

Effingham Rents Vac Machine to Clean Valve Risers, Start Maintenance Program

Water system valve and curb boxes frequently get filled up with dirt, stones and other foreign objects that prevent keys from accessing the valves. While there are a variety of tools manufactured to clean out various sizes of valve risers, the last thing a water system crew wants to do is to excavate the riser in order to access the valve. The situation with inaccessible valves because of debris in valve box risers is more problematic in smaller systems because there is typically only one or two employees and those employees have a multitude of other responsibilities, much less being tasked with excavating valve risers. Such was the situation at the city of Effingham.

Effingham is located in south Central Atchison County. The city has

approximately 228 meters, and 148 valves. The city has had problems in the past with valve risers filling up with dirt and debris. The debris prevented operators from closing the valves when trying to isolate sections of the water distribution system to make repairs. The city commission recently authorized the rental of a vac trailer to clean the risers.

The trailer was rented from Vermeer Great Plains of Olathe, Kan. The cost to rent the machine was \$1,400 per week. The machine consists of a large power washer that is used to cut and loosen the dirt and debris in the valve riser. The machine is also equipped with a large vacuum to suck the mud and materials from the riser. The machine Effingham rented was equipped with a 300-gallon water supply tank.

Operator James Ellis commented that the vac trailer worked perfectly to clean the valves. It required only one day to clean all the blocked valve risers. The city also used the vac to clean the gutter drains for the storm water system. It was also used to clean lift stations. The operators added a 30-foot section of pipe to extend to the bottom of the lift stations to remove all materials. After the material were vacuumed from the stations, James used the power washer to wash down the lift stations. All of the waste was dumped into the city's wastewater lagoons.

Clean and exercise

After the waterline valve risers were cleaned, city operators exercised each valve. Each valve was opened and closed three times to ensure that it functioned properly. Good maintenance practices for every public water system is to exercise every valve at least annually. When valves are inoperable it takes more crew time to isolate water lines. It means that more customers are affected during a water leak. It also increases water loss. It also may create public safety hazards during periods of high demand such as fire fighting.

Need to know

There are several things to know before exercising valves. Is the valve a right- or left-handed valve? Although left-handed valves are not that common, there are some in various water systems in Kansas.

Next, the size of the valve must be known. A rule of thumb is to count the number of turns when closing the valve. On a gate valve the general rule is three times the size of the valve plus



Valve riser being vacuumed prior to exercising the valve.



This freshly painted valve riser cap indicates the valve was exercised and is operable.



City of Effingham, Kan. operator James Ellis operates the power washer to clean an additional waterline valve riser.

one. For example, a 6-inch valve would be $6 \times 3 = 18 + 1 = 19$. A six inch valve should have approximately 19 revolutions to shut the valve. It is important they get the valve completely shut to ensure it seals correctly.

I suggest when exercising valves that the operators do it early in the day. When exercising valves it can cause the valves to start to leak or the stem can be broken. If that happens at the end of the day, the operator has to spend overtime and after hours to repair the valve. I also suggest when a valve has been completely exercised and is working properly, apply a fresh coat of blue paint to the valve riser cap. This will indicate to anyone that the valve is working properly. It also makes the valve more visible when attempting to locate it.

Just about every water operator has a horror story about a situation that might have been averted if only the water system implemented a valve maintenance program.

Just about every water operator has a horror story about a situation that might have been averted if only the water system implemented a valve maintenance program. Frequently, the losses of time, water, and in some cases property far exceed what a valve maintenance program would have cost, not to mention the inconvenience.

Tony Kimmi has worked as a Tech Assistance for KRWA since October 2009. He has extensive experience in the operation of construction equipment. He has assisted in the construction of several rechlorination stations and ongoing monitoring of water quality issues.



- LINE STOPPING**
3/4" - 60"
- LINE TAPPING**
2" - 60"
- VALVE INSERTION**
4" - 16"
- VALVE TURNING**
- PIPE REPAIR**



FOR ALL YOUR POTABLE AND WASTE WATER NEEDS

WWW.MUNICIPALPIPESERVICES.COM

MUNICIPAL PIPE SERVICES

BOB HENNIG
SALES MANAGER
1615 WEST "J" STREET
HASTINGS, NE 68902

1-800-395-7473
CELL: 402-469-1886
FAX: 402-462-4408
E-MAIL: BOB@MUNICIPALPIPESERVICES.COM

