



TUALATIN VALLEY
WATER DISTRICT

Water Quality Forum – Safety Moment

July 16, 2020

Joel Cary

Water Resources Division Manager



TVWD Safety Moment: Identifying Poison Oak



“Leaves of three, let it be. If it’s hairy, it’s a berry. If it’s shiny, watch your hiney!”



- **Wear protective clothing (e.g., hiking, biking, brush clearing)**
- **Wash exposed areas, pets, and clothing within 30 minutes**
- **Symptoms may take several days to occur**
- **Seek medical attention for swelling or extreme rashes, troubled breathing, or infection**



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Overview

- TVWD's sources
- How we monitor your water
- *2019 Water Quality Report breakdown*
- Q&A session

Today's Goals

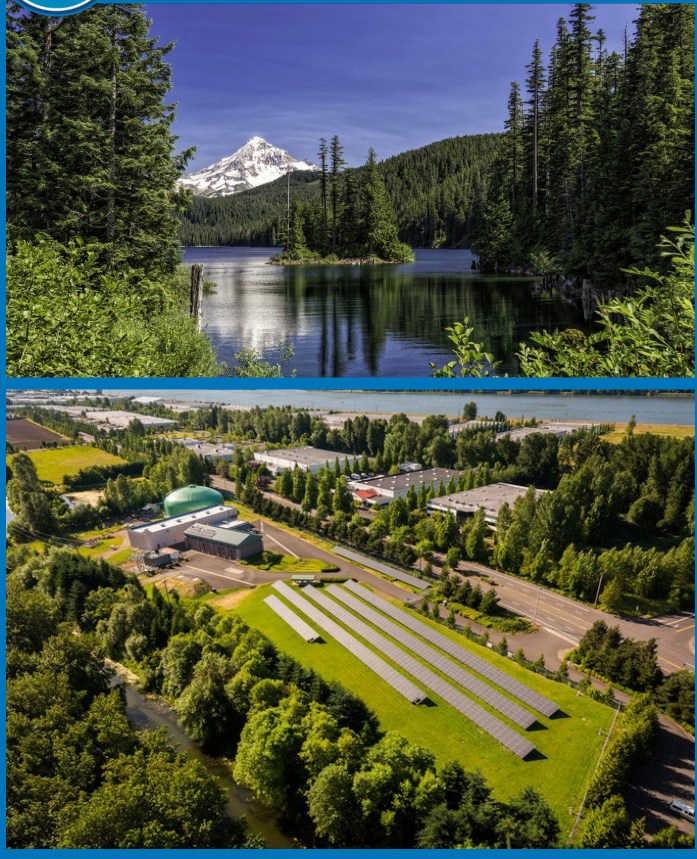
- We're here to help
- Provide context
- Answer your questions
- Highlight the safety of your drinking water

TVWD's Three "Sources" of Water

72%



Portland Water Bureau



Joint Water Commission



28%



Aquifer Storage & Recovery



<1%

Water Quality Sampling



Thousands of samples at the PWB and JWC sources



TVWD system and ASR source – 6000+ samples each year to make sure your water is safe to drink



Water Quality Data and Information



Consumer Confidence Report

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 at (1-800-426-4791).

Parameter/Constituent	UNITS	MCL (7)	MCLG	MDL	Portland Water Bureau ¹		Joint Water Commission ²		Aquifer Storage and Recovery (ASR) ³		Typical Source of Contamination	COMPLIANCE MET
					MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
INORGANICS												
Fluoride ¹	mg/L	4	4	0.1	<0.025	0.14	ND	ND	0.55	0.62	A water additive that promotes strong teeth; erosion of natural deposits	☑
Barium	mg/L	1	2	0.1	0.00082	0.0135	0.0041	0.0005	0.00331	0.0035	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	☑
Nitrate (as Nitrogen)	mg/L	10	1	0.4	<0.010	0.054	0.04	0.32	0.26	0.521	Agricultural runoff; leaching from septic tanks, sewage; erosion of natural deposits	☑
Lead (from source water)	µg/L	—	0	0.2	<0.00005	<0.00005	ND	ND	ND	ND	Erosion of natural deposits	☑
Copper (from source water)	mg/L	—	1.3	0.05	<0.00005	<0.00005	ND	ND	ND	ND	Erosion of natural deposits	☑
ADDITIONAL TESTING												
Turbidity - Unfiltered	NTU	5	—	0.1	0.15	1.32	NA	NA	NA	NA	Soil runoff; erosion of natural deposits	☑
Turbidity - Filtered	NTU	0.3	—	0.1	NA	NA	0.02	0.13	0.01	0.16	Soil runoff; erosion of natural deposits	☑
Sodium	mg/L	—	—	0.01	3.32	13	10.1	11.2	10.8	11.5	Erosion of natural deposits	☑
Manganese	mg/L	50	—	0.025	0.0017	0.01	ND	0.91	0.00002	0.00088	Erosion of natural deposits	☑
RADIOLOGICAL												
Radon ⁴	pCi/L	300	0	50	<50	280	NA	NA	190	220	Naturally occurring radioactive gas	☑
MICROBIOLOGICAL												
Fecal Coliform Bacteria (≧20 colonies/100mL in 6 months)	Present/Absent	TT	10%	—	ND	0	NA	NA	NA	NA	Human and animal fecal waste	☑
Cryptosporidium(oocysts/L) ⁵	Present/Absent	TT	0	—	ND	0.06	NA	NA	NA	NA	Human and animal fecal waste	☑
Giardia (cysts/L) ⁶	Present/Absent	TT	—	—	ND	0.08	NA	NA	NA	NA	Human and animal fecal waste	☑

- TVWD creates the water quality report every year
- Bottom line? Results well below any level of concern
- Your water is safe!



Portland Water Bureau

Last fiscal year, TVWD purchased about \$59 billion gallons (72%) of water from the City of Portland. Portland's primary source is water from the Bull Run watershed in the Mt. Hood National Forest. Portland also uses pumped groundwater from the Columbia South Shore Well Field next to the Columbia River to augment the Bull Run supply when needed. For more information about the Portland Water Bureau, visit portlandonline.com/water.



Joint Water Commission

Last fiscal year, about 2.27 billion gallons (28%) of water came from the Joint Water Commission (JWC), which is jointly owned by the District and the cities of Beaverton, Hillsboro and Forest Grove. JWC water sources are Hagai Lake and Barney Reservoir, as well as the seasonal flow of the Tualatin River. Water from these sources is treated at the JWC water treatment plant located near Forest Grove. For more information about the JWC, visit jwcwater.org.



Aquifer Storage and Recovery (ASR)

During the winter when water is plentiful, TVWD stores treated drinking water underground in the aquifer surrounding the Grabhorn well on Cooper Mountains. During the hot summer months, the stored water is pumped from the aquifer to help meet peak water demands. The Grabhorn ASR well is capable of storing in excess of 500 million gallons of treated water. For more information about TVWD's ASR use, visit tvwd.org/sources.

- Expanding website content
- Interactive + FAQs – “why’s my water discolored”

The screenshot shows the website's navigation bar with the logo, phone number (503) 848-3000, and search function. The main content area features a FAQ titled "Why does my water sometimes look discolored?". It explains that discoloration is often caused by system operations (like flushing) or water source characteristics (like sediment in the Bull Run watershed). A "Cryptosporidium Detected from the Bull Run Intake" alert is visible in the top right corner, along with contact information and upcoming events.

What Does it all Mean?

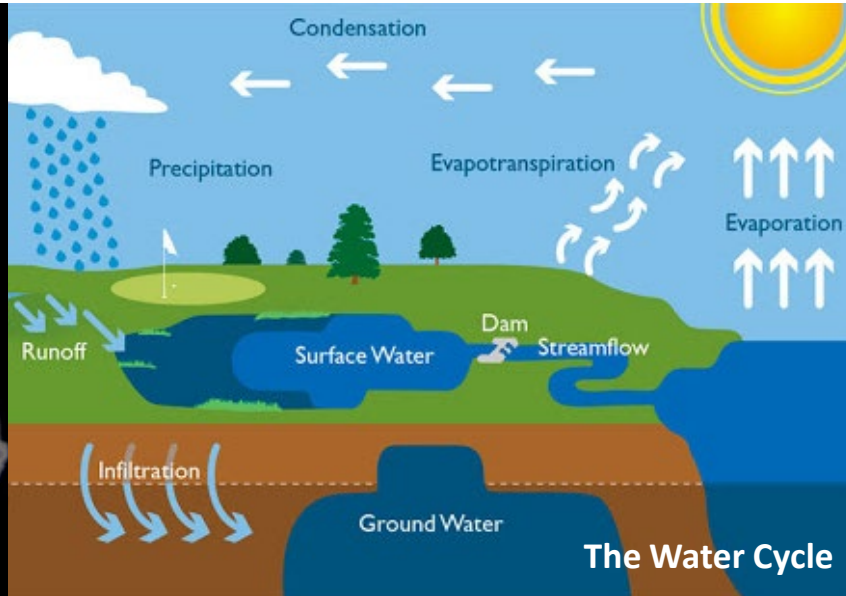
Key Terms

- MCL: Maximum Contaminant Level
- MCLG: Maximum Contaminant Level Goal
- PPM: Parts Per Million
- PPB: Parts Per Billion
- MDL: Method Detection Limit
- ND (non-detect) vs. less the MDL
- Min-Max = Annual data



1 part per billion or 1ppb

2019 Annual Water Quality – Source Data



Naturally Occurring Lead

The Water Cycle

Nitrate from Agricultural Sources

Parameter/Constituent	UNITS	MCL (TT)	MCLG	MDL	Portland Water Bureau*		Joint Water Commission		Aquifer Storage and Recovery (ASR)		Typical Source of Contamination	COMPLIANCE MET
					DETECTION RANGE	DETECTION RANGE	DETECTION RANGE	DETECTION RANGE	DETECTION RANGE	DETECTION RANGE		
INORGANICS					MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
Fluoride ¹	mg/L	4	4	0.1	<0.025	0.14	ND	ND	0.55	0.62	A water additive that promotes strong teeth; erosion of natural deposits	☑
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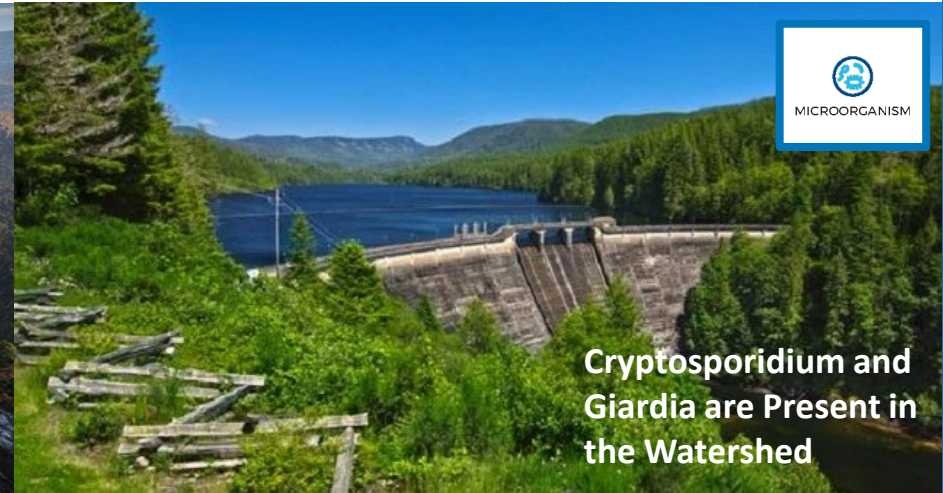
2019 Annual Water Quality – Additional Source Data



Turbidity Impacts from Seasonal Influences (e.g., Heavy Rain)



Radon Occurs from Natural Geological Formations



Cryptosporidium and Giardia are Present in the Watershed

Parameter/Constituent	UNITS	MCL (TT)	MCLG	MDL	Portland Water Bureau* DETECTION RANGE	Joint Water Commission DETECTION RANGE	Aquifer Storage and Recovery (ASR) DETECTION RANGE	Typical Source of Contamination	COMPLIANCE MET			
ADDITIONAL TESTING												
Turbidity - Unfiltered	NTU	5	--	0.1	0.19	1.32	NA	NA	NA	NA	Soil runoff; erosion of natural deposits	⊙
Turbidity - Filtered	NTU	0.3	--	0.1	NA	NA	0.02	0.13	0.01	0.16	Soil runoff; erosion of natural deposits	⊙
Sodium	mg/L	--	--	0.01	3.32	13	10.1	11.2	10.8	11.5	Erosion of natural deposits	⊙
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RADIOLOGICAL												
Radon ²	pCi/L	300	0	50	<50	280	NA	NA	190	220	Naturally occurring radioactive gas	⊙
MICROBIOLOGICAL												
Fecal Coliform Bacteria (% >20 colonies/100mL in 6 months)	Present/Absent	TT	10%	--	ND	0	NA	NA	NA	NA	Human and animal fecal waste	⊙
Cryptosporidium(oocysts/L) ³	Present/Absent	TT	0	--	ND	0.06	NA	NA	NA	NA	Human and animal fecal waste	⊙
Giardia (cysts/L) ⁴	Present/Absent	TT	--	--	ND	0.08	NA	NA	NA	NA	Human and animal fecal waste	⊙

2019 Annual Water Quality – TVWD System



TVWD Operators Upgrade Pumps which Improves Water Quality (e.g., Chlorine, DBPs)



Escherichia coli (*E. coli*) are a Type of Fecal Bacteria



Microbiological Sample Results are Available 18 Hours After Lab 'Set-up'



CONTAMINANTS TESTED IN TVWD DISTRIBUTION SYSTEM

Parameter/Constituent	UNITS	MCL	MCLG	MDL (MRDL)	LRAA (RAA)	Single Site Result	Typical Source of Contamination	COMPLIANCE MET
DISINFECTION BY-PRODUCTS								
						MIN.		
Total Trihalomethanes (THMs) ⁵	ppb	80	--	1.0	33.0	64.2	By-product of drinking water disinfection	⊙
Haloacetic Acids (HAAs) ⁵	ppb	60	--	1.0	24.0	35.7	By-product of drinking water disinfection	⊙
Free Chlorine and Chlormaine	ppm	4	4	0.1	1.13	2.16	Water additive used to control microbes	⊙
Parameter/Constituent	UNITS	MCL (AL)		MIN. % POSITIVE	MAX. % POSITIVE		Typical Source of Contamination	COMPLIANCE MET
MICROBIOLOGICAL								
Total Coliform Bacteria % Positive	%	+	--	0	1.9	--	Naturally present in the environment	⊙
Fecal Coliform Bacteria % Positive	%	+	--	0	0	--	Human and animal fecal waste	⊙

2019 Annual Water Quality – TVWD System



CONTAMINANTS TESTED IN TVWD DISTRIBUTION SYSTEM

Parameter/Constituent	UNITS	MCL (AL)	MCLG	MDL	90th% ¹	Homes Exceeding Action Level	Typical Source of Contamination	COMPLIANCE MET
LEAD AND COPPER <i>(results from high-risk homes²)</i>								
Lead - Customer Taps	ppb	15	0	0.2	12	7 of 114 (6.1%)	Corrosion of household and commercial plumbing systems.	
Copper - Customer Taps	ppm	1.3	1.3	0.05	0.199	0 of 114 (0%)	Corrosion of household and commercial plumbing systems.	

What's not Included in the 2019 Report?

- Non-regulated (assessment) sampling
- Past monitoring for special contaminants, like PFAS and cyanotoxins
- TVWD's future Willamette River source
- Broader data – available on our website and via partner links



TUALATIN VALLEY
WATER DISTRICT

Now it's your turn! Any Questions?

How to contact us

Email: wq@tvwd.org

Phone: Call 503-848-3000 and ask for “water quality”

Website: <https://www.tvwd.org/water-quality>