

Mary M Knight School
Water System, Elma

January 1—
December 31, 2016

PWSID #428956



Water Quality Report



System Summary

Welcome to the 2016 Water Quality Report. This report is designed to inform you about the water and services we deliver to you every day. Our goal is to provide you with a safe and dependable supply of drinking water. To comply with State and Federal water quality laws, over ten water quality tests were performed for your system this year.

The District manages the Mary M. Knight School District Water System—taking certain water samples (lead, copper, chemicals, metals, nitrate, radionuclides, etc.), major maintenance, cross connection control, and working with the state on the sanitary survey. School maintenance staff takes the monthly coliform samples. The water source is a well that draws water from an aquifer 85' deep and is located NE of the secondary school building. The well serves the secondary school, primary school, and shop.

The Washington State Department of Health has rated the well as high risk or susceptibility for contamination. The State Dept. of Health has Source Water Assessment Program

(SWAP) data available online at <https://fortress.wa.gov/doh/eh/dw/swap/maps/> which lists potential contamination for each Group A water source in the state. This is an interactive map.

Lead testing in schools has been in the news and there are reports about the “School Rule”. This rule was adopted by the State Board of Health for schools served by a public water system. Schools that are served by their own water system, such as Mary M Knight, must comply with the federal Lead and Copper Rule of taking five (5) samples every three (3) years just like any city or neighborhood water system. The most current lead and copper results we have are from 2016

which indicate no problem with the water system. At the request of the the state, we took extra lead and copper samples, fourteen to get a good idea of all potential exposure to lead within the water system.

Mary M. Knight School Board meetings are generally held the fourth Monday of each month at 6:30 pm in the school Administration Building. Information about the meetings is located at

<http://www.marymknight.com/#!school-board/c1w3v>.

PUD 1 board meetings are the 2nd and 4th Tuesdays of each month at our office in Potlatch (1 mile south of Hoodspport, WA) at 1 pm. The public is welcome to our meetings.

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In the water quality table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms, we have provided the following definitions:

Water Quality Definitions

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

Lead and Copper 90th Percentile - out of every 10 homes sampled, 9 were at or below this level.

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 a disinfectant allowed in 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 a drinking water 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.

N/A - not applicable.

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present or not detected.

Parts per Billion (ppb) or micrograms per Liter

(µg/l) - one part per billion.

Parts per Million (ppm) or Milligrams per Liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Secondary Maximum Contaminant Level (SMCL) - these standards are developed to protect the aesthetic qualities of drinking water and are not health based.

State Reporting Level (SRL) - the level of contamination in which laboratory must report to the state.

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

< - Means 'less than'.

Tap Water and Bottled Water Safety

To ensure that tap water is safe to drink, the Washington State Board of Health and/or 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.

Test Results Summary - Mary M Knight School District Water System PWSID #428956

Contaminant	Violation Yes/No	Level Detected (range)	Unit Measurement	MCLG	MCL	Typical Source
Microbiological Contaminants						
Total Coliform Bacteria	NO	ND	Present or Absent	0	One Positive monthly sample	Naturally present in the environment
Fecal Coliform and <i>E.coli</i>	NO	ND	Present or Absent	0	One Positive monthly sample	Human and animal fecal waste
Inorganic Contaminants						
Nitrate (as Nitrogen) Well (06/09/2016)	NO	0.5	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, erosion of natural deposits
Copper (06/8-9/2016) Consumer Tap Samples (14)	NO	Max: 0.286 (0.009-0.286) 90th %: 0.264	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (06/8-9/2016) Consumer Tap Samples (14)	NO	Max: 8 (<1—8) 90th %: 5	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

Health Effects of Contaminants

Nitrates: As a precaution we always notify physicians and health care providers in the area if there is ever a higher than normal level of nitrates in the water supply. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and “blue baby” syndrome.

Total Coliform: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

Copper: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson’s Disease should consult their personal doctor.

Lead: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink water with excess lead over many years could develop kidney problems or high blood pressure. **Lead was tested in June 2014 and again in 2016. All lead results are below the MCL.** It is highly recommended that water be run for two minutes from the faucet the first time it is used each day to flush built up sediment from the faucet. Always use cold water for drinking and cooking.

Contaminants That May Be Present In Source Water

- **Microbial contaminants**, such as viruses, parasites and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can occur naturally 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.
- **Radioactive contaminants** which can occur naturally or result from oil and gas production and mining activities.
- **Organic chemical contaminants**, including synthetic and volatile chemicals, which are by-products of industrial processes and petroleum production. They can also come from gas stations, urban stormwater runoff and septic systems.



What You Should Know About Water Quality

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 the 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 (1-800-426-4791).

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).

Maximum Contaminant Levels (MCLs) are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL

for a **lifetime** to have a **one-in-a-million** chance of having the described health effect.

The sources of drinking water (both tap and bottled) 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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Importance of Fixing Leaks

Even small leaks add up to a lot of water over time. The chart at right shows how much water flows through a leak the size of the circle indicated. A pinprick sized hole means 3,600 gallons a month or 43,200 gallons a year. When this excess water flows, it is extra wear on the well pump and you pay the extra cost of electricity to run the pump. Help preserve your water system and repair leaks on your service lines. The maintenance crew monitors the distribution system for leaks by visual inspection.

Water Loss In Gallons					
Leak this Size	Loss Per Day	Loss Per Month	Leak this Size	Loss Per Day	Loss Per Month
.	120	3,600	●	6,640	199,520
•	300	10,800	●	6,964	209,520
●	693	20,790	●	8,424	252,720
●	1,200	36,000	●	9,585	296,640
●	1,920	57,600	●	11,324	339,720
●	3,095	92,880	●	12,750	361,600
●	4,295	128,880	●	14,952	448,560

Table provided by Buffalo Water, www.buffalowater.org

State Waivers

Waivers mean no testing or a modified testing frequency for a specified contaminant is required for a set period of time. Waivers are granted by the State based on susceptibility assessment of the source or automatically granted for state-wide waivers. Below indicates the waivers granted and the time period for which they are granted for the Mary M. Knight School District Well.

Inorganic Contaminants: 1 sample every 9 years; **Volatile Organic Contaminants:** 1 sample every 6 years; **Herbicides:** 1 sample every 9 years; **Pesticides and Soil Fumigants:** no samples through December 2016; **Dioxin, Diquat, Endothal, Glyphosphate, Insecticides:** complete waivers; **Asbestos:** no samples through 2019; **Coliform Monitoring:** no samples in July and August.

Washington State Office of Drinking Water Lead Statement

In Washington State, lead in drinking water comes primarily from materials and components used in indoor plumbing and service lines. Mason PUD No. 1 is responsible for providing high quality water, but cannot control the variety of materials used in plumbing components. 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 for thirty (30) seconds to two (2) minutes 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 and cooking. Hot water is likely to contain higher levels of lead. Lead is tested every 3 years throughout the school's water system. 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>.

Reason for Reporting Contaminants

The contaminant results table provided lists the drinking water contaminants we detected that are applicable for the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in the table is from testing done in the calendar year of the report. The EPA or the state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change.

Other Sources of Lead

Lead is both natural and man-made. Common sources of lead are:

- Lead based paint—paint chips and paint dust
- Lead in air from industrial emissions
- Lead in soil—lead deposits from old leaded gas, paint chips, and paint dust
- Lead industry—byproducts brought home on clothes and shoes by industrial workers
- Lead in consumer products and food—found in imported candies, medicines, dishes, toys, jewelry, and plastics
- Lead in water—from corrosion of plumbing products containing lead