

# City of Pendleton, OR Installs Electromagnetic Flowmeter for Utility Water Application

The full-bore, unrestricted mounting OxDN flowmeter improves measurement for wastewater facility



## City of Pendleton

The Public Works Department addresses the never-ending effort of using sustainable solutions to bring the community the highest possible quality of life within the framework of environmental, social, and economic responsibility. Public Works employees contribute to the daily lives of citizens through planning, building, managing and operating the heart of the local community and maintaining quality of life. For these efforts, City of Pendleton is recognized as an innovator creating a lasting impression with citizens and other communities around the Pacific Northwest.



City of Pendleton Wastewater Treatment Resource Recovery Facility

**Summary** Set along the foothills of the Blue Mountains, on either side of the Umatilla River, is the “True West” city of Pendleton, Oregon. Known for its rich western heritage, legendary rodeo, woolen mills and underground tunnels, the town

is steeped in tradition. Just along the Umatilla riverbed is the City of Pendleton’s Wastewater Treatment Resource Recovery Facility (WWTRRF) which plays a vital role in the safety and supply of one of the town’s most valuable resources: water. The facility

serves a population of 17,000 people and treats roughly 2.5 million gallons of water per day (GPD).

Like all wastewater treatment facilities, the City of Pendleton WWTRRF faces the daily challenge of maintaining water safety and quality for the city while improving energy consumption and meeting city, state and national regulations. This makes consistent and reliable measurement essential to the entire process. With reliable measurement, technicians can better control the process, make better decisions, implement predictive maintenance and save both money and energy.

However, in the tight and restrictive spaces in water treatment facilities, it can be difficult to install the necessary instrumentation. Between short pipe runs, sharp bends and other challenging applications, it can be costly and time consuming to fit devices in the places they're most useful and necessary. The City of Pendleton faced this challenge at the WWTRRF until they installed Endress+Hauser's Promag W unrestricted mounting OxDN electromagnetic flowmeter which provides stable measurement regardless of mounting location.

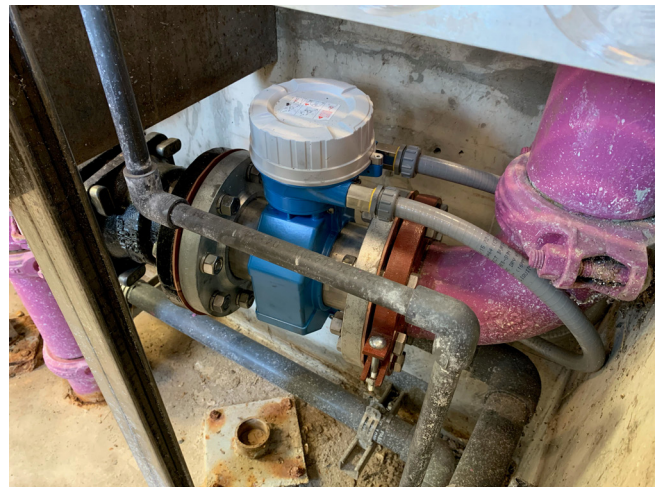
**Challenge** Before implementing the Promag W OxDN, the City of Pendleton wastewater treatment facility was unable to obtain flow measurements for process water used within the facility. They were estimating the flow rate and amount of water coming through but were not able to get exact numbers. This was a difficult spot for a flowmeter because there was not a sufficient straight run – instead, the flow runs vertical through a 90-degree elbow then connects to a full port valve.

Before the Promag W, their options were limited and costly as typical electromagnetic flowmeters require

straight pipe run of 3-5 pipe diameters upstream of the meter and 1-2 diameters downstream of the meter. In some situations, facilities could modify the piping to increase the length of the pipe run to comply with recommended inlet and outlet runs, but because of the limited space, this wasn't a viable option. The other possibility would be to install an electromagnetic reduced bore flowmeter; however, these meters create a pressure drop resulting in higher energy costs and lower plant efficiency.

**Our Solution** Endress+Hauser's Proline Promag W 400 for water and wastewater applications requiring unrestricted mounting was the solution they were looking for. The first of its kind, the magmeter is particularly designed to measure flow independently of flow profile and mounting location without sacrificing pressure or efficiency. Kyle Willman, the WWTRRF lead technician, attended an Endress+Hauser online seminar where the subject matter experts discussed the new technology. Kyle Willman reached out to Cameron Bachman with Field Instruments and Controls, the local Endress+Hauser sales and service representative, to learn more about the electromagnetic flowmeter capabilities. Willman saw how the new technology would fit the goals of the treatment facility and made the decision to purchase the device. The electronic flowmeter was easily installed without having to rip up sections of piping to extend the lay length saving the City in additional installation costs. With the ability to retrieve accurate data regardless of flow profile and flow rate, the City of Pendleton Wastewater Treatment Resource Recovery Facility is able to operate at a higher efficiency and lower cost.

"This wasn't an ideal placement for a flowmeter before, so they were having to estimate the flowrate. But having a steady flow helps technicians make better decisions." said Cameron Bachman, "Better flow, better decisions."



The Promag W 400 is easily installed directly in-line to provide accurate data with no pressure loss

**Results** The City of Pendleton Wastewater Treatment Resource Recovery Facility has been able to gain accurate and repeatable flow and total readings since the installation of the Promag W 400 OxDN. With the addition of the Promag, they can collect live data and totalize the flow over a 24-hour period. This helps identify problems like leaks or open valves much quicker which reduces water waste. Before the Promag, it was hard to catch a leak until thousands of gallons of water had already been lost. It would take longer to notice the problem and longer to identify the solution.

“Knowing the average daily flow is a big saving grace. It helps predict if the system has leaks and helps us find them faster, which is a big energy saver. My crew has already identified and corrected two issues that could have ran water a long time,” says Kyle Willman. “Cost savings could also be quite substantial, especially if we’re saving an extra 40,000 gallons of water a day.”

Not only does accurate data allow for quicker response times, but by trending the data, it also enables technicians to run predictive modeling to prevent problems before they occur. This further minimizes energy and water loss and allows the plant to operate at a higher level of safety, efficiency and overall plant performance.



#### Benefits at a glance:

- Energy savings
- Optimized operation costs
- Predictive modeling with data trending
- Ease of installation
- Minimizes water loss due to leakage
- Quicker response to errors

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