

ACS Rooter One Explains What Water Quality Reports Can and Cannot Reveal About Copper Pipe Corrosion

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ACS Rooter One, a Fort Pierce, Florida, plumbing company, is outlining how annual water quality reports relate to copper pipe corrosion. The review complements the company?s older home plumbing checklist, which covers inspection and maintenance of aging plumbing. Utilities publish these reports each year, giving homeowners public information about the water that reaches household pipes.

Fort Pierce Utilities Authority?s 2026 annual water quality report primarily reflects testing performed in 2025. The report states that the utility draws groundwater from the Surficial and Floridan aquifers. Surficial Aquifer water undergoes treatment that includes lime softening, while Floridan Aquifer water is treated with reverse osmosis.

The report describes chloramines as a water additive used to control microbes and lists the highest running annual average for 2025 at 3.8 parts per million. That figure falls below the federal maximum residual disinfectant level of 4.0 parts per million.

The report lists a 90th percentile copper result of 0.06 parts per million from July 2023 sampling, with no sites above the 1.3 parts per million action level. That result reflects copper in tap water rather than the condition of pipe walls. The utility also notes it cannot control the variety of materials used in plumbing components within homes.

Virginia Tech research offers context on copper pipe corrosion, though it does not examine plumbing in local homes. In a 2009 master?s thesis, researcher Benjamin Custalow studied how water chemistry and flow influence pitting that can lead to pinhole leaks in copper pipes. The thesis describes laboratory experiments, including a study of 21 unique conditions.

The thesis reported that pitting severity decreased with lower free chlorine residual concentrations and increased at low alkalinity. Sufficient doses of copper corrosion inhibitors, including silica and orthophosphate, also reduced pitting. A preliminary short-term experiment found that adding silica, or dosing chloramine in place of free chlorine, greatly reduced corrosion activity and pitting propensity in copper pipes.

The thesis?s pitting-prone test water had a target free chlorine concentration of 4 milligrams per liter and a pH of 9.2. The utility reports chloramines instead, which were also used in the preliminary experiment. The experiments tested alkalinity levels from 15 to 150 milligrams per liter as calcium carbonate, but the utility report does not provide alkalinity data for comparison.

Flow conditions also influenced pitting in the experiments. At the maximum fluid velocity tested, 11.2 feet per second in quarter-inch tubing, a leak formed after only two months. The thesis described water chemistry and flow velocity as factors that can act together, though laboratory results do not predict how any particular home?s plumbing will perform.

Findings like these help explain why copper pipe corrosion rates vary and why lifespan estimates should not be read as guarantees. InterNACHI, a home inspector association, provides separate copper water-line lifespan estimates of 50 and 70 years in its chart for Florida homes. The chart describes its figures as guidelines that assume regular maintenance and normal wear and tear.

Plumbers look for evidence of copper pipe corrosion in aging systems, including the greenish-blue staining identified in ACS Rooter One?s guidance. Leaks occurring more than once or twice a year, or in different areas of a home, may indicate a systemic issue. Pressure testing, electronic detectors, thermal imaging, and moisture sensors can locate hidden leaks.

ACS Rooter One is a plumbing and septic company based in Fort Pierce, Florida, that has served St. Lucie County and the Treasure Coast since 1987. Its services include pipe repair, leak detection, repiping, and

septic tank pumping. The company serves both residential and commercial customers.

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ACS Rooter One

ACS Rooter One specializes in residential and commercial plumbing, including septic tank cleaning and pumping, drain and leach field services, gas line installation, leak detection, & gas appliance installation.

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