydroelectric Facility

COME TOUR THE UPRIVER DAM AND WELL COMPLEX

Areas of interest include: the aquifer, hydroelectric power, the water control center, the water quality lab, and how water gets from the well to your house. All interested groups should call ahead; supervision is required for small children. Give us a call! **509-742-8141**

HOW YOUR WATER MOVES

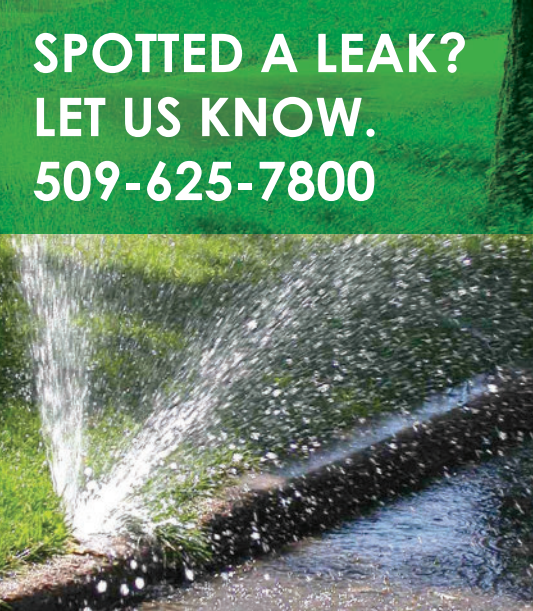


Our water system spans 157 square miles and has more than 1,070 miles of transmission main.

WATER EFFICIENCY: THE KEY TO A SUSTAINABLE FUTURE

The City of Spokane has taken an active role to safeguard the quality and quantity of our water supply and additional steps to conserve water through educational programs, metering water use, repairing leaking pipes, and implementing a conservation-oriented rate structure.

In April 2014 new Water Use Efficiency Goals were adopted based on metered usage. The goals are 0.5% annual residential indoor water use reduction and 2% annual reduction in outdoor irrigation for residential, commercial/ industrial, and government use.



2015 GOAL RESULTS
Three of the four goals were achieved in 2015. June 2015 was the hottest on record in Spokane and one of the driest. This weather resulted in increased outdoor irrigation. Help us meet this year's goals by using less water this summer and save money on your water bill at the same time.

2015 Water Use Efficiency Goals		
	Goal (gal/day)	Use (gal/day)
Indoor Residential Use	121	120
Outdoor Residential Use	516	562
Outdoor Commercial/ Industrial Use	4,318	3,837
Outdoor Government Use	4,822	4,772

DISTRIBUTION SYSTEM LOSS

The Water Use Efficiency Rule (WUE) requires that each water system calculate the water system loss to leakage. The calculations determine the volume of water that cannot be attributed to delivery to a customer and is assumed to be lost to the ground.

To comply with the WUE standard for Distribution System Loss (DSL), a water system must have a 3-year running average of less than 10%. The DSL for the City of Spokane Water System for 2015 is 13.4% and the three year average is 16.4 %, which means the City has not met the DSL standard.

Water Department personnel identify leaks using state-of-the-art, sonic leak detection equipment. These crews have been instrumental in reducing the amount of unaccounted water throughout the distribution system. An aggressive leak detection program is a key element in the Water Department's conservation efforts.

2013 - 2015 Distribution System Loss				
	2013	2014	2015	Average
DSL, percent	17.9%	17.8%	13.4%	16.4%
DSL, volume (gallons x 1000)	3,787,117	4,032,455	3,206,643	3,675,402

The DSL is calculated using the following method: $DSL = [(TP - AC) / (TP)] \times 100$
Where: Percent of Distribution System Leakage (DSL) Total Water Produced and Purchased (TP) Authorized Consumption (AC)



TIPS TO USE LESS

- 1 Place a pitcher of water in your refrigerator instead of letting the tap run until it's cold.
- 2 Turn off the faucet while brushing your teeth or shaving and you can save 2 or more gallons per minute.
- 3 Take a shorter shower. Just 2 minutes less could save you 4,600 gallons a year.
- 4 Instead of using running water, thaw frozen foods in the refrigerator.
- 5 Find out if you have a leak by reading your water meter before and after a 2 hour period when no water is being used. If the readings are different-you have a leak.
- 6 Wash only full loads of dishes and clothes to make the most of the washing cycle.

TOOLS TO USE LESS



FREE Adjustable Hose nozzle and repair kit*

The average garden hose uses 10 gallons of water per minute! Prevent water wasting by always using a nozzle on your hose. Kit also contains repair parts and washers.

*Available ONLY to City of Spokane Water customers while supplies last. Bring your water bill to the My Spokane Customer Service Desk at City Hall to receive your kit. Limit one per utility account.



FREE Indoor Water Saving Kit*

Showers use both water and energy to heat the water. Switch to a high efficiency showerhead and save! This kit also includes faucet aerators and toilet leak detection tablets.

*Available ONLY to City of Spokane Water customers while supplies last. Bring your water bill to the My Spokane Customer Service Desk at City Hall to receive your kit. Limit one per utility account.



FREE Fix-A-Leak Kit*

A constant running toilet can waste 72,800 gallons per year! Find and fix your household leaks. This kit includes toilet leak detection tablets, toilet water displacement bags, and plumbers tape.

*Available ONLY to City of Spokane Water customers while supplies last. Bring your water bill to the My Spokane Customer Service Desk at City Hall to receive your kit. Limit one per utility account.

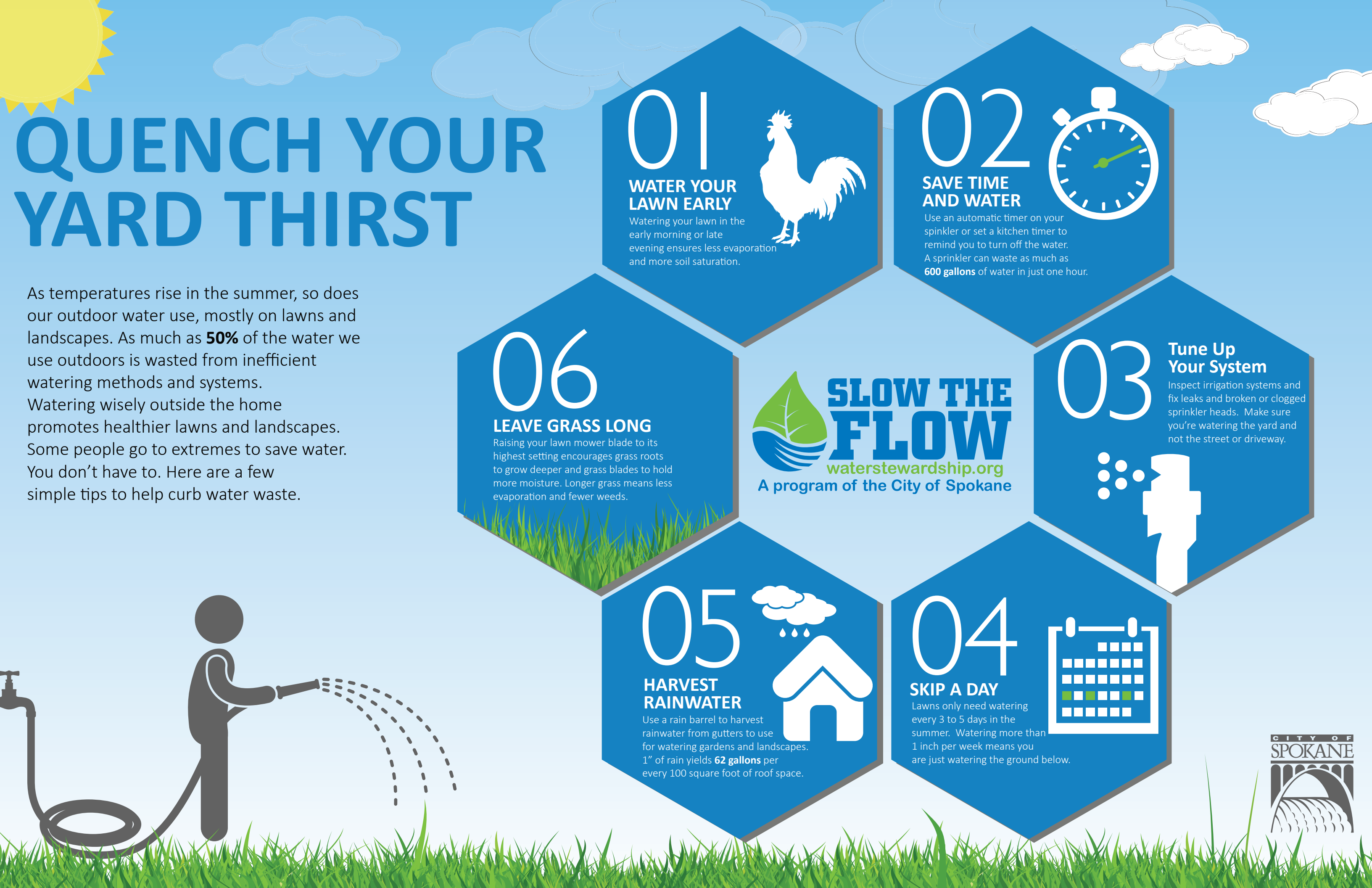
FREE Sprinkler System Reviews For Customers

Sprinkler systems can waste a tremendous amount of water if they're not working properly and it is often difficult for someone not trained in this field to detect the problems. That's why the City of Spokane offers customers a free irrigation assessment, which features a visit to your property from an Irrigation Specialist.

The Irrigation Specialist will assist customers in learning about their control clock system, current scheduling methods, and will provide a test run of the irrigation system to identify any maintenance issues. They can also address many other concerns that may exist in one's particular landscape. All important steps in meeting your property's watering needs, potentially saving you water and money.

A limited number of the 45 minute appointments are available, Sign Up Today!
waterstewardship@spokanecity.org 509-742-8144





QUENCH YOUR YARD THIRST

As temperatures rise in the summer, so does our outdoor water use, mostly on lawns and landscapes. As much as **50%** of the water we use outdoors is wasted from inefficient watering methods and systems. Watering wisely outside the home promotes healthier lawns and landscapes. Some people go to extremes to save water. You don't have to. Here are a few simple tips to help curb water waste.

01

WATER YOUR LAWN EARLY

Watering your lawn in the early morning or late evening ensures less evaporation and more soil saturation.



02

SAVE TIME AND WATER

Use an automatic timer on your sprinkler or set a kitchen timer to remind you to turn off the water. A sprinkler can waste as much as **600 gallons** of water in just one hour.



06

LEAVE GRASS LONG

Raising your lawn mower blade to its highest setting encourages grass roots to grow deeper and grass blades to hold more moisture. Longer grass means less evaporation and fewer weeds.



SLOW THE FLOW

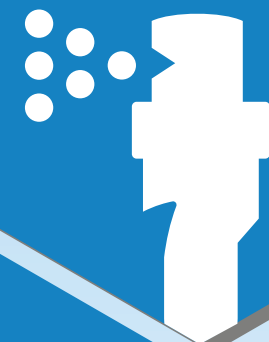
waterstewardship.org

A program of the City of Spokane

03

Tune Up Your System

Inspect irrigation systems and fix leaks and broken or clogged sprinkler heads. Make sure you're watering the yard and not the street or driveway.



05

HARVEST RAINWATER

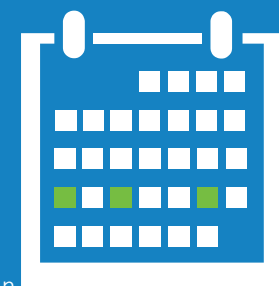
Use a rain barrel to harvest rainwater from gutters to use for watering gardens and landscapes. 1" of rain yields **62 gallons** per every 100 square foot of roof space.



04

SKIP A DAY

Lawns only need watering every 3 to 5 days in the summer. Watering more than 1 inch per week means you are just watering the ground below.



WATER QUALITY DATA

Spokane's drinking water meets or exceeds all water quality standards. 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 land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances from the presence of animals or from the presence of human activity.

All 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 can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at **1-800-426-4791** or visiting **www.epa.gov/sdwa**.

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations which limit the amount of certain contaminants in the water provided by public water systems. U.S. Food and Drug Administration regulations establish the limits for contaminants in bottled water, which must provide the same protection for public health.

SPECIAL NOTICE

For the elderly, infants, cancer patients, people with HIV/AIDS, or other immune problems

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immune-compromised persons such as those with cancer undergoing chemotherapy, transplant recipients, persons with HIV/AIDS or other immune disorders, some elderly and infants can be particularly at risk

for infection. These people should seek advice from their health care providers. The US EPA - Center 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 **1-800-426-4791**.

RADON

Radon is a naturally occurring radioactive gas that is common in the Spokane area. During 2014, the City conducted tests from two source wells for Radon-222. The single highest result was 443pCi/L and the lowest was 441pCi/L. Exposure to excessive amounts of radon may increase cancer risk.

Compared to radon entering the home through soil, radon entering the home through tap water would, in most cases, typically be 1–2 % of the radon in indoor air. For local information concerning radon in your home, call the EPA's Radon Hotline (800-SOS-RADON).

POTENTIAL CONTAMINANTS		
Contaminant	Type	Sources
Microbiological	Viruses & Bacteria	Sewage treatment plants, septic waste, agricultural, and livestock runoff
Inorganic Chemical	Salts & Metals	Naturally-occurring; urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming
Organic Chemical	Pesticides & Herbicides	Residential and agricultural use, urban storm water runoff
	Synthetic & Volatile	Byproducts of industrial processes and petroleum production, gas stations, urban storm water runoff, and septic systems
Radioactive	Natural & Man Made Deposits	Mining, gas, and oil production, naturally occurring



DETECTED CONTAMINANTES

The results of monitoring in 2015 are shown in the table below. These results are for parameters regulated by the federal and state agencies. For other water quality information, check our website www.spokanecity.org/publicworks/water/quality or call 509-625-7800.

Contaminant	Units	MCLG	MCL	Average	Range	Possible Source
SOURCE WATER TESTING						
Arsenic	µg/L	0	10	(a)	2.5 to 4.4	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Nitrate	mg/L	10	10	(a)	0.68 to 3.23	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural deposits
Gross Alpha	pCi/L	0	15	(a)	<1.0 to 1.5	Erosion of natural deposits
Combined Radium 226 & 228 (b)	pCi/L	0	5	(a)	<0.5 to 1.5	Erosion of natural deposits
Chromium	µg/L	100	100	(a)	0.238 to 1.3	Discharge from steel and pulp mills; Erosion of natural deposits
END OF PIPE TESTING						
Total Trihalomethanes	µg/L	0	80	3.94	2.06 to 5.02	By-product of drinking water chlorination
Chromium	µg/L	100	100	(a)	0.208 to 0.296	Discharge from steel and pulp mills; Erosion of natural deposits
	Viola-tion	MCLG	MCL	Highest % Detected	Sample Date	Possible Source
Coliform Bacteria	No	0	5%	0.6%	6/6/2015	Naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present

See page 8 for information on Lead and Copper

UNREGULATED CONTAMINANTES IN SOURCE WATER & DISTRIBUTION SYSTEM

During 2015 the City of Spokane conducted testing in compliance with the federal Unregulated Contaminant Monitoring Rule-Round 3. While not being regulated, these contaminants were detected.

Contaminant	Units	MCLG	MCL	Range	Possible Source
Chlorate	µg/L	n/a	n/a	<20 to 21	Agricultural defoliant or desiccant; disinfection byproduct; use in production of chlorine dioxide
Chlorodifluoromethane	µg/L	n/a	n/a	<0.08 to 0.14	Chlorofluorocarbon; occurs as a gas and used as a refrigerant; a low-temperature solvent, and in fluoro-carbon resins -especially tetrafluoroethylene polymers.
Hexavalent Chromium (chromium-6)	µg/L	n/a	n/a	0.194 to 0.823	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.
Molybdenum	µg/L	n/a	n/a	1.23 to 1.67	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form- molybdenum trioxide used as a chemical reagent.
Strontium	µg/L	n/a	n/a	72.6 to 156	Discharge from steel and pulp mills; Erosion of natural deposits
Vanadium	µg/L	n/a	n/a	0.21 to 0.565	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathodray tube televisions to block x-ray emissions.

TERMS AND ABBREVIATIONS

Some of the terms and abbreviations contained in this report are unique to the water industry and might not be familiar to all customers. Terms used in the table are explained below.

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

LRAA: Locational Running Annual Average
Maximum Contaminant Level (MCL) - The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

ppb: same as µg/L, micrograms per liter, and parts per billion

Treatment Technique (TT) - A required process intended to reduce the level of a contaminant in drinking water.

Picocuries per liter (pCi/L) - a measure of radioactivity.

ND: None Detected

NOTES

(a) Compliance with MCL is determined by single sample results, so no average is used

(b) Gross Alpha results were used in lieu of Radium 226, one half of the detection limit of 1.0 was used for the ND.

A WORD ABOUT LEAD

Lead is a naturally occurring metal that is all around us. It was used for many years in paints, plumbing and other products found in and around homes. 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 Spokane Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

During 2015, the City tested 58 at-risk residences for lead. The single highest result was 13.5 ppb. This result for lead is below the 15 ppb Action Level for lead.

You can check what your service line is made of online. Go to: maps.spokanecity.org/

First, search for an address and zoom in. Then, turn on the “water” layer under utilities and click on the blue line that leads to the property; it will say it’s copper or galvanized or lead. Some service lines are listed as unknown.

For more information on service line materials and options for lead service line replacement please call the Water Department at (509)625-7800.

LEAD SERVICE LINE REPLACEMENT

With national and statewide attention on lead in drinking water, the City of Spokane has initiated a program to immediately begin replacement of the remaining 486 lead service lines in our system over the next two to three years.

This number represents less than one percent of the City’s 75,000 service

connections. Originally, the City had nearly 1,000 lead service lines, but efforts to remove those pipes over the years cut that number in half. Lead service lines were installed in the early to mid-1940s when World War II efforts made other materials scarce; many of the lead connections are found in the Shadle area of Northwest Spokane.

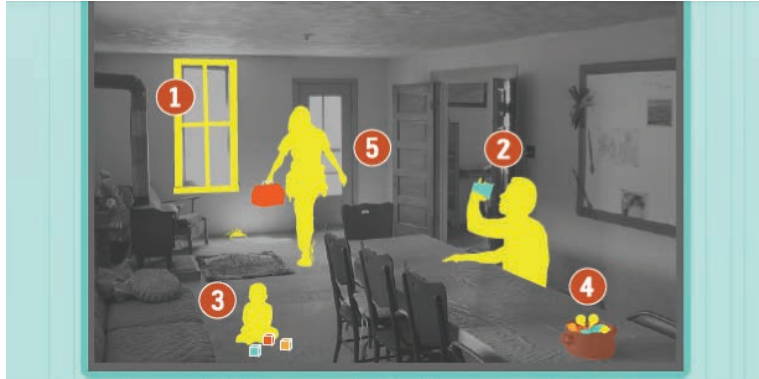
“Removing the lead connections in our system just makes sense,” says Mayor David Condon. “Protecting public health has to be the priority, and we’re taking a sensible action to reduce health risks for some residents.”

The City’s water system has routinely met all water quality standards for lead, determined through testing for lead in the City’s water system at homes with lead service lines. Water from the Spokane Valley-Rathdrum Prairie Aquifer is less corrosive than most surface water sources because it is hard and not acidic. Still, removing the pipes eliminates a potential contamination source.

The City’s Water Department estimates the replacement program will cost up to \$3 million. There is no cost to the homeowner. All affected homeowners have been notified by letter of the program.

2015 LEAD AND COPPER MONITORING RESULTS						
Parameter	Units	MCLG	MCL	90th Percentile	Houses Exceeding AL	Possible Source
Copper(a) - tested August 2015	mg/L	1.3	TT, AL=1.3	0.06 (b)	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead(a) - tested August 2015	µg/L	0	TT, AL=15	5.12(b)	0	Corrosion of household plumbing systems; Erosion of natural deposits

(a) Faucet samples were from 'at risk' homes (those with lead service lines and those with copper pipes with lead solder joints). (b) 90% of at risk homes had this concentration or less of lead/copper.



- 1** Homes built before 1978 (when lead-based paints were banned) probably contain lead-based paint.
- 2** When the paint peels and cracks, it makes lead dust. Children can be poisoned when they swallow or breathe in lead dust.
- 3** Lead can be found in some products such as toys and toy jewelry.
- 4** Lead is sometimes in candies imported from other countries or traditional home remedies.
- 5** Certain jobs and hobbies involve working with lead-based products, like stain glass work, and may cause parents to bring lead into the home.

© Center for Disease Control

LEAD CAN BE FOUND THROUGHOUT YOUR ENVIRONMENT

It is important to know that there are many potential sources of lead in your home environment, and water may be only one. To help minimize lead exposure, you can:

- Talk with your local health department about testing paint and dust in your home for lead if you live in a home built before 1978.
- Renovate safely. Renovation activities like sanding, cutting, replacing windows, and more can create hazardous lead dust.
- Remove recalled toys from children and discard as appropriate. Stay up-to-date on current recalls by visiting: www.cpsc.gov.
- If 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.

For more information on lead visit: www.cdc.gov/nceh/lead

YOUR PARTICIPATION IS WELCOME

The Mayor recommends Water Department policy and rates to the Spokane City Council. The Council meets every Monday, excluding holidays, at 6:00 pm in the Council Chambers at City Hall (808 W Spokane Falls Blvd., Spokane, WA).

City of Spokane Water Department
(509) 625-7800 (24 Hours a Day)
www.spokanewater.org

City of Spokane
Environmental Programs
(509) 625-6570

Department of Ecology
Eastern Regional Office
(509) 329-3400

Spokane Regional Health District
(509) 324-1560

Spokane County
Water Resources (Division of Utilities)
(509) 477-3604

Office of Drinking Water
Washington Department of Health
Eastern Regional Office
(509) 329-210



Entrance to Water Tank at 33rd and Lamonte

English:
This report contains important information about the drinking water supplied by the City of Spokane. Translate it, or speak with someone who understands it well.

Russian:
В этом отчете содержится важная информация относительно питьевой воды, поставляемой службой города Спокэн. Переведите этот отчет или поговорите с тем, кто его хорошо понимает.

Spanish:
Este reporte contiene información importante acerca del agua potable suministrada por la Ciudad de Spokane. Tradúzcalo, o hable con alguien que lo entiende bien. Para ver información adicional, visite al; <http://www.epa.gov/safewater/agua.html>.

Vietnamese:
Bản phúc trình này chứa đựng những thông tin quan trọng về nước uống được cung cấp bởi City of Spokane. Hãy phiên dịch, hay hỏi thăm người nào hiểu rõ về tài liệu này.



The City of Spokane Water Department
914 E North Foothills
Spokane, WA 99207
509-625-6800



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