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CITY OF PHOENIX WATER SERVICE DEPARTMENT UTILIZES PERMASEAL™ INSERTION VALVE FOR MORE EFFICIENT OPERATIONS

Case Study

OVERVIEW

To limit customer shutdowns and reduce non-revenue water loss, the City of Phoenix Water Service Department installed Mueller Co.'s PermaSeal Insertion Valve to evaluate the capabilities and benefits of its resilient wedge gate valve design. With the use of the PermaSeal Insertion Valve, the City of Phoenix believes it saved in installation time, cost, and maintenance as well as less service interruptions – ultimately providing better customer service and more efficient operations within their water network.

- **Solution** – PermaSeal Insertion Valve
- **Customer** – City of Phoenix Water Service Department
- **Location** – Phoenix, AZ, USA
- **Number of Installations Completed Year to Date** – 15 PermaSeal Insertion Valves of various sizes

SITUATION

Being responsible for providing safe drinking water to approximately 1.5 million people is no easy task, but the City of Phoenix Water Service Department remains up for the challenge. As part of its ongoing efforts, the water service department is always looking for effective solutions to ensure water continues to flow through 7000+ miles of pipes and reaches more than 460,500 service connections.

To limit customer shutdowns and reduce non-revenue water loss, the City of Phoenix agreed to be a part of the first live installation of the PermaSeal Insertion Valve and test the capabilities and benefits obtained from utilizing the resilient wedge gate valve design.

“We first started off as a trial when Mueller was in the final customer validation testing phase of the PermaSeal Insertion Valve,” explained Keith Mojica, Water Services Deputy Director at the City of Phoenix Water Service Department. “As part of this testing program, we chose a location in the vicinity of a hospital, doctors’ offices, and a dialysis center — an area which would be problematic if a lengthy shutdown occurred. Typically, to replace the broken valves in the area, we would have had to turn off the water supply to these key locations and it would affect a large number of customers. To ensure the impact to these important businesses was kept to a minimum, we gladly agreed to be a part of the first live installation of the PermaSeal Insertion Valve to see if it could provide us with the solution that we needed.”

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SOLUTION

Mueller contracted Tap Master Inc. to conduct the installation of a 6" PermaSeal™ Insertion Valve on an older cast iron watermain at the chosen site. The area was excavated the day prior to the installation, the main was plated, and then the live installation of the PermaSeal Insertion Valve took place the next day.

The advanced design of the PermaSeal Insertion Valve integrates the functionality and performance of the Mueller® A-2361 Resilient Wedge Gate Valve and Mueller® H-600 Series ductile iron tapping sleeve in 4", 6", 8", 10", and 12" standard (DI, CI, PVC pipe) and oversized (A-C pipe) variants. With its "clean-seat" technology, the insertion valve provides users with reliable and repeatable watertight shut off, suitable for an exercise program, by having the gate seated on the precision cast surface of the valve body and not the host pipe. With a 350 psi rating, the PermaSeal Insertion Valve's innovative design allows for insertion into existing water mains with minimal service disruption and dependable functional service life, making it an ideal solution for the City of Phoenix Water Service Department's needs.



FIGURE 1 - CONTRACTOR, TAP MASTER INC., INSTALLING THE PERMASEAL INSERTION VALVE FOR THE CITY OF PHOENIX WATER SERVICE DEPARTMENT BY UTILIZING MUELLER CL-12 AND C1-36 DRILLING MACHINES FOR CUTTING AND VALVE INSERTION OPERATIONS.



FIGURE 2 - THE PERMASEAL INSERTION VALVE INTEGRATES FUNCTIONALITY AND PERFORMANCE OF THE TRUSTED MUELLER A-2361 RESILIENT WEDGE GATE VALVE AND MUELLER H-600 SERIES DUCTILE IRON TAPPING SLEEVE

RESULTS

The PermaSeal™ Insertion Valve was successfully installed in approximately three hours and the team was able to flush the water line and perform a brief shutdown to test that the line was dry, confirming that the installation was a success. Overall, utilizing the PermaSeal Insertion Valve significantly reduced service downtime to customers.

Since the initial installation in March 2020, the City of Phoenix Water Service Department has installed 15 more PermaSeal Insertion Valves around the city. Throughout the multiple installations, the City of Phoenix has found the PermaSeal Insertion Valve to be a more effective solution than other inserting valves on the market.

“What really sold me was that the PermaSeal Insertion Valve is a true system line valve. The previous inserting valve solutions we used operate differently and you must treat them with more care and awareness than a traditional line valve in the system. If a valve operator crew is working with our old solution, I have to warn them to ‘operate the valve with caution’ and not overtighten the valves because you can damage the valve itself or even crush the main. With the PermaSeal Insertion Valve, I do not

have to worry about the valve operators trying to tighten it in the field; it is going to be the same as turning a traditional line valve,” said Mojica.

The City of Phoenix Water Service Department has also seen time and personnel resource savings by utilizing the PermaSeal Insertion Valve. For traditional water shutdowns, the City of Phoenix notifies customers 48 hours in advance of a shutdown which sometimes requires hiring additional personnel to go door-to-door to inform customers that they should expect a water isolation event. *“We dedicate a lot of time and resources to notifying our customers in advance of an expected shutdown in order to provide the best customer service possible. As far as savings go, we don’t have to dedicate the time and staff resources to notifying customers if we are able to use a PermaSeal Insertion Valve because it won’t require a lengthy shutdown to complete the installation,”* stated Mojica.

Because of the time, cost, maintenance, and customer downtime savings realized from utilizing the PermaSeal Insertion Valve, the City of Phoenix Water Service Department plans to make it their insertion valve of choice for future installations.



FIGURE 3 - THE PERMASEAL INSERTION VALVE FULLY INSTALLED FOR THE CITY OF PHOENIX WATER SERVICE DEPARTMENT.

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