



2013 CONSUMER CONFIDENCE REPORT

An Annual Report on the Source and Content of Spokane's Water



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The City of Spokane's Water Department is proud to present you with the 2013 Consumer Confidence Report. In 2013, your tap water met or surpassed all U.S. EPA and Washington State Department of Health drinking water standards. The Water Department is dedicated to maintaining this level of quality through careful monitoring, customer service, and efficiency in operations. In addition, we operate our own state-certified Water Quality Laboratory. The laboratory conducts tests in conformance with State and Federal regulations to ensure the quality of your drinking water. This report is to inform you about your drinking water, and the standards it meets or exceeds annually.

FEATURES

A Tour of Your Water System
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Your Participation is Welcome

The Mayor recommends Water Department policy and rates to the Spokane City Council. The Council meets every Monday at 6 p.m. 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

Washington State
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

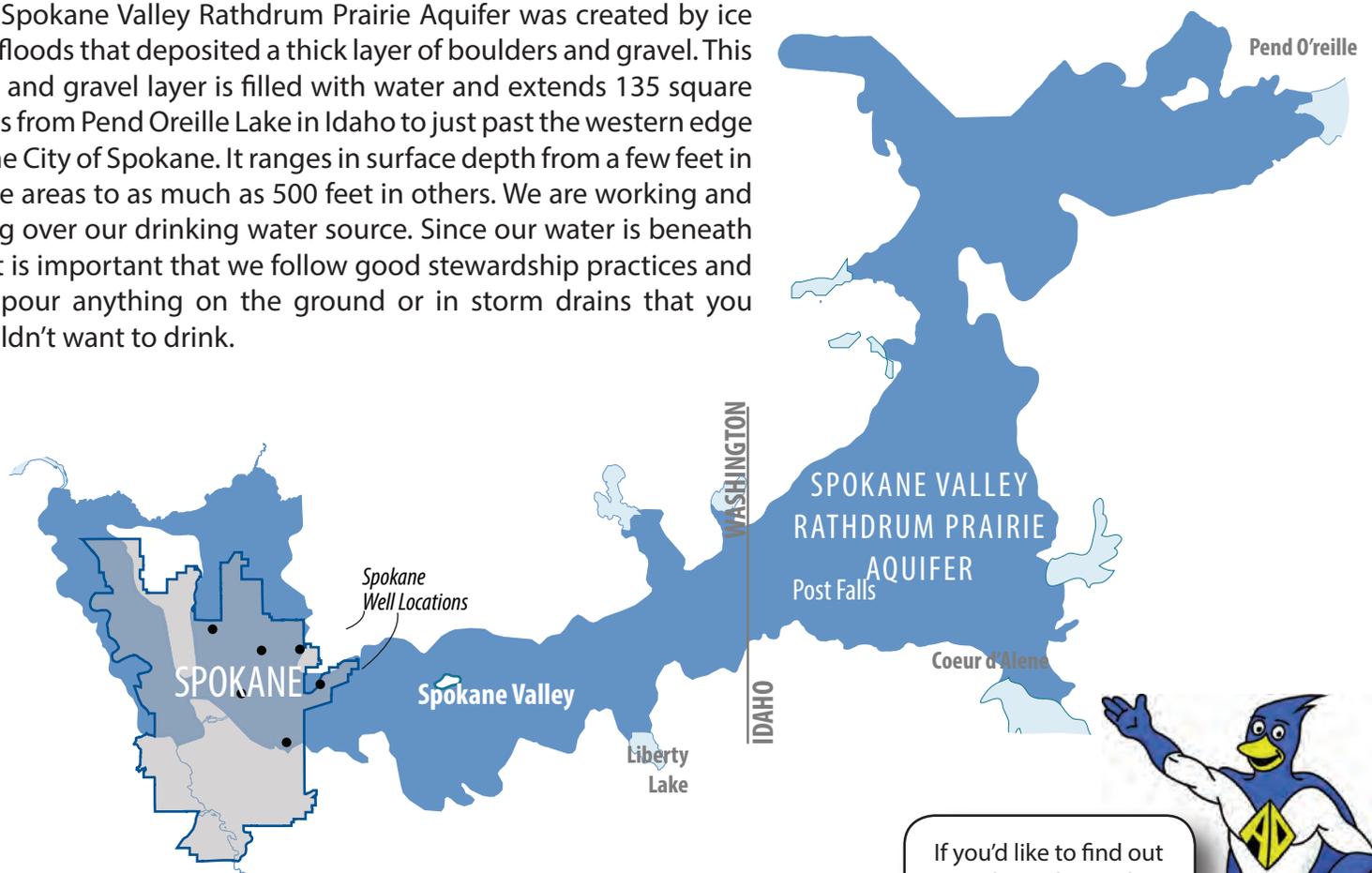
Office of Drinking Water
Washington Department of Health
Eastern Regional Office
(509) 329-2100



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TOUR Your Water System From Source to Tap

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 filled with water and extends 135 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 wouldn't want to drink.



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 to customers from the ground without treatment. We do add chlorine to the water to ensure that its purity is maintained throughout the water distribution system, which includes many miles of pipes.

If you'd like to find out more about the Spokane Valley-Rathdrum Prairie Aquifer, go to www.spokaneaquifer.org



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Transmission Piping From Well Station

From the wells, water is sent into the distribution system. More than 1,000 miles of water mains are located throughout the City. In addition, the City also maintains a complex array of pumps, booster stations, and storage facilities. The mains must be maintained and replaced as they age or leaks occur. Designated water department personnel evaluate portions of the distribution system on a rotating schedule. State-of-the-art, sonic leak detection equipment is used to identify water escaping from the pipes. An aggressive leak detection program is



a key element in the Water Department's conservation efforts. Detection and repair of damaged pipelines also improves the overall health and quality of the water distribution system.

Water reaches your house directly from service lines connected to smaller mains. Since the demand for water changes throughout the day and night, it is not practical or economical for the wells to supply all the water during peak hour demands. To meet customers' needs, the City has more than 100 million gallons of water stored in reservoirs. With adequate storage, water can be supplied at a relatively even rate over a 24-hour period. 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. In other words, there must be enough water for fire fighters to use to douse a high-demand fire. The City has 34 storage facilities located throughout the system. Placement and size of these storage facilities was determined by the needs of each given area.



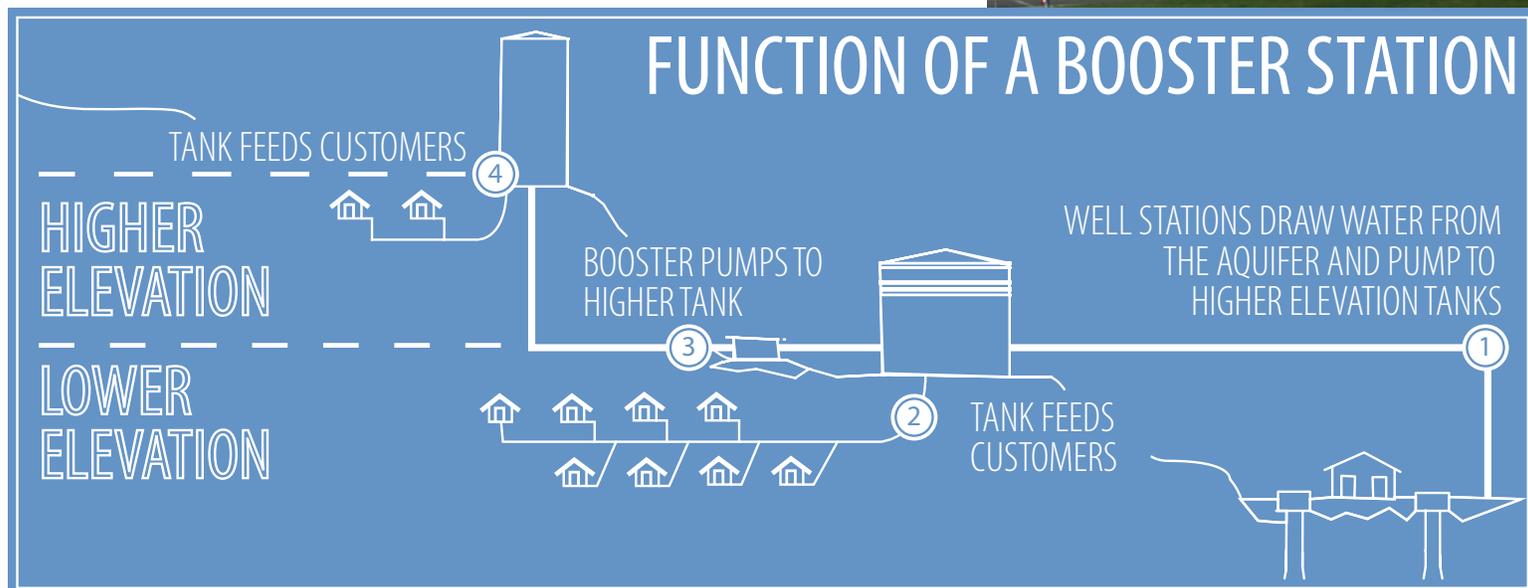
Images: 1. Booster Station Pumps 2. 14th & Grand Tank 3. Installing a T in a Transmission Main

TOUR Your Water System From Source to Tap

To pump water 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. Water systems that are located in areas with widely varying elevations such as the City of Spokane must divide their distribution system into different pressure zones. The zones are created to maintain water pressure of around 40 psi (pounds per square inch). If the pressure is too high, it can cause problems with hot water heaters as well as contribute to leaks and service problems within the distribution system.

Ultimately, the water system is extensive and requires thousands of man-hours to maintain and operate. Highly trained operators monitor the distribution system from a 24-hour control center.



Throughout the year, hundreds of water quality tests are performed, water mains, valves and meters are repaired and replaced, and inspectors continually search for leaks and problems to ensure you the best drinking water possible. Spokane's water system is a marvel of engineering and has been safely operated for more than 120 years.

All of us at the Water Department look forward to providing high-quality water and service for decades to come. We hope you have enjoyed this "tour" of your water and encourage you to Tap Into The Goodness.



Do We Give Tours?

The City of Spokane Water Department gives tours to school and civic groups. If you are interested in a tour of the Upriver Dam and Well Complex, please call the dam at 742-8141 to schedule a time for your visit. 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 please call ahead, and provide supervision for small children. Give us a call!

Photo Ron Weimer © 2008

PRODUCTION AND DISTRIBUTION SYSTEM LEAKAGE (DSL)

The Water Use Efficiency Rule requires that each water system calculate the water system loss to leakage. Prior to this calculation, water systems also are required to install service meters on all direct service connections before January 22, 2017. The City of Spokane has had a long-standing policy of metering service connections. 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.

	2013
Total Water-Produced & Purchased, gallons	21.2 billion
DSL, percent	17.9 %
DSL, volume, gallons	3.79 billion

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)

In 1986 the City purchased its first electronic leak detector and has continued to maintain a full time leak detection crew for the past 20 years. These designated crews have been instrumental in reducing the amount of unaccounted for water throughout the distribution system. To comply with the Water Use Efficiency Rule standard for DSL a water system must have a 3-year running average be less than 10%. The DSL for the City of Spokane Water System for 2013 is 17.9% and the three year average is 19.3 %, which means the City has not met the DSL standard.

GOALS

The City of Spokane City Council adopted the Water Stewardship Strategic Plan, which includes the Water Use Goals, at a public hearing on May 1, 2006. This Plan includes Goals for per capita reductions in water use. It is our estimate that the City met its seasonal goals for October through March and April through June, but not for July through September 2013. The table to the right demonstrates the seasonal pumpage for 2013 and the seasonal goals adopted for 2013. In the results are the difference between the Goal and the Use as a percentage, a positive value equals exceedances of the goal.

In April 2014, the City Council adopted revised Water Use Efficiency Goals. Future reports will detail progress based on the new goals. The new goals include:

- Reduction of indoor residential water usage by 0.5 percent annually.
- Reduction of outdoor residential use, outdoor metered irrigation commercial/industrial use, and outdoor metered governmental use by 2 percent annually.

Water Year	2013 Pumpage (1,000 Gallons)		
	Period	Total	Goal
Oct. (prev. yr.) through Mar.	6,178,688	7,020,000	-12.0%
Apr. through Jun.	6,118,455	6,950,000	-12.0%
Jul. through Sept.	8,850,530	8,580,000	9.7%

Sum of seasonal totals 21,147,673



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POTENTIAL SOURCES OF WATER CONTAMINATION

Across the nation, the sources of drinking 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 human activity.

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

All drinking water may contain contaminants

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 (1-800-426-4791).

To ensure that tap water is safe to drink, the U.S. EPA sets regulations that 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 protections for public health.



A word about some specific contaminants.....

Radon

Radon is a naturally occurring radioactive gas that is common in the Spokane area. During 2013, the City conducted tests from three source wells for Radon-222. The single highest result was 542 pCi/L and the lowest was 515pCi/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, be 1% to 2 % of the radon in indoor air. For local information concerning radon in your home, see the Washington Dept. of Health Radon Outreach webpage (www.doh.wa.gov/CommunityandEnvironment/Contaminants/Radon.aspx) or call EPA's Radon Hotline (800-SOS-RADON).

Arsenic

Your drinking water currently meets EPA's revised drinking water standard for arsenic. However, it does contain low levels of arsenic. There is a small chance that some people who drink water containing low levels of arsenic for many years could develop circulatory disease, cancer, or other health problems. Most types of cancer and circulatory diseases are due to factors other than exposure to arsenic.

Lead

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 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 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 www.epa.gov/safewater/lead.

CONTAMINATES FOUND IN DRINKING WATER TESTING IN 2013

Source Water Testing

Contaminant	Units	MCLG	MCL	Average	Range	Possible Source
Arsenic	ppb	0	10	(a)	3.5 to 4.8	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Mercury	ppb	2	2	(a)	0.20 - 0.22	Erosion of natural deposits; discharge from factories and refineries; Runoff from landfills and croplands
Nitrate	ppb	10	10	(a)	0.72 to 3.59	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Combined Radium - (Radium 226 +228) (b)	pCi/L	0	5	(a)	1.28 to1.5	Decay of natural and man-made deposits
Gross Alpha emitters	pCi/L	0	15	(a)	< 1.0 to 1.5	Erosion of natural deposits

End of Pipe Testing

Contaminant	Units	MCLG	MCL	90th Percentile	Number of Sites Exceeding AL	Possible Source
Copper (c) - tested Summer 2012	ppm	1.3	TT,AL= 1.3	0.09 (d)	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (c) - tested Summer 2012	ppb	0	TT,AL= 15	3.80 (d)	0	Corrosion of household plumbing systems; Erosion of natural deposits

Contaminant	MCL	MCLG	highest percent detected	Sample date	Violation ?	Possible Source
Total Coliform Bacteria	5% of monthly samples are postivie	0	0.6 %	one detection on Sept. 9, 2013	No	Naturally present in the environment and are used as an indicator that other potentially harmful microbes may pe present

Contaminant	Units	MCLG	MCL	LRAA	Range	Possible Source
Total Trihalomethanes	ppb	0	80	3.56	0.54 to 4.26	By-products of drinking water chlorination

Terms Used

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 ug/L, micrograms per liter, and parts per billion

ppm - same as mg/L, milligrams per liter, and parts per million

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

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

ND - None detected

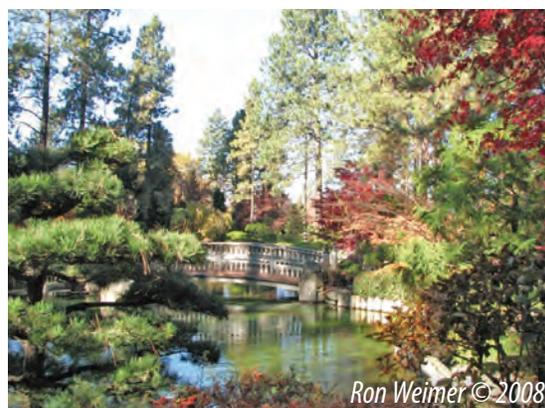
Notes

(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.

(c) Faucet samples were from 'at risk' homes (those with lead service lines and those with copper pipes with lead solder joints).

(d) 90% of at risk homes had this concentration or less of lead/copper



Integrating Transportation and Utility Planning

At the City of Spokane, we are working to align our organization for the future. We want to gain efficiencies, reduce duplication, and give citizens the greatest value for their money.

One major step in that direction is a project to integrate planning for transportation and utility infrastructure.

Consider a three-dimensional view of a street. Included in that view are traditional surface mobility uses for cars, pedestrians, and bicyclists, along with below-ground connectivity for private utilities and, more importantly, for public utilities including water, wastewater, and stormwater.

We are updating our 20-year Comprehensive Plan to consider our street right-of-way in this holistic way. We're calling the update Link Spokane, and it's the first time we'll prioritize work considering all the uses for our streets.

This approach allows us to tear up the street once, do all the work that's needed—above and below ground, and look for opportunities to create additional benefits. We can improve parks, create safe routes to schools, enhance neighborhoods, improve drinking water delivery, and help encourage private economic investment.

A great example of this approach is a 20-block section of Crestline Street on the South Hill. The project started as a needed replacement of a 36-inch water main. Ultimately, we rebuilt the street, added bike facilities and sidewalks, installed stormwater swales, replaced trees and coordinated with private utilities and Spokane County. The project cost about \$1 million less than if the components were done independently of one another.

In the end, we'll get better results for fewer dollars. That's the kind of value our citizens deserve from their City government. More information is available at spokanecity.org/projects/linkspokane/.

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. Immunocompromised 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 U.S. EPA - Center for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available by calling the Safe Drinking Water Hotline 1-800-426-4791.

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.