



Boil Water Notice After-Action Discussion

The boil water notice issued for the City of Richwood water customers on 9/28/23 was due to loss of water distribution pressure because of a heavily damaged water main at the corner of West Mahan and Oyster Creek Dr. This issue began with a minor leak near a fire hydrant. I'd like to give Council a timeline of events to help further understanding of the situation.

Late on Tuesday, 9/26, Public Works was able to excavate the site deep enough to see where the leak originated from. Once we determined where the leak was coming from, excavations were shut down for the day and Public Works continued additional digging by shovel to get a better idea of piping lay-out underground, and what we were going to have to work with to make this repair.

The initial leak began at a control valve for the hydrant. It appears that a different Public Works Crew at an earlier date attempted to make a repair on this valve. When the valve was exposed, we learned of secondary gaskets and a fabricated gasket retention apparatus that was added assumably to stop a previous leak at this hydrant control valve. Upon further investigation, we realized that the same gasket system had been implemented at the Tee where the water line extended from the water main to feed the hydrant. Once this was realized, a decision was made to replace the entire assembly.

On Wednesday, 9/27, excavations were made to further uncover the full assembly because we had realized that more material than a simple transition coupling, valve, and hydrant would be necessary to make the repair. While further excavating, Public Works found an additional valve that was an inline distribution valve for Moore St. between North and West Mahan. Also discovered was a ductile iron cross feeding water north, south, east, and west of the intersection.

On Wednesday, 9/27, when Public Works vacated the site, spoil was laid on the piping in attempts to keep it weighed down. Old asbestos-concrete water line such as this can be unpredictable while under pressure. The conversation was had whether to backfill the site until we got material. Backfilling the site increases our risk of damaging the water line, cutting an NG main or internet cable, or all the above when excavated again. The decision was made to leave the excavation open.

That same day material lists were made, and an order called in. Pickup from will-call of necessary materials to make a repair took place on 9/28. Public Works was notified at roughly 12:15 pm on Thursday that the leak had accelerated, and Public Works immediately jumped into action. Once the accelerated leak was seen, contractor help was requested.

Public Works proceeded to turn on all water producing infrastructure to maintain water pressure while additional valves were located to isolate the leak. Aged water distribution valves made valve operation difficult when attempting to isolate water at the site. Water distribution valves were operated from 1:00 pm until the arrival of the contractor at roughly 5:45pm. The operation of distribution valves managed to slow the water loss but not isolate it. This means we



were getting back-pressure from somewhere that we could not determine. The water pressure at the leak site at this time was still too excessive to make a repair.

After the operation of water distribution valves were complete, Public Works managed to slow the loss of water enough for the water wells and pumps to maintain an operating pressure of roughly 35 psi, but not enough to pump out the excavation, or reduce pressure enough so a repair could be made. This was the time when the decision was made to isolate water at the towers. After isolation of the water towers, the hole was clear of water in 10 minutes.

When the excavation was clear of water, and the extent of water main damage was visible, the original repair plan was amended to consist of replacing a section of water line between the existing water main on Moore, and the existing ductile iron cross at the intersection of water mains. This meant we had to omit the existing fire hydrant at this location. The actual repair took roughly an hour. The remainder of the time from 1:00 pm to roughly 9:30 pm involved locating and operating water distribution valves, isolating the distribution system from the towers, and bringing the system back online.

Note: The Boil Water Notice was initiated at roughly 1:30pm on Thursday, 9/28/23. The notice was initiated as a precautionary measure, but also because of a presumption that distribution pressure would not be able to be isolated within the leak area without taking drastic measures.