2023 Annual Drinking Water Quality Report
Washington State University Pullman Drinking Water System
(Public Water System #93200Q)

The U.S. Environmental Protection Agency (EPA) and the Washington Department of Health (WDOH) require that WSU Pullman's public drinking water system routinely provide an annual drinking water quality report to its consumers. This annual report explains where WSU Pullman's drinking water comes from, what it contains, and the sampling, testing, and treatment that is done to provide safe drinking water.

If future samples show that the drinking water is not safe to consume, EPA and WDOH requires that WSU notify consumers immediately.

Summary of the Report

EPA and WDOH require that public drinking water systems sample and analyze their water for:

- Microbial contaminants, such as bacteria (coliforms), which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic Chemical contaminants (IOCs), such as salts, minerals and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Organic chemical contaminants, including Synthetic Organic Chemicals (SOCs), Volatile Organic Chemicals (VOCs), and Disinfection Byproducts, which can be by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, septic systems, and chlorine disinfection reacting with organic chemicals.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.
- Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to help EPA determine their occurrence in drinking water and potential need for future regulation.

The frequency and number of drinking water samples and tests for contaminants varies each year depending on the source of drinking water (groundwater vs. surface water sources [WSU Pullman has groundwater sources]), vulnerability of the sources to contamination, the size of the system, the type of distribution system piping (metal, plastic, asbestos/concrete), and previous sample results.

WSU chlorinates its drinking water daily to prevent microbial contamination. The chlorine levels are monitored continuously and WSU takes at least 295 chlorine and microbial samples each year.

The WDOH reduced the monitoring requirements for WSU for Inorganic Chemicals (IOCs), Synthetic Organic Chemicals (SOCs), and Volatile Organic Chemicals (VOCs) because WSU's wells are at a low to moderate risk of contamination.

The most recent Nitrate samples were obtained on 6-6-23 and 8-17-23. The most recent Disinfection Byproduct samples (Total Trihalomethanes and Haloacetic Acids) were obtained on 8-1-23. The most recent SOC (Herbicides) samples were obtained on 3-26-20, and most recent VOC samples were obtained on 6-28-22. Initial PFAS samples were obtained on 6-28-22. All contaminants listed

above were Not Detected, and therefore not listed in the table below. WSU also sampled for unregulated contaminants in 2020 with the results listed below.

Sources of WSU's Drinking Water

The WSU water system is supplied by groundwater from the Palouse Basin Aquifer. Drinking water is pumped from four (4) groundwater sources (wells) on campus (well #4 [source S04], well #6 [source S06], well #7 [source S08], and well #8 [source S09]). The WSU water system is separate from the City of Pullman system except for four emergency interties. WDOH has Source Water Assessment Program data on the WSU water system which includes the susceptibility rating of potential contamination for each well on campus. For more information contact the WDOH at (509) 329-2100.

The table below displays reportable contaminants in the most recent samples required by the WDOH and EPA, the range of detections, typical sources of contamination, units of measurement, whether there was a violation, with a key and footnotes explaining the test results.

An Explanation of the Drinking Water Quality Table

Please note the following definitions:
Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level (MCL): 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.
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.
Maximum Residual Disinfectant Level (MRDL): The highest level of chlorine disinfectant allowed in the drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG): The level of chlorine disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water. The WSU system uses chlorine as the TT intended to reduce the level of microbial contaminants in the drinking water.

Contaminant [1]	Date Sampled	Range of Detections [2]	Unit	MCL	MCLG	Typical Source of Contaminant	Violation
Contaminants with Primary MCLs							
Barium	4-14-21	66.7	ppb	2000	2000	Erosion of natural deposits	No
Copper	5-11-21 to 6-30-21	6.33 – 217 [3]	ppb	AL = 1300	0	Corrosion of household plumbing systems; Erosion of natural deposits	No
Lead	5-11-21 to 6-30-21	ND – 8.0 [3]	ppb	AL = 15	0	Corrosion of household plumbing systems; Erosion of natural deposits	No

Fluoride	4-14-21	388	ppb	4000	4000	Erosion of natural deposits	No
Gross Alpha	6-9-21 6-22-21	<3± 0.323 to <3 ± 0.348	pCi/l	15	_	Erosion of natural deposits	No
Radium 228	6-9-21 6-22-21	<1± 0.341 to <1 ± 0.345	pCi/l	5	_	Erosion of natural deposits	No
Selenium	4-14-21	1.65	ppb	50,000	50,000	Erosion of natural deposits	No
Contaminants with Secondary MCLs [5]							
Iron	6-28-22	266 to 1460	ppm	300	NA	Erosion of natural deposits	Yes [4]
Manganese	6-28-22	49.3 to 122	ppb	50	NA	Erosion of natural deposits	Yes [4]
Chloride	4-14-21	3.93	ppm	250	NA	Erosion of natural deposits	No
Sulfate	4-14-21	1.96	ppm	250	NA	Erosion of natural deposits	No
Zinc	4-14-21	7.85	ppb	5000	NA	Erosion of natural deposits	No
Conductivity	4-14-21	351	umhos/ cm	700	NA	Erosion of natural deposits	No
Total Dissolved Solids	4-14-21	252	ppm	500	NA	Erosion of natural deposits	No
Sodium	4-14-21	23.8	ppm	NA	NA	Erosion of natural deposits	No [5]
Unregulated Contaminants (UCMR4)							
Bromide	7-28-20 8-31-20	~ 25.9 to 36.3	ppb	NA	NA	Erosion of natural deposits	NA
Germanium	8-31-20	~ 0.12 to 0.13	ppb	NA	NA	Erosion of natural deposits	NA
Manganese	7-28-20 8-31-20	54.7 to 138	ppb	NA	NA	Erosion of natural deposits	NA
Daily Chlorination for Microbial Control							
Chlorine (Residual)	Daily	0 – 0.26	ppm	4 MRDL	2 MRDLG	Water additive to control microbes	No

Key:
AL = Action Level, the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
MRDL = Maximum Residual Disinfectant Level
MRDLG = Maximum Residual Disinfectant Level Goal
NA = Not Applicable
Key:
ND = Not Detected
pCi/l = picocuries per liter
ppb = parts per billion or micrograms per liter (ug/l)
ppm = parts per million or milligrams per liter (mg/l)
umhos/cm = micromhos per centimeter (a measure of conductivity)

Footnotes:
[1] Only the most recent samples with contaminants found in the water are listed.

[2] The lowest to highest detected contaminant levels from any well or distribution sample are reported.

[3] Thirty (30) samples were analyzed. None of the lead or copper samples were above the Action Level. The 90th percentile sample (out of every 10 samples, 9 were at or below this level) was 5.98 ppb for lead and 170 ppb for copper. This does not trigger treatment, more sampling or other sampling requirements. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. In Washington State, lead in drinking water comes primarily from materials and components used in household plumbing. The more time water has been sitting in pipes, the more dissolved metals, such as lead, it may contain. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children. To help reduce potential exposure to lead, for any drinking water tap that has not been used for 6 hours or more, flush water through the tap until the water is noticeably colder before using for drinking or cooking. You can use the flushed water for watering plants, washing dishes, or general cleaning. Only use water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available from EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at http://www.epa.gov/safewater/lead.

[4] Iron and manganese are not regulated by the EPA, however, the Washington State Department of Health has established a Secondary MCL for iron and manganese. Secondary MCLs are based on factors other than health effects. For these contaminants, aesthetic quality is the basis for the Secondary MCL. There are no requirements to treat or remove these contaminants from the drinking water.

[5] The EPA has established a recommended level of 20 ppm for sodium as a level of concern for those consumers that may have daily sodium intake restrictions in their diets.

Unregulated Contaminants

WSU drinking water comes from groundwater, and is not required to sample for *Cryptosporidium* since it is usually found only in surface waters.

Additional Health Information

To ensure that tap water is safe to drink, the Department of Health and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Washington Department of Agriculture regulations establish limits for contaminants in bottled water that must provide the same protection 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 calling the EPA's Safe Drinking Water Hotline (800) 426-4791.

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and in some cases, radioactive material. Water can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria (coliforms), which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

- Inorganic contaminants, such as salts, minerals and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including SOCs and VOCs, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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 / Center for Disease Control (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 (800) 426-4791.

WSU is active in protecting the health and safety of students, faculty, staff and visitors of the University, and we will notify you immediately if the drinking water is not safe to consume.

For More Information

The WSU Water Board is responsible for ensuring that the water system conforms to all applicable regulations. If you are interested in attending a Water Board meeting, contact Environmental Health and Safety (EH&S) 335-3041 for the next meeting time and date.

This report was prepared by EH&S, and is available at the WSU web site: https://ehs.wsu.edu/public-health/drinking-water-quality/

For more information about the WSU water system, please contact Gene Patterson at 509-335-3041, via email at gpatters@wsu.edu or the WSU Environmental Health and Safety web page at http://ehs.wsu.edu/. Additional information is available from EPA at http://water.epa.gov/drink/.