CASE STUDY

APS Plug Valve Pig

BOWLING GREEN, OHIO

> In Bowling Green, OH, a client faced a challenge with their 8" pipe that was rendered 'un-piggable' due to the presence of 10 squared-body plug valves. Traditional pigging methods were not an option. However, at APS, we thrive on innovation. We introduced our new PVP (Plug Valve Pig) solution, saving our client both time and the expense of replacing those 10 valves.

Project Summary

Customer:
Northwestern Water and Sewer District.

Type of Project:
Force main cleaning with APS Plug Valve Pig.

Date:
April 2023.

Results:

- *Successfully pigged a force main experiencing a 15% reduction in diameter with APS Plug Valve Pig.*
- *The cleaning resulted in savings of at least $4,000 for NWWSD.*
- *Utilized the new American Pipeline Solutions Plug Valve Pig (APS PVP) made from a proprietary gelatin solution.*

A FIRST FOR AMERICAN PIPELINE SOLUTIONS PLUG VALVE PIG IN WATER AND SEWER FORCE MAINS

Challenge:
Northwestern Water and Sewer District (NWWSD) faced a significant challenge when their force main experienced a 15% reduction in diameter. This meant lost performance due to the debris in the force main, costing NWWSD at least $14,000 annually in energy costs to run the pump. Dan Wickard, the client contact at NWWSD, identified this as a priority for the district and sought to solve the problem.

Solution:
American Pipeline Solutions (APS) was proud to work with NWWSD to help them improve the efficiency of their force main. NWWSD implemented the improved pigging feature of APS Plug Valve Pig (APS PVP), a pig designed explicitly for American Pipeline Solutions with the capability of navigating through plug valves. The pig is made from a proprietary flexible material, allowing it to take the shape of the square plug-valve, as well as the circular pipeline.

Results:

With the use of the APS PVP, the flow rate in the main increased, the C-Factor increased, and the daily run-time decreased, resulting in a more efficient system, as the tables below show. The successful implementation of the APS PVP enabled NWWSD to dramatically reduce the amount of time and resources that went into their daily operations. In addition, the pigging reduced the risk of blockages, saving cost in repair work and ultimately leading to a more reliable system. APS was excited to be part of this successful solution for NWWSD, ultimately leading to a more efficient and reliable force main.

Initial Results - April 28, 2023

Flow Rate (gpm)	TDH (ft)	Est. Pump Efficiency (%)	Pump Runtime % Day	Force Main C-Factor	Force Main % Open Area
1,280	70	61	36[2]	130	85%

Post Force Main Cleaning Results – June 27, 2023

Flow Rate (gpm)	TDH (ft)	Est. Pump Efficiency (%)	Pump Runtime % Day	Force Main C-Factor	Force Main % Open Area
1,780	53	62	26[5]	150	100%

American Pipeline Solutions was proud to help Northwestern Water and Sewer District achieve their desired results. By utilizing the APS PVP, the improved pigging feature allowed them to perform conventional pigging with a new pig specifically for plug valves. With the successful implementation of this feature, Northwestern Water and Sewer District estimated a pump energy savings of roughly $4,000 annually with the cleaned force main. This impressive outcome was largely due to the collaboration between American Pipeline Solutions and Dan Wickard, client contact at Northwestern Water and Sewer District.

Conclusion:

With American Pipeline Solutions' expertise, Dan was able to successfully identify the problem and take quick action to resolve it. Now, Northwestern Water and Sewer District is running smoothly and will continue to do so, thanks to improved pigging with the APS PVP. By using American Pipeline Solutions Plug Valve Pig and its improved plug valve pigging abilities, Northwestern Water and Sewer District have demonstrated their commitment to their goal of making a difference in the lives of their customers and the environment. This partnership has already yielded estimated pump energy savings of roughly $4,000 annually, and the two organizations are likely to continue to work together in the future to further promote cost savings and sustainability.