



CITY OF PENDLETON

2017 Water Quality Report



The City of Pendleton Works Hard to Provide High Quality Water Services to You!

The City continues to move forward with several important projects related to the water filtration and resource recovery plants that serve you, our customers, and we want you to know.

DID YOU KNOW THE CITY'S PUBLIC WORKS DIVISION OPERATES AND MAINTAINS:



107 MILES OF WATERLINES



90 CENTERLINE MILES OF ROADS



87 MILES OF SEWER LINES



40 MILES OF STORM DRAIN PIPES



6 MILES OF OPEN DRAINAGE



4 MILES OF FLOOD CONTROL LEVEE SYSTEM



The completed master plan is available online at <http://pendleton.or.us/public-works/> (under Documents & More Information at the bottom of the page) so you can see how the City is planning for the future of our community and how to best to meet the water system needs and maintain reliable services for you.

FUN FACT: Pendleton was one of the first cities in Oregon to use Aquifer Storage and Recovery (ASR) technology to help restore groundwater levels. Since 2003, the city has “banked,” or left, about 9 billion gallons of natural groundwater in the aquifer.

Five Tips to Conserve Water Outside this Summer!

As stewards of the most precious resource, water, we all need to continue to do our part to conserve water. It will help with the livability and vitality of our community, plus it can save you money!



Only water grass, not sidewalks, driveways and streets.



Water between 6 pm and 10 am.



Check for leaks at hose connections, in hoses and with all sprinklers.



Use automatic shut off nozzle for any hose.



If planting, consider drought resistant plants or any plants requiring less water.



City Of Pendleton ASR Program



Umatilla River

ASR/Recharge & Power Production
WINTER/SPRING

1

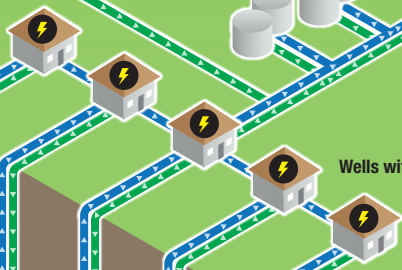
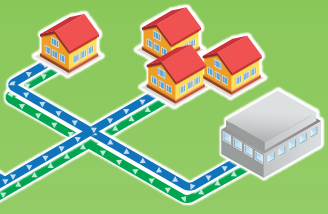
Water Filtration Plant
Ultra Membrane Filtration

3

RECHARGE

RECOVERY

Storage



Wells with Generators

Turbine

Turbine

Turbine

Turbine

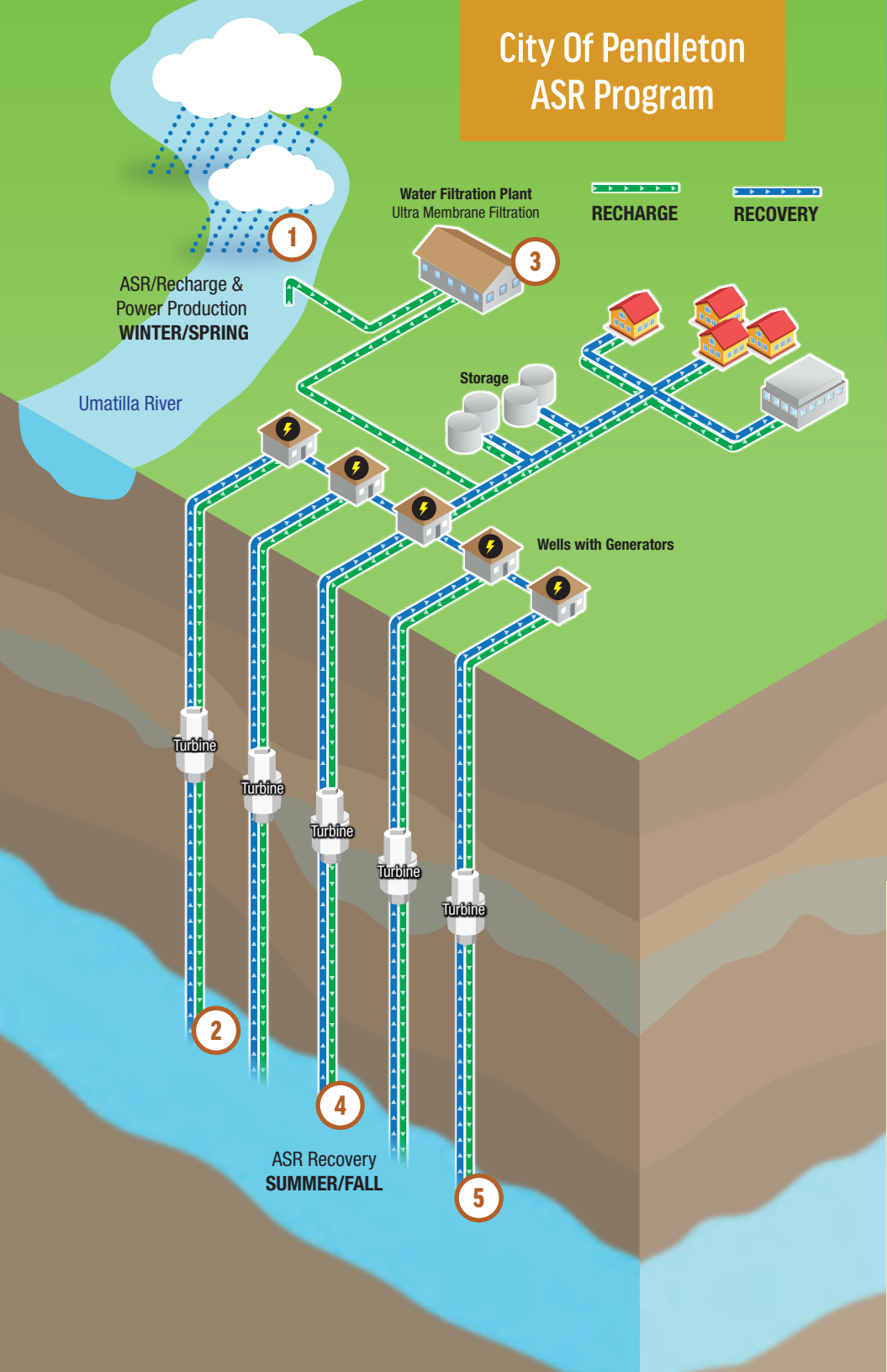
Turbine

2

4

ASR Recovery
SUMMER/FALL

5



Water Filtration Plant (WFP)

The City's state-of-the-art Water Filtration Plant turned fourteen years old June, 2017. This facility not only allows the City to meet current and future drinking water standards, but it also allows us to store high quality water in the underground aquifer through Aquifer Storage and Recovery (ASR). During the winter and spring months each ASR well injects water into the aquifer for storage, which allows us to generate electricity.

The City currently has five ASR wells which allow us to store excess water in the underground aquifer and generate power while doing so through the Energy Recovery Technology (ERT) Project. Initial estimates indicate the ERT will produce approximately 550 megawatt hours (MWh) of power annually, providing about \$25,000 in electricity credits during 2017. The facility is located on Goad Road southeast of Pendleton.

Aquifer Storage & Recovery (ASR)

- 1 Source water is pumped from the river (Recharge phase) WFP in winter/spring when the Umatilla River flows above 250 cfs.
- 2 Source water is pumped from the aquifer (Recovery Phase) in summer/fall when the Umatilla River flow is below 250 cfs.
- 3 After ultra membrane filtration at the Water Filtration Plant, source water is pumped into the city storage and distribution system. About 1.4 billion gallons of filtered water are sent through the city water system each year.
- 4 In winter/spring, excess filtered water is pumped into the aquifer, which generates electricity. The city received about \$25,000 in electrical credits in 2017 which helps to offset the annual \$500,000 electrical bill for the water system.
- 5 The city averages about 800 million gallons of water each year that are deposited and stored in the aquifer. The city has left about 9 billion gallons of native groundwater in the aquifer since the ASR program began.

DID YOU KNOW that water entering the Water Filtration Plant passes through about 3 million membrane filtration strands that have pores so small that bacteria cannot pass through. Laid end-to-end, these strands would be over 3,000 miles in length!

FIGHT F.O.G.

(Fats, Oils & Grease) Keep Fats, Oils and Grease Out of Your Drain and Prevent Clogged Pipes and Sewer Back-ups!

- 1 Pour cold fats, oils and grease into a covered, disposable container and throw it into your garbage. Never pour fats, oil or grease down sink drains or toilets.
- 2 Soak up spilled oils and grease with an absorbent material such as paper towels or kitty litter and throw into your garbage.
- 3 Before you wash dishes, scrape food scraps, fats, oils and grease into your garbage.
- 4 Use sink strainers to catch any remaining food waste while washing dishes.



Your Stormwater System at a Glance



Stormwater is untreated water that comes from rain and water runoff from land and properties, including over-watering. The water picks up pollutants along the way including fertilizer, oils, debris, pet waste etc, and flows into the storm drains.



Stormwater travels through sections of the 40 miles of storm drain pipes the City manages before running directly into the Umatilla River or the Patawa, Tutuilla or McKay Creeks.

All water and contaminants that enter storm drains go directly into our environment.

Storm drain contamination is one of the major causes of pollution in our rivers, lakes, and streams. To control stormwater, the City of Pendleton operates and maintains a 40 mile system of underground pipes and catch basins to transport rain and snow melt into the ground, rivers and streams. This water does not get treated so we need to keep contaminants out of our storm drains.

LITTLE KNOWN FACTS ABOUT OUR STORMWATER SYSTEM:



Storm drains do NOT treat the water that flows into the drains.

When RV and pet waste, along with any paints, fertilizer or car wash soap, enter storm drains, it all flows directly into our beautiful environment causing foul odors and pollution.



Storm drains do NOT prevent flooding when clogged.

Weeds, dirt, grass clippings and leaves, when left on the road and driveway, eventually find their way to the drain. This can cause a clog the drain and create flooding on your property.



Storm drains do NOT protect the fish, rivers and streams.

There is no difference between pouring pollutants (paint, fertilizer, oils) down a storm drain and dumping them directly into the river.

For questions regarding the stormwater system, please contact:

Public Works Director at 541-966-0202 or
Public Works Superintendent at 541-276-3078



ONLY RAIN DOWN THE DRAIN...

An overflowing toilet can ruin your home in an instant!



Maxi pads & tampons/ applicators



Dental floss & whitening strips



Baby & cleaning wipes



Cotton swabs & hair



Kitty litter & condoms



Bandages & OTC medications



“Flushable wipes” does not mean they are biodegradable. **PLEASE DO NOT FLUSH** disposable “flushable” wipes or diapers. They are made of synthetic fibers that plug sewer lines and sewage processing equipment resulting in costly repairs!

THE CITY OF PENDLETON WORKS HARD TO PROVIDE HIGH QUALITY WATER FOR YOU!

We want to keep you informed about the water and services we have delivered to you over the past year. Our goal is and always has been, to provide you a safe and dependable supply of drinking water. There are two sources of drinking water for the City. The first source consists of 7 deep basalt wells located throughout the city and another deep basalt well located 6 miles east of the city near Mission. The second source is the Umatilla River. Beginning in December, 2003, the City began withdrawing water from the Umatilla River and filtering it through the high tech membrane ultra-filtration process at the Water Filtration Plant. We are pleased to report that our drinking water is safe and meets federal and state requirements. This report shows the City's water quality as delivered to you in 2017.

HEALTH INFORMATION

The Water Department routinely monitors for constituents in your drinking water according to federal and state laws. Chlorine is added to the water for disinfection purposes and to assist with meeting federal and state requirements. The tables included in this report show the results of our monitoring for the period of January 1st to December 31st, 2017, or, in some cases, the results of the most recent sampling completed in accordance with state and federal regulations. 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA's) Safe Drinking Water Hotline (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 (800-426-4791).

EXPLANATION OF EXPECTED CONTAMINANTS

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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in City of Pendleton source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from septic systems, livestock, or wild animals.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm-water runoff, industrial or domestic wastewater discharges, mining or farming activities.
- Pesticides and herbicides, which may come from a variety of sources such as farming, home or business use, or urban storm-water runoff.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm-water runoff, and septic systems.
- Radioactive contaminants, which can occur naturally.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Maximum Contaminant Levels (MCLs) are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters (approximately 2 quarts) of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

AQUIFER STORAGE AND RECOVERY (ASR)

The City continues to store high-quality drinking water produced in its membrane filtration WFP in the basalt aquifer system beneath the City. That water is stored during the winter months when there is adequate water in the Umatilla River. The stored water is recovered during the summer months when demand is high. The process is referred to as Aquifer Storage and Recovery (ASR). Five ASR wells are now in operation.

In 2017, the City had an excellent ASR program year. This year the City stored 845 million gallons and recovered about 497 million gallons of filtered water from the Umatilla River in the aquifer. Since 2003, the City has been able to reverse the trend of reducing declines in the groundwater aquifer and now relies primarily on surface water. In fact, the City has "banked" or left in the aquifer almost 9 billion gallons of native groundwater since the Aquifer Storage and Recovery project began. This equates to leaving a yearly average of about 680 million gallons of filtered water in the aquifer. During 2017, the groundwater levels declined slightly. The fourteen years of this ASR project have clearly demonstrated that aquifer recharge, storage and recovery is a viable method for Pendleton to store and recover filtered water and also assist in reducing native groundwater declines.

UNREGULATED CONTAMINANT MONITORING

The Safe Drinking Water Act (SDWA) as amended in 1996 requires the EPA to establish criteria for a program to monitor unregulated contaminants in drinking water and to identify no more than 30 contaminants to be monitored every five years. The name of this EPA program is Unregulated Contaminant Monitoring Rule (UCMR). The EPA's purpose for monitoring selected unregulated contaminants is to gain nation-wide data to evaluate. The EPA will then decide whether or not to regulate these selected contaminants in the future for the protection of public health. Pendleton was randomly chosen to participate in the UCMR program. There have been three UCMR cycles to date. From the 3rd UCMR cycle which ended in 2014, the EPA has identified Strontium as one unregulated contaminant that will be regulated in the future. No MCL has been determined yet for Strontium. For Pendleton, the 4th UCMR sampling cycle will start in January 2018.

The items listed in Table 1. below were the only UCMR-3 contaminants detected in Pendleton's water during the last monitoring period in 2014. Levels are listed in parts per billion (ppb). The maximum level that was detected in a sample is reflected in Table 1. below. Fifteen other UCMR monitored contaminants were not detected.

Table 1. **RESULTS OF MONITORING FOR UNREGULATED CONTAMINANTS (UCMR)**

Chlorate	135 ppb
Hexavalent Chromium	0.14 ppb
Total Molybdenum	1.9 ppb
Total Strontium	195 ppb
Total Vanadium	32.4 ppb

DEFINITIONS

In this report you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms, we've provided the following definitions:

Not Available (NA) - some values are not available at this time.

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present at the detection level.

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.

Parts per billion (ppb) or Micrograms per liter (µg/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5

MICROBIOLOGICAL CONTAMINANTS

Microbiological testing of water helps protect the public from diseases. Chlorine is added to drinking water as a disinfectant to destroy or inactivate bacteria, viruses, and protozoa. City of Pendleton drinking water is routinely sampled for both total coliform Bacteria and E. Coli Bacteria. Total coliform bacteria are naturally present in the environment, and their presence is an indicator that other, potentially harmful bacteria may be present. The presence of E. Coli bacteria indicates that water may be contaminated with human or animal wastes. There were 240 routine microbiological samples taken throughout the distribution system in 2017. No E. Coli bacteria was detected in 2017.

LEAD

In 2017, the city conducted OHA-DWP mandated lead sampling at 30 residences within city limits. The MCL for Lead is .015 ppm. Eighteen out of 30 residences had no detections of lead. Of the 12 residences that had lead detections, none exceeded the MCL action level. The overall reportable 90th percentile sampling results were at .003 ppm. All results are posted on the OHA Drinking Water Program website under the City of Pendleton Water System. The next mandated lead and copper sampling is scheduled for the summer of 2020.

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. 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

NTU is just noticeable to the average person.

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

Maximum Contaminant Level (MCL) - The MCL is 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 MCLG is 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 disinfectant allowed in drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG) - the level of a drinking water disinfectant below which there is no known or expected risk to health.

RESULTS OF MONITORING FOR REGULATED CONTAMINANTS

PWS ID# 4100613

NOTE: The contaminants listed in the Table 1. and 2. below are the only regulated contaminants detected in Pendleton's water during the most recent monitoring period. Monitoring was completed in 2009, 2011, 2012, 2013, 2014, 2015, 2016 and 2017. Not listed in the Table 1. were 21 volatile organic compounds, 29 synthetic organic compounds, and 14 inorganic compounds, for which we tested for but were not detected.

Table 2.

Parameter	Highest for Compliance	Range of Level Detected		MCL (highest safe level allowed)	MCLG (ideal goal)	Complies? (Is it OK?)	Potential Sources of Contaminant
		Minimum	Maximum				
Turbidity	.10 NTU	.02 NTU	.10 NTU	5.0 NTU	NA	YES	Soil runoff, algae

Inorganics:

Barium	0.014 ppm	.009 ppm	0.014ppm	2 ppm	2 ppm	YES	Erosion of natural deposits
Fluoride	0.27 ppm	ND	0.27 ppm	4 ppm	4 ppm	YES	Erosion of natural deposits
Nitrate	1.02 ppm	.05 ppm	1.02 ppm	10 ppm	10 ppm	YES	Erosion of natural deposits; animal waste; fertilizer; sewage; septic tanks
Nitrite	ND	ND	ND	1 ppm	1 ppm	YES	Erosion of natural deposits; fertilizer

Disinfection Byproducts:

Total Trihalo-Methanes (TTHMs)	50.1 ppb	5.0 ppb	50.1 ppb	80 ppb	0	YES	By-product of drinking water chlorination
Halo Acetic Acids (HAAs)	39.8 ppb	ND	39.8 ppb	60 ppb	0	YES	By-product of drinking water chlorination

Radionuclides:

Gross Alpha	ND	ND	ND	15 pCi/L	0	YES	Erosion of natural deposits
Combined Radium 226/228	ND	ND	ND	5 pCi/L	0	YES	Erosion of natural deposits
Combined Uranium	ND	ND	ND	30 ppb	0	YES	Erosion of natural deposits
Disinfection Residuals:		Minimum	Maximum	MRDL	MRDLG	Complies? (Is it OK?)	Potential Sources of Contaminant
Chlorine Residual @ First User		0.27 ppm	0.96 ppm	4.0 ppm	4 ppm	YES	Water additive to control microbes

Table 3. RESULTS of MONITORING FOR LEAD & COPPER at RESIDENTIAL WATER TAPS

Parameter	90 th Percentile Values	No. of Sites Exceeding Action Level	Action Level (AL)	MCLG	Complies? (Is it OK?)	Potential Sources of Contaminant
Lead	3.0 ppb	0	15 ppb	0	YES	Corrosion of household plumbing; erosion of natural deposits
Copper	0.135 ppm	0	1.3 ppm	1	YES	



City of Pendleton

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WANT MORE INFORMATION?

We want our valued customers to be informed about their water quality. If you have any questions about this report or the City of Pendleton Water Division, please contact the Regulatory Specialist at 541-966-0249. For information on water quality and water conservation measures that can save you money, visit the City's website at www.pendleton.or.us and, using the SEARCH feature, type in "Water Conservation."



A compilation of the City of Pendleton's historical water sampling data can be found at yourwater.oregon.gov. Just enter water system OR4100613.