

FLUSHING, PRESSURIZATION AND DISINFECTION: NEW MAINS

Hooksett Village Water Precinct, Hooksett, NH

This is intended as an abbreviated field summary. For specific details, refer to the documents referenced below. If there is any question about a procedure, the Contractor shall use the stricter or more protective method. The HVWP Superintendent shall settle any disputes.

In accordance with the latest versions of AWWA C651 and HVWP Standard Specifications for Construction, the following flushing, pressurization and disinfection steps shall be followed by the Contractor:

- Identify flushing (velocity ≥ 3.0 ft/sec) and sampling locations with HVWP. Minimum sampling: One/1,200 ft (plus one/end and one/branch as applicable). If excessive trench water or dirt/debris entered new main, more samples shall be collected at HVWP discretion (one/200 ft).
- Provide at least 48 hours notice to HVWP prior to start of pressure/leakage test.
- Finish all piping including hydrants and any caps/plugs/taps for air removal, disinfection and sampling. Disinfection tap ≤ 10 feet from beginning of new main unless otherwise authorized by HVWP. Flush sediment, release trapped air, pressurize and let piping sit for ≥ 24 hours. HVWP operates all valves and hydrants. Flush until discolored water is eliminated.
- Set up and complete 2-hour (minimum) pressure test @ 150% of maximum operating pressure as determined by HVWP, with $\leq 5\%$ psi variation and no less than 100psi. Must meet HVWP allowable leakage criteria based on test pressure and pipe length/diameter.
- If it doesn't pass the pressure test, make repairs and try again. Repeat as needed.
- If it does pass the pressure test, flush the piping completely and begin disinfection.
- Disinfect and document starting levels of either ≥ 25 ppm chlorine via the Continuous Feed Method or ≥ 100 ppm chlorine via the Slug Method. Include opening/closing of valves/hydrants. Hold disinfection at ≥ 10 ppm for minimum of 24 hours (continuous feed) or at ≥ 100 ppm for 3 hours (slug). Document level at the end of the disinfection period.
- Flush completely until chlorine \leq system residual (document); neutralize discharged chlorine.
- HVWP requires a minimum waiting period of 16 hours prior to sample collection (AWWA "Option B"), unless otherwise authorized by HVWP. Collect two sample(s) for bacteria, spaced a minimum of 15 minutes apart. Get sample(s) to lab <8 hours after sampling (don't wait until end of day), properly preserved and with chain-of-custody.
- Unless otherwise authorized by HVWP, sample(s) for bacteria will be collected by HVWP at the contractor's expense. No samples will be collected on a Friday.
- If it doesn't pass either bacteria test, re- flush/re-disinfect and repeat both bacteria samples.
- If it passes both tests, new main may be put into service w/HVWP approval.

"It must be remembered that the final water quality test is not the primary means for certifying the sanitary condition of a main. The sanitary handling of materials, the practices during construction, and the continual inspection of the work are the primary means of ensuring the sanitary condition of the water main." AWWA, 2015.