

Water System Report for 2022

Water Committee

4-Lakes Water Dept

- Mark Somnis(Co-Chair)
- Patrick Gai (Co-Chair)
- Tom Norton
- Ashley Saunders
- Keaton White
- Keith Renfrew (Advisor)
- Terry Deschenes (Advisor)

LOOKING FOR MORE TEAM MEMBERS

DoH Licensed Operator

- Ellen Winningham, EMCNW

Updates or major interruptions

- Evergreen Rural Water of Washington
 - Joe Barbee – NW Regional representative
 - Evaluate water system for leaks – 10/20/2022
 - Based on Mr. Barbee's evaluation,
 - “Based on the search performed there is no large leak present in the water system. However, my opinion is limited by the technology used.”
 - Possible next steps – Hire another company to do another review of the system with latest/high-tech equipment.
 - See next slide for full report.
- No major interruptions in 2022

Watch bulletin board/Facebook for 2021 announcements



Evergreen Rural Water of Washington

An **NRWA** Affiliate

PO Box 2300 • Shelton, WA 98584
(360) 462-9287 • Fax (360) 462-9289 • www.erwow.org

Water Leak Detection Evaluation

for

Four Lakes Water District
Four Lakes Washington, 99014
Water system ID: 26195

The Northwest Region Circuit Rider for Evergreen Rural Water responded to a request for help by the Four Lakes Water Association. They were experiencing an unacceptable amount of water loss (20%) and were actively looking to pinpoint the leak. Board Member Keith Renfrew (Point of contact) met and took the rider out to investigate the distribution system.

Observations:

Terrain: The terrain varies in this community. Certain areas are easily accessible with rolling slopes while other areas are on steep hills which are difficult to transverse. In addition, there is a zone where high-power lines transverse the area. The electrical disturbance is so strong that it rendered the circuit rider's listening equipment ineffective. Using the LD12's Audio filter we were able to get a sense of the surrounding area, but due to the interference it is impossible to be sure of no leakage.

Valving: Valving is in fair to poor condition. This is due to a lack of valve exercising. When the system was privately owned, the owner was unwilling or unaware of the need for this type of maintenance. Now the system is at a point where operators cannot be sure if the lines or valves will break or shatter when operated causing a system wide shut down. While not a major priority, steps should be taken to address this.

Root intrusion: Root intrusion occurs when tree roots infiltrate water lines. Tree roots seeking water, heat, and nutrients will grow toward lines over time. The growing roots put pressure on the pipes, eventually cracking and growing into them. Being in a heavily wooded area, root intrusion is suspect, but we were unable to determine leakage due to this issue.

Meter boxes: The care that has been afforded to the meter boxes in this system are top notch! It is rare that circuit riders come across such attention to detail in meter protection. Both meter and shut off valve are individually guarded, and all lines are buried to protect from frost. One small problem is the occurrence of deer mice, which is typical for this area, but operators should still be aware of.

Conclusion: In general, the circuit rider found the system to be sound with no evidence of a large leak. There may have been small pinpoint leaks that were detected, but with the equipment provided, the rider was unable to pinpoint those locations. While more advanced equipment might leave better results, it is unlikely that there is a leak present of such magnitude. Possible explanations might include leaking check valves, faulty/under registering master meters, and erroneous meter reads. The circuit rider recommended (when feasible) exercising the existing shut off valves with the equipment to repair or replace on hand. This is



Four Lakes.pdf

because the valving system has not been exercised in some years and valves tend to "freeze in place." PVC (the main material used in the construction of the distribution system) has also been known to shatter as it ages. Once the valving has been replaced, it is important to schedule and regularly exercise them. Once the working valves are in place, you will be able to isolate portions of your distribution system and look for drops in pressure. This will verify there is a leak and narrow the search area.

It is my opinion based on the search performed that there is no large leak present in the water system. However, my opinion is limited by the technology used by Evergreen rural water. There are other agencies available to perform leak surveys on your distribution system. They have access to the latest technology and for a fee they would be happy to perform a thorough review of the work performed here. If you need any further assistance in this, please don't hesitate to contact Evergreen Rural Water.

Joe Barbee
NW Region Circuit Rider
Evergreen Rural Water of WA

Water System Usage 2016-2022f

- 2022 DoH-Required Testing
 - Monthly bacteriological – *all passed*
Our water quality is excellent!
- Water Usage (average gpd)
 - Pumped 26,253 gallons/day in 2016
 - Pumped 23,919 gallons/day in 2017
 - Pumped 25,511 gallons/day in 2018
 - Pumped 22,267 gallons/day in 2019
 - Pumped 24,490 gallons/day in 2020
 - Pumped 24,239 gallons/day in 2021
 - Pumped 32,354 gallons/day in 2022

2021		2022	
Gal used	GPD	Gal used	GPD
Sample houses		Sample houses	
9404300	24490	11582600	32354
46760	122	37460	105
119150	310	97100	271
75730	197	193610	541
117310	305	114350	319
107740	281	127170	355
37050	96	32460	91
111640	291	129540	362
395330	1030	2032990	5679
43480	113	52630	147
76590	199	54520	152
89250	232	62570	175
134110	349	324010	905
47260	123	43170	121
41900	109	29980	84
121450	316	120690	337
59570	155	49820	139
19850	52	16780	47
29730	77	39830	111
61310	160	44760	125
95860	250	88960	248
158740	413	165750	463
540	1	7660	21
70470	184	86140	241
420	1	13120	37
97780	255	114920	321
60400	157	72690	203

What can we do?

- While we do not charge by how much you use, we all need to work at wasting less and conserving more.
- We are seeing 3x – 5x in some households.
- Be mindful of usage, especially as it heats up

Water Use Efficiency Goal: Try to reel in some of our usage.



Water System Report for 2022 System Maintenance & Upgrades

2022 Report - 2023 Plan

- Required to report to DoH annually total water pumped vs. total water used. Difference (system leakage) must be less than 10%.
- System meter reading in May 2020 indicated significant system leakage. Had water agency check system. Determined no major leak.
 - Next steps –
 - Update distribution valves that are worn.
 - Consider having another company use latest technology to review findings
- Homeowner meters will be read this spring as we seek to solve leakage/usage issues. Tentative meter reading – Saturday, May 20th – We will post in all relevant locations when finalized.



PERFECT TIME TO JOIN THE WATER GANG 😊

Water System Report for 2022

- WATCH FOR LEAKS AND REPORT
 - Do you have puddles on your property or spots that are always soggy? Let Mark and Pat Know
- PLEASE CONSERVE WATER
- Join the water committee – Help keep our water supply safe, cheap and GREAT!

QUESTIONS?

