



City of Spokane Water Department

2023

Technical Drinking Water Report

REPORT ON CITY OF SPOKANE DRINKING WATER FOR 2023

TABLE OF CONTENTS

Executive Summary	2
Introduction and Source Water Information	3
QUALITY Drinking Water.....	4
INORGANICS	4
<i>ARSENIC</i>	4
<i>BARIUM</i>	4
<i>LEAD - COPPER</i>	4
<i>NITRATE - NITROGEN</i>	5
RADIONUCLIDES & RADON	6
<i>RADIONUCLIDES</i>	6
<i>RADON</i>	7
<i>DISINFECTION BY-PRODUCTS – DISTRIBUTION SYSTEM</i>	8
<i>VOLATILE ORGANICS</i>	9
<i>SYNTHETIC ORGANICS</i>	9
<i>PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)</i>	9
MICROBIOLOGICAL CONTAMINANTS	10
<i>COLIFORM BACTERIA - SOURCE</i>	10
<i>HETEROTROPHIC PLATE COUNT BACTERIA – SOURCE</i>	10
<i>COLIFORM BACTERIA - DISTRIBUTION SYSTEM</i>	10
<i>PROTOZOA</i>	11
GENERAL INFORMATION.....	12

LIST OF FIGURES

Figure 1 Aquifer Nitrate level.....	6
Figure 2 Disinfection Byproduct Monitoring Sites.....	8
Figure 3 Coliform Monitoring Sites.....	11

LIST OF TABLES

Table 1 List of Resources	3
Table 2 Ray Street Well Nitrate levels.....	5
Table 3 City Source Well Nitrate levels	5
Table 4 Radionuclide Results	6

APPENDICES

Appendix I - <i>Tests Run on City of Spokane Water</i>	14 -15
Appendix II - <i>Summary of Completed Quarterly Monitoring 2023</i>	16
Appendix III - <i>Drinking Water Inorganics Summary (Certified Laboratory)</i>	17
Appendix IV - <i>Distribution System Disinfection Byproducts</i>	18-19
Appendix V – <i>Summary of PFAS results for 2023</i>	20
Appendix VI - <i>Contaminants found in Drinking Water Testing in 2023</i>	21



Executive Summary

Spokane's drinking water meets or exceeds all State and Federal drinking water quality standards. This annual report prepared by the City of Spokane's Water Department supports and informs our Water Department annual Consumer Confidence Report, distributed as the City of Spokane Water Quality Report. This report provides wholesale water customers, businesses, and the public with a more detailed discussion, with additional references, a complete list of the year's testing, and thorough consideration on the reasons for testing.

The City tested for 35 different inorganic parameters. There were detections of regulated chemicals; arsenic, barium, and nitrate.

The City tested all our source wells for 25 per and polyfluorinated alkyl substances (PFAS). There were detections at two wells Grace and Ray Street. Ray Street was sampled each quarter in 2023. The highest detection at Ray Street was PFOS (Perfluorooctanesulofonic acid) at 4.9 ng/L on October 24th. Grace's highest detection was 2.11 ng/L of PFOS on April 25th. These results are below the State Action Levels. The EPA has not established maximum contaminant levels for PFAS.

The drinking water was tested for 163 organic compounds, and none were detected.

Radionuclide testing revealed detectable levels of radon in the drinking water.

In home testing for lead and copper was performed in August of 2021. 64 homes were sampled. The highest concentration of lead in a sample was 5.46 µg/L (ppb) for lead and 111 µg/L for copper. The regulatory point is the 90th percentile sample. For lead this was 1.83 µg/L and for copper 80.9 µg/L. These results for lead and copper are less than the 15 µg/L Action Level for lead and the 1300 µg/L Action Level for copper. The homes tested had copper service lines. The City completed the removal of all known residential lead service lines in 2018. In home sampling for lead and copper is scheduled for August of 2024.

The City disinfects the drinking water with chlorine gas, resulting in the generation of low concentrations of disinfection byproducts. The city tests for nine of these compounds quarterly. There were detections at the farthest reaches of the distribution system.

The City tests both the source water and the distribution system for microbiological contaminants. In 2023, there was one unconfirmed detection of total coliform in the distribution system during routine regulatory sampling.

The following narrative and attachments summarize and explain recent results in more detail. Appendix VI and the last two pages of this narrative (General Information) contain information relevant to the annual Consumer Confidence Report. As such, the information may be redundant relative to the main text of this report.

The detections mentioned are below applicable drinking water standards. The results were within the range of results from previous testing. Arsenic, Barium, and radon are from naturally occurring geological sources. Nitrate is primarily from anthropogenic sources such as fertilizer and septic systems but has declined in recent years with the conversion of individual septic systems to centralized sewer systems.

Introduction and Source Water Information

All the City of Spokane’s drinking water comes from the Spokane Valley-Rathdrum Prairie Aquifer - designated a sole source aquifer in 1978. It is the only significant source of drinking water for the City. The Spokane Valley-Rathdrum Prairie Aquifer slowly flows through two different states and a number of different counties and is the source water for a large number of water purveyors, including the City of Spokane. This water and any contaminants freely move across political boundaries. Many groups and/or private individuals may claim this water to be used for diverse purposes. Some of these competing interests include (but are not limited to) drinking water rights, irrigation, fisheries, hydroelectric power, and industrial processes. The Spokane Aquifer (that portion of the larger aquifer lying within Washington State) and the Spokane River exchange water. While the aquifer contains a large volume of water, many factors play into the volume of water in the Spokane River, complicating the management of these resources. Some of these factors include pumping for irrigation and potable water, hydroelectric dam operations, and the variations of weather and precipitation. Learn more about the Spokane Valley-Rathdrum Prairie Aquifer by downloading the Aquifer Atlas from www.spokanecounty.org/1227/SVRP-Aquifer-Home

The City of Spokane's Water Department delivers up to 150 million gallons of clean, safe drinking water every day to more than 249,000 people in our community. The City's water system is the fourth largest in the state of Washington based on number of connections behind Seattle, Tacoma, and Vancouver. Our water system includes pumps, reservoirs, seven source wells, and more than 1,000 miles of water mains and smaller water lines that bring water from our wells to homes and businesses.

Due to the porous nature of the ground surface and the number of potential contaminant sources, the possibility of contaminating the aquifer exists if good housekeeping measures are not followed for all activity over and adjacent to the aquifer. The physical and economic health of our area depends on the quality of our drinking water. To safeguard water quality, the City continues its efforts to make available to the community information about, and appropriate disposal mechanisms for, dangerous wastes that are generated in the Aquifer Sensitive Area. The City, in cooperation with other local governments and the Spokane Aquifer Joint Board (SAJB), continues to work toward strengthening regulations for the storage and use of critical materials to safeguard the local water supply. The SAJB is 21 local water purveyors that work together to ensure safe drinking water for all of their customers.

For additional information regarding the City of Spokane’s drinking water or related issues:

City of Spokane Water Department	(509) 625-7800	www.spokanewater.org/
Spokane County - Water Resources	(509) 477-7579	www.spokanecounty.org/1200/Water-ResourcesA
Spokane Regional Health District – Environmental Health Div.	(509) 324-1560	www.srhd.org/programs-and-services/#-environmental-hazards-resources
Washington State Department of Health - Eastern Regional Office (Drinking Water)	(509) 329-2100	www.doh.wa.gov/YouandYourFamily/HealthyHome/DrinkingWater
Washington State Department of Ecology – Eastern Regional Office	(509) 329-3400	www.ecy.wa.gov/
U.S. EPA Safe Drinking Water Hotline	1-800-426-4791	www.epa.gov/your-drinking-water

Table 1 List of Resources



QUALITY Drinking Water

An Invaluable Community Resource

INORGANICS

The City typically has a Washington State Department of Ecology accredited laboratory run a full drinking water inorganics analysis once every three years on each of our source wells. In addition, nitrates are tested annually, as required. The most recent inorganic results for all wells from accredited laboratories are in Appendix III. **All sources are in compliance with existing National Primary Drinking Water Regulations for Inorganic Maximum Contaminant Levels (MCL).**

ARSENIC

The arsenic readings at Grace and Hoffman source wells were 2.5 µg/L, and 2.4 µg/L respectively. The MCL for arsenic is 10 µg/L, or parts per billion (ppb). For City drinking water, 5.13 µg/L of arsenic in 2009 from Ray Street Well represents the highest result to date.

City drinking water currently meets EPA’s drinking water standard for arsenic. However, it does contain low levels of arsenic. EPA’s standard balances the current understanding of arsenic’s health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Further information concerning health impact issues, regulatory requirements, and compliance costs for water utilities/water customers can be found at www.doh.wa.gov/Portals/1/Documents/Pubs/331-167.pdf.

BARIUM

The barium readings in 2023 for the Grace and Hoffman source wells were 0.015 mg/L, and 0.022 mg/L respectively. The MCL for barium is 2 mg/L. For City drinking water the highest result for barium is 0.0595 mg/L from the Ray Street well in 2018.

LEAD - COPPER

Lead and copper testing of sources and at-risk residences were conducted in 2021. The highest reading of lead in a home was 5.46 µg/L (ppb). The maximum reading for copper was 111 µg/L. These results for lead and copper are less than the 15 µg/L Action Level for lead and the 1300 µg/L Action Level for copper. The lead results, based on City in-home sampling, also continue to qualify our water system as having “Optimized Corrosion Control.” The City is on a 3-year sampling schedule. The next in-home sampling is 2024.

City drinking water currently meets EPA’s drinking water standards for lead and copper. The EPA standard for lead balances the current understanding of lead health effects against the effectiveness and cost of corrosion control processes. The EPA released new rules for lead and copper testing in December of 2021 which will be effective in October 2024. For more information on the revised lead and copper rule visit the EPA page at www.epa.gov/ground-water-and-drinking-water/review-national-primary-drinking-water-regulation-lead-and-copper

In May 2016, the City initiated a program to eliminate the final 486 lead service lines. In July of 2018, the City completed its program to remove the remaining lead service lines in the City’s water system. City records indicate that originally some 981 homes built during World War II were connected to the City’s distribution system with lead alloy pipes. In addition, before lead solder was banned in 1988, it was commonly used to connect copper piping in homes.

Sampling methods require testing water left sitting in lead-containing pipes, including those copper service lines with lead solder, for at least 6 hours. This results in a worst-case scenario for lead to move into the water. The City encourages anyone with this kind of plumbing, drawing water for cooking or drinking purposes, to let water run from the tap until cold before filling their container, especially if the water is to be given to infants or children.

For further information concerning lead in drinking water, you can go to the Washington State Department of Health www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/Contaminants/Lead. Or the EPA at www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water

Further information about copper in drinking water can be found at www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/Contaminants/Copper

Drinking water is only one of many potential sources of exposure to lead. An EPA publication titled “Protect Your Family From Lead In Your Home” can be downloaded from www.epa.gov/lead/protect-your-family-lead-your-home.

NITRATE - NITROGEN

The Ray Street Well continues to be monitored quarterly for Nitrate-N. **In 2023, the highest accredited lab quarterly result for the Ray Street Well was 2.83 mg/L**, or parts per million (ppm). The federal MCL for Nitrate –N is 10 mg/L. The result from a duplicate sample analyzed by the Riverside Park Water Reclamation Facility (RPWRF) Laboratory was 3.20 mg/L. The quarterly results for Ray Street Well for 2023 are as follows:

<i>Sample Date</i>	<i>Accredited Laboratory Result - Nitrate-N, mg/L</i>	<i>RPWRF Laboratory Result – Nitrate+Nitrite-N, mg/L</i>
24-January-2023	2.83	3.20
25-April-2023	2.55	2.74
25-July-2023	2.40	2.73
24-October-2023	2.72	3.00

Table 2 Ray Street Well Nitrate levels

All other City sources average 1.01 mg/L for 2022, less than a fifth of the MCL for nitrate-nitrogen. The 2023 results for the other City source wells are as follows:

<i>Source Well</i>	<i>Accredited Laboratory Result - Nitrate-N, mg/L</i>	<i>RPWRF Laboratory Result – Nitrate+Nitrite-N, mg/L</i>
Well Electric	1.20	1.34
Parkwater	1.43	1.27
Hoffman	1.18	1.25
Grace	0.67	0.75
Nevada	0.80	1.01
Central	0.79	0.87
Federal MCL	10	

Table 3 City Source Well Nitrate levels

The following map depicts the results of monitoring wells sampled during 2023 by the Spokane County Water Resources Program. The results are for nitrate+nitrite as nitrogen from monitoring wells and springs along the Spokane River and purveyor wells over the Spokane Aquifer. Where multiple sampling events occurred at the same location, the highest

result is depicted on the map. There are several wells that had results between 2.51 and 4.40 mg/L. These wells, including the City of Spokane Ray Street Well, are typically located along the edge of the aquifer and appear to be subject to nitrate loading to the aquifer that originates at higher elevations.

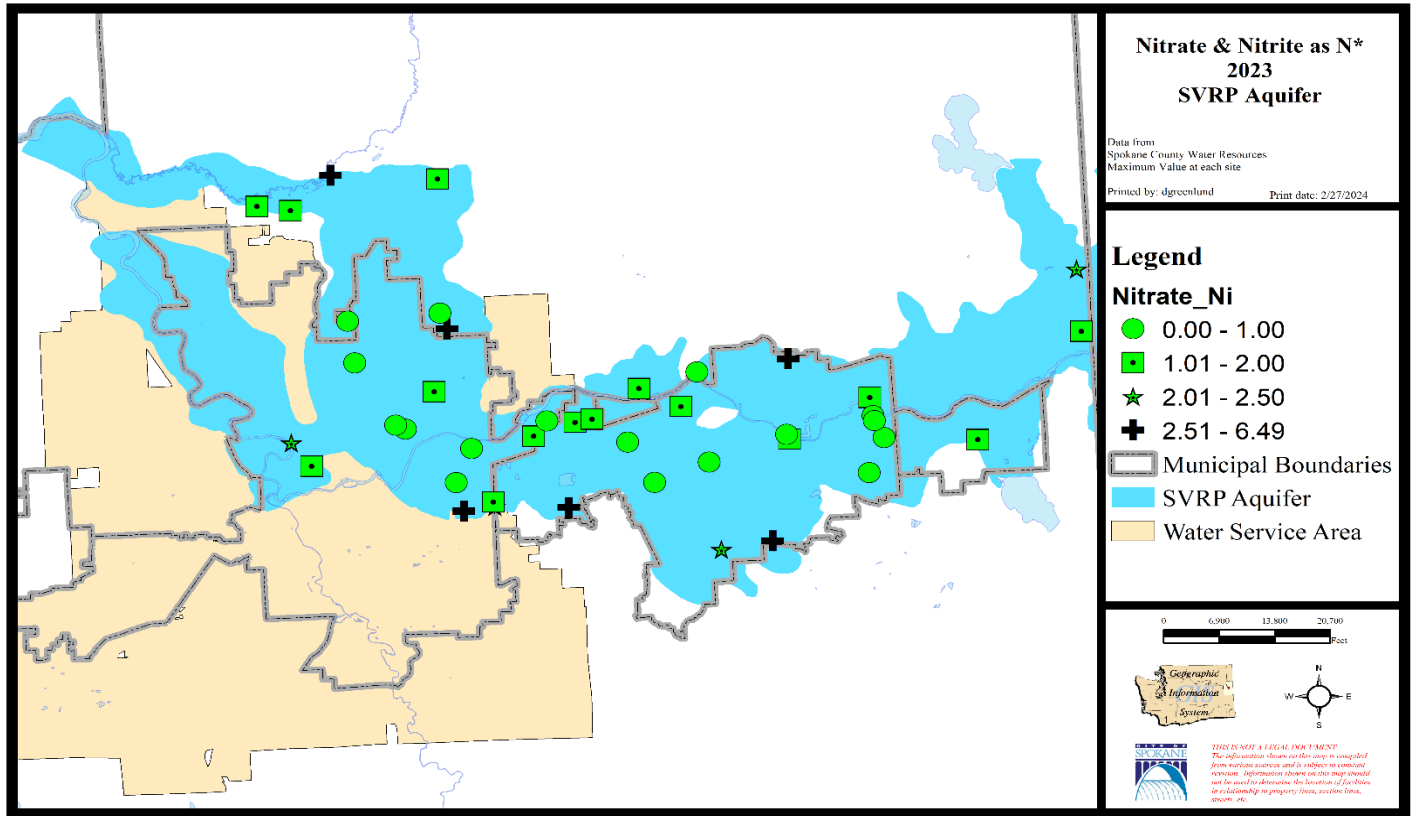


Figure 1 Aquifer Nitrate level

For further information concerning nitrate in drinking water and potential health issues, you can access the Washington State Dept. of Health website at www.doh.wa.gov/Portals/1/Documents/Pubs/331-214.pdf.
 (Para ver información adicional, visite al; www.doh.wa.gov/Portals/1/Documents/Pubs/331-214s.pdf)

RADIONUCLIDES & RADON

RADIONUCLIDES

In 2023, the City of Spokane tested the Parkwater and Ray Street source wells for Radium 228 and Gross Alpha. The following table has the results.

	Gross Alpha	Radium 228	Combined 226 / 228
Parkwater	< 3	< 1	1.5
Ray Stret	< 3	< 1	1.5
MCL	15		5

Table 4 Radionuclide Results

All results in picocuries per liter (pCi/L)

Gross Alpha particle activity has an MCL of 15 pCi/L. The federal MCL for Radium 226 and Radium 228 (combined) is 5 pCi/L. **The City of Spokane results were below the MCL.**

The radionuclide rule allows Gross Alpha results to be used in lieu of Radium 226 if the Gross Alpha particle activity is below 5 pCi/L. If the gross alpha particle activity result is below the detection limit, one-half of the detection limit is used to determine compliance¹. The radionuclide rule also allows a Gross Alpha particle activity measurement to be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/l. The Gross Alpha activity was below 15 pCi/L, so the City did not test for Uranium.

For more information on radionuclides visit the EPA at <https://www.epa.gov/dwreginfo/radionuclides-rule>

* If the Radium 228 or 226 value is <1.0, a value of zero will be used to calculate the Combined Radium 226/228².

RADON

The Water Department monitored the Parkwater and Ray Street source wells for radon in 2023, with results of 544 pCi/L, and 435 pCi/L respectively.

The Environmental Protection Agency has published a proposed rule for regulating the concentration of radon-222 in drinking water. The rule proposes a maximum contaminant level goal (MCLG) of zero, a maximum contaminant level (MCL) of 300 pCi/L, and an alternative maximum contaminant level (AMCL) of 4000 pCi/L.

Comments for the proposed rule were accepted until February 4, 2000; however no final rule was promulgated and at this time the regulatory action is not on the EPA agenda list.

Currently, water purveyors are required to inform their customers of known results for Radon-222 testing, which the City of Spokane voluntarily monitors.

Radon gas is one of a number of radioactive elements that result from the radioactive decay of uranium found locally in natural deposits. Exposure to excessive amounts of radon may increase cancer risk. Most of these risks result from exposure to radon in indoor air. The EPA has determined that 1-2% of the radon in indoor air comes from drinking water. General information concerning radon in the environment and the associated health issues, including drinking water, can be found at www.epa.gov/radon or call the Radon Hotline at 1-800-SOS-RADON [1-800-767-7236]. An EPA publication titled "A Citizen's Guide to Radon" can be downloaded from [2016_a_citizens_guide_to_radon.pdf \(epa.gov\)](https://www.epa.gov/radon/national-radon-action-plan-strategy-saving-lives) The EPA has published a National Radon Action Plan (<https://www.epa.gov/radon/national-radon-action-plan-strategy-saving-lives>) to more broadly mitigate Radon exposure.

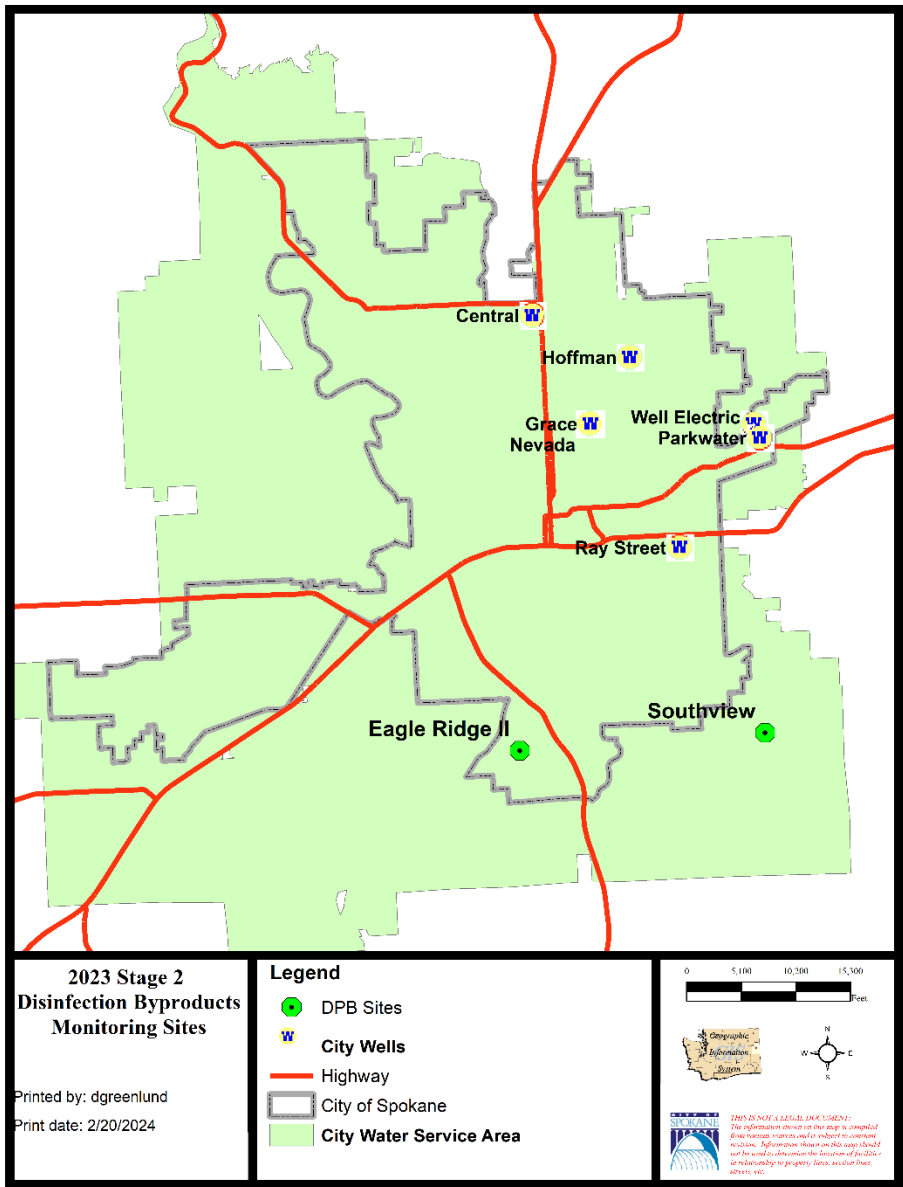
¹ 40 CFR 141.26a (5)

² 40 CFR 141.26c (3) v

ORGANICS

DISINFECTION BY-PRODUCTS – DISTRIBUTION SYSTEM

The maximum value during 2023 compliance monitoring of the distribution system for total trihalomethanes (TTHM) was 3.39 µg/L and for haloacetic acids (HAA5) was no detection. This is well below the federal MCL of 80 µg/L for total trihalomethanes and 60 µg/L for the sum of five haloacetic acids. The by-products are only detected at the extreme end of the distribution system. The Stage 2 Disinfectants and Disinfection By-products Rule requires a Locational Running Annual Average (LRAA) be used for reporting compliance. This is the average of four quarterly samples for each sampling location. The City uses small amounts of chlorine as a drinking water disinfectant. However, the disinfectants themselves can react with materials in the water to form byproducts, which may pose health risks. The maximum value for TTHM was 4.28 µg/L. Appendix IV has the results for all 2023 quarterly sampling. There were no detections of haloacetic acids at any sampling sites in 2023.



In 2023, two sites were sampled every quarter. They were Eagle Ridge Two and Southview. For more information on the Stage 2 Disinfection and Distribution By-Product Rule (DPBR), go to the EPA website water.epa.gov/lawsregs/rulesregs/sdwa/stage2/index.cfm

2023 was the 13th year of sampling under the Stage 2 DPBPR. Starting in 2007 and continuing until 2010, the City Water Department performed assessment monitoring at over 20 locations (approximately five each year) to determine the potential for disinfection by-products (DBP) to be formed during the detention period in the distribution system. The DBP assessment sampling sites were selected from the existing coliform sampling sites. Based on this sampling and analysis of the retention time of water in the distribution system, locations were determined for the Stage 2 distribution system sampling program.

Figure 2 Disinfection Byproduct Monitoring Sites

VOLATILE ORGANICS

In 2023, the City of Spokane tested the Central and Nevada source wells for Volatile Organic Compounds (VOC). There were no detections. A complete list of the chemicals analyzed is in Appendix I.

Trihalomethanes (THMs; chloroform, bromoform, bromodichloromethane, dibromochloromethane) are one group of volatile organic compounds in the test panel, disinfection by-products. They can originate from chemical interactions between a disinfectant (chlorine gas in the City’s system) and any organic matter present in the raw water. **There were no detections of THMs in source water monitoring for 2023.**

SYNTHETIC ORGANICS

The City of Spokane sampled the Central, Grace, and Hoffman source wells for Synthetic Organic Chemicals (SOC’s) in 2023. There were no detections of SOC’s. Appendix I contains the list of 108 compounds. This includes pesticides, herbicides, PCB, and phthalates (plasticizers).

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

In 2023 the City tested all seven of our source wells and our new well under construction at 6th and Havana for 25 PFAS. There were detections at the Grace, Ray Street, and new Havana wells. with a reporting limit of 2 ng/L (parts per trillion). The complete list of compounds and laboratory results is in Appendix V. The table below has the detected results by the date sampled. The State Action Level (SAL) is presented in ng/L. All results are in ng/L or parts per trillion. ND means the compound was not detected in that sample. The detections are below the SAL of each compound.

	Ray Street	Ray Street	Ray Street	Ray Street	Grace	Grace	Havana	SAL
Compound	3/20/2023	4/25/2023	7/25/2023	10/24/2023	3/22/2023	4/25/2023	5/2/2023	
PFOA	2.75	2.97	ND	2.82	ND	ND	ND	15
PFOS	4.44	4.74	3.58	4.90	2.01	2.11	2.51	10
PFBS	2.89	2.90	2.22	3.49	ND	ND	ND	345
PFHxA	2.85	2.82	ND	2.70	ND	ND	ND	N/A
PFPeA	2.90	2.83	ND	2.99	ND	ND	ND	N/A

Table 5 PFAS Detections by well and sample date

In January of 2022 the State of Washington adopted rules on the testing of five PFAS compounds with monitoring requirements beginning in 2023. With this rule the state implemented State Action Levels (SAL) for these five PFAS. The SALs provide state public health recommendations for the safe, long-term consumption of drinking water, below which there is no known or expected health risk. For more information on the state rule including a list of the PFAS and the SALs visit, www.doh.wa.gov/CommunityandEnvironment/Contaminants/PFAS. This DOH website includes information on health effects, exposure pathways and reducing your exposure.

The Washington State department of health has developed a statewide PFAS testing results dashboard. PFAS testing are displayed for the entire state. Visit the site at www.doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/pfas/dashboard

The EPA is also implementing testing for PFAS. Unregulated Contaminant Monitoring Rule Round 5 (UCMR 5) will have 29 PFAS compounds. The sampling and testing are set to begin in 2024. For more information on UCMR 5 and the list of PFAS visit the EPA at www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule.

The EPA has proposed rules on PFAS. They are proposing federally enforceable MCL’s for 5 compounds. Visit this EPA site for the rule www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas For information on work the EPA is undertaking on PFAS in many areas including drinking water visit the EPA at www.epa.gov/pfas

MICROBIOLOGICAL CONTAMINANTS

COLIFORM BACTERIA - SOURCE

The City of Spokane well station raw source water (the water before disinfectant chlorination) has been tested regularly for coliform bacteria. While historically there has been no requirement to test for coliform bacteria in source water, the City has monitored for this water quality parameter. More recently, testing requirements to determine whether hydraulic continuity exists with the Spokane River have increased the testing frequency. **In 2023, out of 70 tests for coliform bacteria in the City source water wells, there were no detections of total coliform or fecal coliform.**

Out of 389 tests over the five-year period from 2019 through 2023, three positive total coliform results were found. The previous detection was in 2022. There have been no detections of fecal coliform in the source water during this time frame.

HETEROTROPHIC PLATE COUNT BACTERIA – SOURCE

In 2023, out of 70 Heterotrophic Plate Count (HPC) tests on source water, there were 12 positive results. The greatest concentration was 5 colonies per milliliter of sample at the Well Electric well. HPC tests were conducted 359 times over the five-year period from 2019 through 2023 on raw source water. There have been 57 positive HPC results. The maximum detection during this five-year period was 65 colonies per milliliter at the Central Well in 2022. Without regard to source water HPC levels, City source water is treated with chlorine to safeguard drinking water quality. This is done based on the historical use of open reservoirs (which no longer exist) and to preserve the sanitary quality when a well or piping is open to the environment during construction, repair, or routine maintenance. Some water utilities in this area (drawing from the same aquifer) do not add any disinfectant.

COLIFORM BACTERIA - DISTRIBUTION SYSTEM

Coliform testing is typically done four days a week from various points in the distribution system. The Water Department has more than 249,000 customers. This population tier³ requires taking 150 samples per month, which was adopted as the target for distribution system coliform monitoring by the Water Department in 2007. On September 6 there was a positive total coliform result in the distribution system. Pursuant to the Revised Total Coliform Rule, three resamples were obtained (one at the original sample site and two nearby customer connections). Also, pursuant to the Groundwater Rule, raw water samples were taken from source wells contributing to the pressure zone. The coliform detection was **not confirmed**. **During 2023, the City Water Department had 1987 coliform bacteria samples analyzed.** 1,983 coliform bacteria samples were analyzed in 2022 and, 1,986 samples were analyzed in 2021.

The Water Department staff has worked to refine the sampling sites for the distribution system. Concerns about inadvertent contamination of sampling sites and locations that don't adequately represent the distribution of the water system has caused the Water Department staff to establish more dedicated sampling sites at locations more representative of the entire system. Figure 3 is a map of the distribution system sampling sites during 2023, overlaid on the City's water service area. It is important to note that the sample sites are evenly placed based on the distribution system, which may not currently reach all parts of the water service area, and population density.

³ Ref. WAC 246-290-300 (3)(e-Table 2)

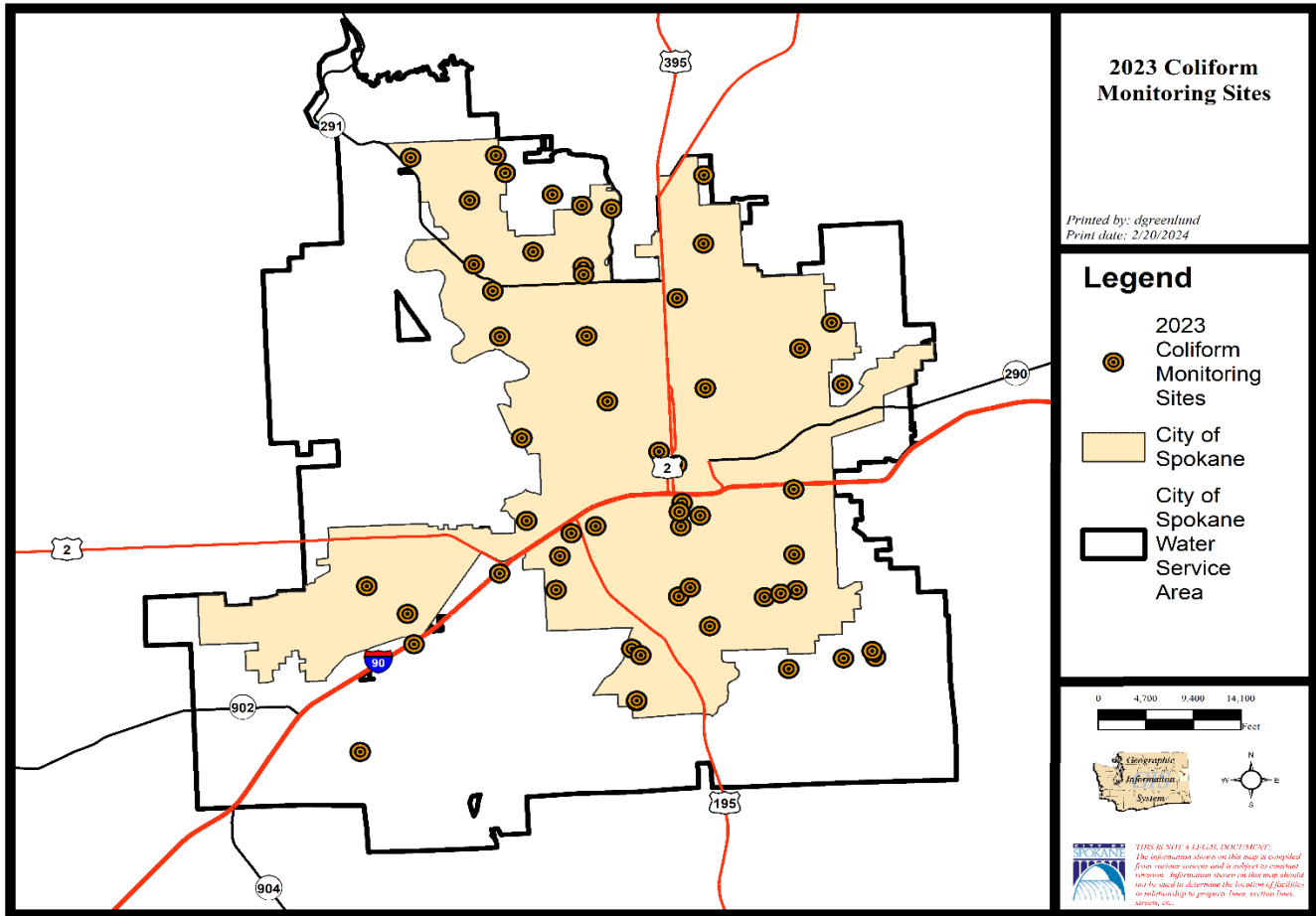


Figure 3 Coliform Monitoring Sites

PROTOZOA

A number of cities and towns throughout the country, in years past, have experienced problems with giardia and/or cryptosporidium getting into the distribution systems. Most times, problems with these parasitic organisms in potable water have been associated with surface water sources. The City of Spokane uses groundwater for our source of drinking water. The City of Spokane is not aware of cases where infections with these organisms were traced back to the City’s water system.

Please note that cryptosporidium and other water borne organisms can be spread in many ways. People who become ill as a result of consuming giardia and/or cryptosporidium typically recover after suffering severe bouts of diarrhea. However, small children, people whose immune systems are compromised, or those who are otherwise in poor health can die because of these infections. For further information concerning the potential health effects issues, access the websites at the CDC at www.cdc.gov/parasites/crypto/index.html (cryptosporidium) and www.cdc.gov/parasites/giardia/index.html (giardia).

GENERAL INFORMATION

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.

Spanish:

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

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.

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.

Across the nation, 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 radioactive material and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

- Biological 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 storm water run-off, 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, storm water run-off, and residential uses.
- Organic chemicals, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water run-off and septic systems.
- Radioactive materials, which can be naturally occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food & Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protections for public health.

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 contacting the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791), on line at www.epa.gov/your-drinking-water/safe-drinking-water-hotline, or you can access additional

information at EPA website: www.epa.gov/your-drinking-water

HEALTH INFORMATION

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).

Additional information concerning:

Radon: During 2023, the City conducted tests at Parkwater and Ray Street wells for Radon-222. The results were 544 pCi/L, and 435 pCi/L. The EPA has proposed a MCL of 300 pCi/L, which has not been finalized.

Radon is a radioactive gas that you can't see, taste, or smell and is a known carcinogen. Compared to radon entering the home through soil, radon entering the home through tap water will, in most cases, be a small source of radon in indoor air. Breathing air

containing radon can lead to lung cancer and/or drinking water containing radon also may cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call EPA's Radon Hotline (1-800-557-2366) or access the EPA website at www.epa.gov/radon/radon-hotlines-and-information-resources

Arsenic: The arsenic readings in 2023 at the Grace and Hoffman wells were 2.5 and 2.42 ppb respectively. The Maximum Contaminant Level (MCL) for Arsenic is 10 ppb.

City of Spokane drinking water currently meets EPA's revised drinking water standard for arsenic. However, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. Information on arsenic in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline.

Lead: In-home testing for lead was performed in 2021. The City tested 65 at-risk residences for lead. The single highest result was 5.46 ppb. This result for lead is below the 15 ppb Action Level for lead. The lead results, based on City in-home sampling, also continue to qualify our water system as having "Optimized Corrosion Control". Source water is analyzed for lead concurrent with the in-home testing. In 2021 the maximum concentration in the source water testing of all the wells for lead was less than 0.10 ppb.

All remaining known lead service lines in the City's water system were replaced during a program from 2016 to 2018.

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 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, 1-800-426-4791 or at www.epa.gov/your-drinking-water/basic-information-about-lead-drinking-water.

CITY OF SPOKANE'S SYSTEM

All the City of Spokane's drinking water comes from the Spokane Valley-Rathdrum Prairie (SVRP) Aquifer - designated a "sole source" aquifer in 1978. The Spokane Aquifer (that portion of the SVRP aquifer lying within Washington State) and the Spokane River exchange water. The rates and locations of exchange are the subject of continued study.

Due to the porous nature of the ground surface and the number of potential contaminant sources, the possibility of contaminating the aquifer exists if good "housekeeping" measures are not followed for all activity over and adjacent to the aquifer. To safeguard water quality, the City, in coordination with other stakeholders, is currently implementing a Wellhead Protection Program. This program endeavors to inform the public about the Spokane Valley-Rathdrum Prairie Aquifer, and about appropriate disposal mechanisms for dangerous and/or critical materials that are generated in the Aquifer Sensitive Area. The program is advocating land use regulations to help protect drinking water wells from contamination.

For additional information regarding the City of Spokane's Drinking Water or related issues, you can call:

City of Spokane Water & Hydroelectric Services

509-625-7800

The Mayor recommends Water and Hydroelectric Services policy and rates to the Spokane City Council.
The Council meets most Mondays at 6:00 p.m. in the Council Chambers at
Spokane City Hall (808 W. Spokane Falls Blvd., Spokane, WA).

Appendix I - Tests Run on City of Spokane Water

29-Feb-2024

FIELD TESTS

Chlorine, Free Residual
Conductivity
pH
Temperature
Turbidity

RADIONUCLIDES

Alpha emitters (gross)
Radon 222
Radium 228

MICROBES

BACTERIA
Total Coliform - Before & After Treatment
Fecal Coliform - Before & After Treatment
Heterotrophic Plate Count - Raw water

DISINFECTION BY-PRODUCTS

TRIHALOMETHANES
Chloroform
Bromoform
methane, Dibromochloro-
methane, Bromodichloro-
Total Trihalomethanes
FIVE HALOACETIC ACIDS (HAA5)
acetic Acid, Monochloro-
acetic Acid, Dichloro-
acetic Acid, Trichloro-
acetic Acid, Monobromo-
acetic Acid, Dibromo-

GENERAL INORGANICS

Color
Conductivity
Hardness, Total
Total Alkalinity
Total Dissolved Solids
Turbidity

INORGANIC IONS

Ammonia Nitrogen
Chloride
Cyanide
Fluoride
Nitrate Nitrogen
Nitrite Nitrogen
* Phosphorus
Silica
Sulfate

INORGANIC METALS

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Selenium
Silver
Sodium
Thallium
Zinc

VOLATILE ORGANICS

Benzene
benzene, 1,2,3-Trichloro-
benzene, 1,2,4-Trichloro-
benzene, 1,2,4-Trimethyl-
benzene, 1,3,5-Trimethyl-
benzene, Bromo-
benzene, Butyl-
benzene, Chloro-
benzene, Ethyl-
benzene, Isopropyl-
benzene, m-Dichloro-
benzene, o-Dichloro-
benzene, p-Dichloro-
benzene, Propyl-
benzene, sec-Butyl-
benzene, tert-Butyl-
Butadiene, Hexachloro-
Chloride, Carbon Tetra-
Chloride, Methylene (aka methane, dichloro)
Chloride, Vinyl
Chloroform (Freon 20)
ethane, Chloro

ethane, 1,1,1,2-Tetrachloro-
ethane, 1,1,1-Trichloro-
ethane, 1,1,2,2-Tetrachloro-
ethane, 1,1,2-Trichloro-
ethane, 1,1-Dichloro-
ethane, 1,2-Dichloro-
ethene, 1,1-Dichloro-
ethene, cis-1,2-Dichloro-
ethene, Tetrachloro-
ethene, trans-1,2-Dichloro-
ethene, Trichloro-
methane, Bromo-
methane, Bromochloro-
methane, Chloro-
methane, Dibromo-
methane, Dichlorodifluoro-
methane, Trichlorofluoro- (Freon 11)
Naphthalene
propane, 1,2,3-Trichloro-
propane, 1,2-Dichloro-
propane, 1,3-Dichloro-
propane, Dibromochloro- (DBCP)
propene, 1,1-Dichloro-
propene, 1,3-Dichloro-
propene, 2,2-Dichloro-
Styrene
Toluene
toluene, o-Chloro-
toluene, p-Chloro-
toluene, p-Isopropyl-
Xylene, m&p-
Xylene, o-
Xylene, total

* - Typically run by the City's Wastewater Laboratory only

Appendix I (continued)
SYNTHETIC ORGANICS

Acenaphthene
 Acenaphthylene
 Acifluorfen
 Adipate, Di-(2-ethylhexyl)
 Alachlor
 Aldicarb
 Aldicarb Sulfone
 Aldicarb Sulfoxide
 Aldrin
 Anthracene
 Anthracene, Benz(a)-
 Anthracene, Dibenzo(a,h)-
 Arochlor 1016
 Arochlor 1221
 Arochlor 1232
 Arochlor 1242
 Arochlor 1248
 Arochlor 1254
 Arochlor 1260
 Atrazine
 Baygon
 Bentazon
 benzene, Hexachloro-
 benzoic acid, 3,5-Dichloro-
 BHC (alpha)
 BHC (beta)
 BHC (delta)
 Bromacil
 Butachlor
 Carbaryl
 Chloramben
 Chlordane
 Chlordane, alpha-
 Chlordane, cis-
 Chlordane, trans-
 Chlorpyrifos

Chrysene
 Cyanazine
 D, 2,4-
 Dalapon
 DB, 2,4-
 DCPA (Dacthal)
 DDD, 4,4-
 DDE, 4,4-
 DDT, 4,4-
 Diazinon
 Dicamba
 Dichlorprop
 Dieldrin
 Dinoseb
 Diquat
 Endosulfan I
 Endosulfan II
 Endosulfan sulfate
 Endothall
 Endrin
 Endrin aldehyde
 Endrin ketone
 EPTC
 Ethylene Dibromide
 Fluoranthene
 Fluoranthene, Benzo(b)
 Fluoranthene, Benzo(k)
 Fluorene
 furan, 3-Hydroxycarbo-
 furan, Carbo-
 Glyphosate
 Heptachlor
 Heptachlor Epoxide
 Lindane
 Malathion
 MCPA

Methiocarb
 Methomyl
 Methoxychlor
 Metolachlor
 Metribuzin
 Molinate
 MTBE
 Nonachlor, cis-
 Nonachlor, trans-
 Oxamyl
 Parathion
 Pendamethalin
 pentadiene, Hexachlorocyclo-
 Permethrin
 Perylene, Benzo(g,h,i)
 phenol, Pentachloro-
 phenyls, Polychlorinated Bi- (PCB, total Arochlor)
 phthalate, Butylbenzyl-
 phthalate, Di-(2-Ethylhexyl)-
 phthalate, Di-n-Butyl-
 phthalate, Diethyl
 phthalate, Dimethyl-
 Picloram
 Prometon
 Propachlor
 Propoxur
 Pyrene
 pyrene, Benzo a-
 Pyrene, Indeno(1,2,3,c,d)
 Simazine
 T, 2,4,5-
 Terbacil
 Toxaphene
 TP, 2,4,5-
 Triadimefon
 Trifluralin

PFAS COMPOUNDS

PFOA Perfluorooctanoic acid
 PFOS Perfluorooctanesulfonic acid
 PFHxS Perfluorohexanesulfonic acid
 PFNA Perfluorononanoic acid
 PFBS Perfluorobutanesulfonic acid
 PFHpA Perfluoroheptanoic acid
 PFHxA Perfluorohexanoic acid
 PFDA Perfluorodecanoic acid
 PFUnA Perfluoroundecanoic acid
 PFDoA Perfluorododecanoic acid
 ADONA 4,8-Dioxa-3H-perfluorononanoic acid
 9Cl-PF3ONS
 HFPO-DA Hexafluoropropylene oxide dimer acid
 11Cl-PF3OUdS
 4:2FTS 1H,1H,2H,2H-Perfluorohexane sulfonic acid
 6:2FTS 1H,1H,2H,2H-Perfluorooctane sulfonic acid
 8:2FTS 1H,1H,2H,2H-Perfluorodecane sulfonic acid
 NFDHA Nonafluoro-3,6-dioxaheptanoic acid
 PFBA Perfluorobutanoic acid
 PFHpS Perfluoroheptanesulfonic acid
 PFMBA Perfluoro-4-methoxybutanoic acid
 PFMPA Perfluoro-3-methoxypropanoic acid
 PFPeA Perfluoropentanoic acid
 PFPeS Perfluoropentanesulfonic acid
 PFEEESA Perfluoro(2-ethoxyethane) sulfonic acid

Appendix II - Annual Testing Summary - Tests Run on City of Spokane Water					29-Feb-2024			
2023 DRINKING WATER SOURCE - COMPLETED QUARTERLY MONITORING								
	SOURCE # WELL	8 CENTRAL	6 GRACE	5 HOFFMAN	1 NEVADA	3 PARKWATER	4 RAY STREET	2 WELL ELECTRIC
BACTERIA								
COLIFORM - RAW SOURCE *								
Total Coliform -number of samples per year / number of positive detections		5 / 0	7 / 0	5 / 0	5 / 0	12 / 0	8 / 0	24 / 0
E. coli - number of samples per year / number of positive detections		5 / 0	7 / 0	5 / 0	5 / 0	12 / 0	8 / 0	24 / 0
HETEROTROPHIC PLATE COUNT - RAW SOURCE *								
number of samples per year / greatest result value		5 / 2	7 / 1	5 / 0	5 / 0	12 / 1	8 / 2	24 / 5
* All operating wells are typically sampled once per month								
INORGANIC								
FULL LIST- ACCREDITED LAB (phase II & V included)		3rd Qtr - Jul		completed-see App. III	completed-see App. III			
NITRATE		1st Qtr - Jan					2.83	
		2nd Qtr - April					2.55	
		3rd Qtr - Jul	0.79	0.67	1.18	0.80	1.43	2.4
		4th Qtr - Oct					2.72	1.2
NITRATE + NITRITE - RPWRF LAB		1st Qtr - Jan					3.20	
		2nd Qtr - April					2.74	
		3rd Qtr - Jul	0.87	0.75	1.25	1.01	1.27	2.73
		4th Qtr - Oct					3.00	1.34
ORGANIC								
VOLATILES		1st Qtr - Jan	no detections					
(including TRIHALOMETHANES)		2nd Qtr - April						
		3rd Qtr - Jul				no detections		
		4th Qtr - Oct						
SYNTHETIC ORGANICS (515.1, 525.2, 531.1)		1st Qtr - Jan						
		2nd Qtr - April						
		3rd Qtr - Jul	no detections	no detections	no detections			
		4th Qtr - Oct						
RADIOACTIVE CONTAMINANTS								
Radium 228 - pCi/L,		2nd Qtr - April				< 1.0	< 1.0	
Gross Alpha - pCi/L		2nd Qtr - April				< 3.0	< 3.0	
Radon - pCi/L		2nd Qtr - April				544	435	

Appendix III - Drinking Water Inorganics Summary

CITY OF SPOKANE

29-Feb-2024

DRINKING WATER INORGANICS SUMMARY

MOST RECENT WELL STATION MONITORING ANALYTICAL RESULTS

ACCREDITED LABORATORIES

WELL STATION	CENTRAL	ELECTRIC	GRACE	HOFFMAN	NEVADA	PARKWATER	RAY	Maximum Contaminant		CURRENT DATA SUMMARY			
								Levels MCL's**	Goals MCLG's	MEAN	MAX	MIN	COUNT
SAMPLING DATE	26-Jul-2022	26-Jul-2022	25-Jul-2023	25-Jul-2023	27-Jul-2021	27-Jul-2021	27-Jul-2021						
LABORATORY	(Anatek)	(Anatek)	(Anatek)	(Anatek)	(Anatek)	(Anatek)	(Anatek)						
ALKALINITY	112	124	77.4	123	84	138	150	unregulated		115	150	77.4	7
HARDNESS (as CaCO3) #	111	120	90.6	136	102	153	197	unregulated		130	197	90.6	7
CONDUCTIVITY (µmos/cm)	247	275	198	283	228	346	431	700 t		287	431	198	7
TURBIDITY (NTU)	0.127	< 0.1	< 0.1	< 0.1	0.185	0.162	0.176	1 t		0.093	0.185	0.127	7
COLOR (color units)	< 5.00	< 5.00	< 5	< 5	< 5.00	< 5.00	< 5.00	15 s			< 5.00	< 5.00	7
CHLORIDE	6.08	7.24	6.11	6.77	5.68	7.86	19.6	250 s		8.5	19.6	5.68	7
TOT. DISSOLVED SOLIDS	183	206	99	173	91	190	212	500 s		165	212	91	7
MAGNESIUM	not tested	not tested	6.71	11.8	8.07	15.1	13.9	unregulated		9.5	15.1	6.71	5
CALCIUM	not tested	not tested	23.1	29	24.2	34.2	46.7	unregulated		31	46.7	23.1	5
ORTHO-PHOSPHATE	not tested	not tested	not tested	not tested	not tested	not tested	not tested	unregulated		N/A	N/A	N/A	0
AMMONIA	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	unregulated			< 0.02	< 0.02	7
CYANIDE	< 0.005	< 0.005	< 0.01	< 0.01	< 0.005	< 0.005	< 0.005	0.2	0.2		< 0.01	< 0.005	7
FLUORIDE	< 0.032	< 0.032	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2 s	4		< 0.1	< 0.032	7
NITRATE (NO3-N)	0.96	1.49	0.67	1.18	0.789	1.4	2.4	10	10	1.27	2.4	0.668	7
NITRITE (NO2-N)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1	1		< 0.1	< 0.1	7
SILICA (SiO2)	10.5	10.8	10.7	10.7	not tested	not tested	not tested	unregulated		10.7	10.8	10.5	4
SULPHATE	10.8	10.8	6.57	11.5	7.13	13.5	12.7	250 s	400	10.4	13.5	6.6	7
ALUMINUM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05 - 0.2 s			< 0.01	< 0.01	7
ANTIMONY	0.00189	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.006	0.006		0.00189	< 0.001	7
ARSENIC	0.00368	0.005	0.00250	0.00242	0.00227	0.00291	0.00353	0.010	0	0.0032	0.005	0.00227	7
BARIUM	0.0214	0.0197	0.0149	0.0223	0.0173	0.025	0.0487	2	2	0.0242	0.0487	0.0149	7
BERYLLIUM	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.004	0.004		< 0.0003	< 0.0003	7
CADMIUM	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.005	0.005		< 0.001	< 0.001	7
CHROMIUM	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.1	0.1		< 0.001	< 0.001	7
COPPER	0.00168	0.00426	0.00328	< 0.001	0.0119	0.00312	0.00501	TT	1.3	0.0042	0.0119	0.00168	7
IRON	< 0.01	< 0.01	< 0.01	< 0.01	0.0323	< 0.01	0.065	0.3 s		0.0487	0.065	< 0.01	7
LEAD	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	TT	0		< 0.001	< 0.001	7
MANGANESE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.05 s			< 0.001	< 0.001	7
MERCURY	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.002	0.002		< 0.0001	< 0.0001	7
NICKEL	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.1 ***	0.1 ***		< 0.001	< 0.001	7
SELENIUM	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.05	0.05		< 0.001	< 0.001	7
SILVER	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.1 s			< 0.001	< 0.001	7
SODIUM	2.76	3.65	2.77	3.80	2.81	4.23	8.27	unregulated		4.0	8.27	2.76	7
THALLIUM	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	0.0005		< 0.001	< 0.001	7
ZINC	0.00467	0.00141	0.00266	0.00167	0.00216	0.00127	0.00233	5 s		0.00231	0.00467	0.00127	7

RESULTS ARE IN mg/L EXCEPT WHERE OTHERWISE NOTED

* TT = Treatment Technique; s = Secondary MCL; t = State only MCL

** Aluminum is a secondary regulated contaminant

*** The MCL and MCLG for Nickel were remanded on February 9, 1995, monitoring requirements still in effect

divide by 17.1 to convert to grains per gallon

Appendix IV - Disinfection Byproducts - Distribution System

Distribution System Sampling for Disinfection Byproducts

Location Date Organics Lab	Reported										MAXIMUM CONTAMINANT LEVELS (MCL)
	Southview 10-Feb-2022 Anatek	Eagle Ridge II 10-Feb-2022 Anatek	Southview 12-May-2022 Anatek	Eagle Ridge II 12-May-2022 Anatek	Southview 11-Aug-2022 Anatek	Eagle Ridge II 11-Aug-2022 Anatek	Southview 10-Nov-2022 Anatek	Eagle Ridge II 10-Nov-2022 Anatek	Southview 9-Feb-2023 Anatek	Eagle Ridge II 9-Feb-2023 Anatek	
Total Chlorine Residual, mg/L	0.24	0.25	0.21	0.34	0.23	0.31	0.19	0.22	0.21	0.27	
TRihalOMETHANES, results micrograms/L											
Chloroform	0.37	0.3	0.43	0.26	0.27	0.26	0.53	0.5	0.34	0.29	
Bromodichloromethane	0.74	0.55	0.95	<0.5	0.7	<0.5	1.03	0.7	0.76	0.5	
Dibromochloromethane	0.95	0.71	1.61	0.54	1.23	0.52	1.16	0.76	1.09	0.65	
Bromoform	0.55	<0.5	1.4	<0.5	0.92	<0.5	0.74	<0.5	0.64	< 0.5	
TOTAL TRIHALOMETHANES LRAA	2.61 3.18	1.56 1.09	4.39 3.51	0.8 1.29	3.12 3.47	0.78 1.48	3.46 3.4	1.96 1.28	2.83 3.22	1.44 1.21	80
HALOACETIC ACIDS (HAAs), results micrograms/L											
Chloroacetic acid	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	
Bromoacetic acid	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Di-Chloroacetic acid	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Tri-Chloroacetic acid\	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Di-Bromoacetic acid	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
TOTAL HAA (5)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	60
Chloro,bromoacetic acid *	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	

Results are in µg/L (ppb) except where otherwise noted

* State Unregulated

Prepared by Water Department

Distribution System Sampling for Disinfection Byproducts

Location Date Organics Lab	Southview	Eagle Ridge II	Southview	Eagle Ridge II	Southview	Eagle Ridge II	MAXIMUM CONTAMINANT LEVELS (MCL)
	10-May-2023 Anatek	10-May-2023 Anatek	3-Aug-2023 Anatek	3-Aug-2023 Anatek	9-Nov-2023 Anatek	9-Nov-2023 Anatek	
Total Chlorine Residual, mg/L	0.2	0.31	0.23	0.32	0.21	0.26	
TRihalOMETHANES, results micrograms/L							
Chloroform	< 0.5	< 0.5	0.23	< 0.2	0.6	0.53	
Bromodichloromethane	0.92	< 0.5	0.63	< 0.5	1.22	0.79	
Dibromochloromethane	1.53	0.64	1.07	< 0.5	1.57	0.89	
Bromoform	1.03	< 0.5	1.08	< 0.5	0.86	< 0.5	
TOTAL TRIHALOMETHANES LRAA	3.48 3.22	0.64 1.21	3.01 3.2	< 0.2 1.01	4.28 3.39	2.21 1.07	80
HALOACETIC ACIDS (HAA5), results micrograms/L							
Chloroacetic acid	< 2	< 2	< 2	< 2	< 2	< 2	
Bromoacetic acid	< 1	< 1	< 1	< 1	< 1	< 1	
Di-Chloroacetic acid	< 1	< 1	< 1	< 1	< 1	< 1	
Tri-Chloroacetic acid\	< 1	< 1	< 1	< 1	< 1	< 1	
Di-Bromoacetic acid	< 1	< 1	< 1	< 1	< 1	< 1	
TOTAL HAA (5)	< 1	< 1	< 1	< 1	< 1	< 1	60
Chloro,bromoacetic acid *							

Results are in µg/L (ppb) except where otherwise noted

* State Unregulated

Prepared by Water Department

Appendix V - PFAS Results in source water

DOH #	Compound	Nevada	Well Electric	Parkwater	Ray Street	Ray Street	Ray Street	Ray Street	Grace	Grace	Hoffman	Central	Havana	SAL
		3/22/2023	3/20/2023	3/20/2023	3/20/2023	4/25/2023	7/25/2023	10/24/2023	3/22/2023	2nd Quarter	9/25/2023	3/22/2023	5/2/2023	
0434	PFOA Perfluorooctanoic acid	ND	ND	ND	2.75 ng/L	2.97 ng/L	ND	2.82 ng/L	ND	ND	ND	ND	ND	15ng/L
0433	PFOS													
	Perfluorooctanesulfonic acid	ND	ND	ND	4.44ng/L	4.74ng/L	3.58 ng/L	4.90 ng/L	2.01 ng/L	2.11 ng/L	ND	ND	2.51ng/L	10ng/L
0431	PFHxS													
	Perfluorohexanesulfonic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9ng/L
0432	PFNA Perfluorononanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	65ng/L
0429	PFBS													
	Perfluorobutanesulfonic acid	ND	ND	ND	2.89 ng/L	2.9 ng/L	2.22 ng/L	3.49 ng/L	ND	ND	ND	ND	ND	345ng/L
0430	PFHpA Perfluoroheptanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0435	PFHxA Perfluorohexanoic acid	ND	ND	ND	2.85 ng/L	2.82 ng/L	ND	2.70 ng/L	ND	ND	ND	ND	ND	None
0436	PFDA Perfluorodecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0437	PFUnA Perfluoroundecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0438	PFDoA Perfluorododecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0445	ADONA													
	4,8-Dioxa-3H-perfluorononanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0446	9CI-PF3ONS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0447	HFPO-DA													
	Hexafluoropropylene oxide dimer acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0448	11CI-PF3OUdS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0450	4:2FTS													
	1H,1H,2H,2H-Perfluorohexand sulfonic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0451	6:2FTS													
	1H,1H,2H,2H-Perfluorooctane sulfonic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0452	8:2FTS													
	1H,1H,2H,2H-Perfluorodecane sulfonic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0453	NFDHA													
	Nonafluoro-3,6-dioxaheptanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0454	PFBA Perfluorobutanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0455	PFHpS													
	Perfluoroheptanesulfonic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0456	PFMBA													
	Perfluoro-4-methoxybutanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0457	PFMPA													
	Perfluoro-3-methoxypropanoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0458	PFPeA Perfluoropentanoic acid	ND	ND	ND	2.90 ng/L	2.83 ng/L	ND	2.99 ng/L	ND	ND	ND	ND	ND	None
0459	PFPeS													
	Perfluoropentanesulfonic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None
0460	PFEESA													
	Perfluoro(2-ethoxyethane) sulfonic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	None

ND non detect with a detection limit of 2 ng/L
 results in ng/L (parts per trillion)
 SAL State Action Level

**CONTAMINANTS FOUND IN DRINKING WATER TESTING IN 2023
CITY OF SPOKANE, WATER & HYDROELECTRIC SERVICES**

Data presented, if not from 2023, is from the most recent testing done in accordance with the regulations.

SOURCE WATER TESTING		Highest Average	Detected Maximum	Detected min.	Number Positive Samples	Number of Samples	MCL	MCLG	MAJOR SOURCES
CONTAMINANT	Units	(a)							
Arsenic	µg/L	(a)	2.5	2.4	2	2	10	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium	mg/L	(a)	0.02	0.01	2	2	2	2	Erosion of natural deposits; Discharge of drilling waste; discharge from metal refineries
Nitrate	mg/L	(a)	2.83	0.67	10	10	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
PFOA Perfluorooctanoic acid	ng/L	(a)	2.97	2.75	3	11	N/A	N/A	Run-off or leaching from firefighting lam, industrial discharge, and landfills; wastewater treatment plants
PFOS Perfluorooctanesulfonic acid	ng/L	(a)	4.90	2.01	6	11	N/A	N/A	Run-off or leaching from firefighting lam, industrial discharge, and landfills; wastewater treatment plants
PFBS Perfluorobutanesulfonic acid	ng/L	(a)	3.49	2.22	4	11	N/A	N/A	Run-off or leaching from firefighting lam, industrial discharge, and landfills; wastewater treatment plants
PFHxA Perfluorohexanoic acid	ng/L	(a)	2.85	2.70	3	11	N/A	N/A	Run-off or leaching from firefighting lam, industrial discharge, and landfills; wastewater treatment plants
PFPeA Perfluoropentanoic acid	ng/L	(a)	2.99	2.83	3	11	N/A	N/A	Run-off or leaching from firefighting lam, industrial discharge, and landfills; wastewater treatment plants
DISTRIBUTION SYSTEM TESTING			Detected Maximum	Detected min.	Number Positive Samples	Number of Samples	MCL	MCLG	MAJOR SOURCES
CONTAMINANT	Units	LRAA							
Disinfection Byproducts - TTHMs [Total Trihalomethanes]	µg/L	3.39	4.28	0.64	7	8	80	0	By-product of drinking water disinfection
CONTAMINANT	Date sampled	90th Percentile (c)	Number of Sites exceeding AL	Number Positive Samples	Number of Samples	MCL	MCLG	MAJOR SOURCES	
Copper (b)	Aug-21	0.08	0	64	64	TT, AL= 1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives	
Lead (b)	Aug-21	1.83	0	63	64	TT, AL= 15	0	Corrosion of household plumbing systems; Erosion of natural deposits	

Notes

- (a) Compliance with MCL is determined by single sample results, so no average is used.
- (b) Faucet samples were from 'at risk' homes (those with lead service lines and those with copper pipes with lead solder joints).
- (c) 90% of at-risk homes had this concentration, or less, of lead/copper.

Key to Table

AL = Action Level = The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.
 LRAA = Locational Running Annual Average
 MCL = Maximum Contaminant Level = The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
 MCLG = Maximum Contaminant Level Goal = 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.
 pCi/L = picocuries per liter (a measure of radioactivity)