

City of Warren, MI, Installs Electromagnetic Flowmeter for Waste Activated Sludge Application

Proline Promag W full bore, requiring zero straight pipe run, provides high accuracy measurement

City of Warren

The City of Warren's Water Recovery Facility has treated residents' wastewater and produced quality effluent water to the state since 1957. Since then, the plant has undergone numerous upgrades and was recently awarded with the 2020 Premier Utility Management Performance Award in the state of Michigan. The Division Head of the City of Warren Treatment plant, Bryan Clor, also just received the Public Utility Professional of the Year Award.



"When talking about initiatives and innovative technologies, nothing is out of the realm of possibility. We are thankful that Mayor Jim Fouts supports that vision, as we continue to try new things to increase overall efficiency. Water is our most precious resource; we have to do what we can to protect it."

– Bryan Clor, Division Head of Wastewater Treatment



Bryan Clor, Division Head City of Warren Wastewater Treatment Plant, MI

Summary: The City of Warren Water Recovery Facility in Michigan, treats and protects the waters of the state. Proper water treatment is the main goal for the City as it has a direct impact on the future, ecosystem and providing residents safe and clean water to drink and participate in outdoor activities.

Wastewater treatment plants are challenged daily to ensure plant effluent (discharge) meets or exceeds the state's compliance limits. Wastewater treatment plants require field-proven process instrumentation to provide them with accurate and repeatable data about the process such as flowrates, tank levels,



pressures, temperatures and liquid analysis parameters such as pH, total suspended solids, dissolved oxygen and more. Reliable measurements allow users to better control their process, be more cost-effective, and produce quality water that complies with local, state, and national regulations. Endress+Hauser's Promag W unrestricted mounting 0 x DN electromagnetic flowmeter provides a solution for challenging applications by presenting users with maximum measuring performance without concerns of pressure loss and typical straight pipe run requirements.

The Challenge: Prior to making the switch to the Promag W unrestricted mounting 0 x DN flowmeter, the City of Warren Water Recovery Facility was using a 35-year-old Endress+Hauser flowmeter that was still functioning as it was designed originally – but a lot has changed in the last 35 years. The old technology was not easy to validate. Facilities personnel would compare the data with other meters they had installed downstream, and they ultimately made decisions based on those comparisons, but newer technology could make those decisions much easier with more accurate data. The old meter needed constant recalibration and its non-repeatable data was costing the facility valuable time and money. So, an update to more modern technology was needed.

As depicted in the picture showing the installation, space restrictions meant a new electromagnetic flowmeter would have to be mounted with zero straight pipe run both upstream and downstream of the sensor tube. At the City of Warren Recovery Facility, they incinerate the sludge waste that is removed from the process. When the accurate amount of sludge isn't known, the facility runs their furnace (incinerator) for long periods of time, resulting in more money spent on fuel. They required a flowmeter that could provide accurate and reliable data without the need of constant recalibration.

The Solution: The City of Warren is supported by Forberg Scientific, the local Endress+Hauser representative. Over the past few years, Brian Gallagher at Forberg Scientific has worked closely with the City to build a positive cooperative relationship. Their collaboration is built on the expertise about the latest technologies available in instrumentation which fits perfectly with the City of Warren's vision of innovation. Brian Gallagher recently shared the latest technology from Endress+Hauser in electromagnetic flow and Bryan Clor saw how this innovation fit with the goals of the plant and made the decision to upgrade the plant's old flowmeter.

The Promag W unrestricted mounting 0 x DN electromagnetic flowmeter mounted directly into the process with the same lay length as the existing device, thus saving the City from having any additional piping and installation cost. With this flowmeter having the ability to measure flow independently of the flow profile and mounting location, it was ideal for this sludge application. With more accurate data being provided, and no need for any constant recalibration, the City of Warren Water Recovery Facility process is operating more effectively in terms of both time and cost.

"We wanted a reliable product, that provides accurate data and at a competitive price," said Bryan Clor. "A reliable product that provides accurate data enables you to make good decisions in your plant."

Results:

"Any other meter would've been three or four times more expensive due to installation costs alone," Bryan said. "The new meter fit perfectly in the existing footprint of the old meter and didn't require any modifications to the piping."

The City of Warren Water Recovery Facility has been able to attain accurate data at a high repeatability rate since the installation of the Promag W unrestricted mounting 0 x DN electromagnetic flowmeter. Reliable and accurate data eliminates the need for their personnel to be constantly checking and comparing the data with other meters located downstream. The need for recalibration is gone and they now have a meter that produces data they can trust. Not only that, but the accurate data also allows for the plant to balance the mixture of sludge and correctly run their furnace more cost effectively. Eliminating the need for making decisions based on information from other meters has been reassuring for the City of Warren. After installing the Promag W unrestricted mounting 0 x DN electromagnetic flowmeter, the City of Warren Water Recovery Facility has had an easier time collecting accurate data while saving valuable time and money.

"We value our relationship with Forberg Scientific's Brian Gallagher," said Bryan. "Having trust in a product and our representative really goes a long way in feeling confident with the product line. It makes sense to go with an existing manufacturer like Endress+Hauser. They have experience in our industry and have a track record of success."

The City of Warren selects capital improvement vendors based upon a sealed bidding process. This article is not intended to imply any exclusive contractual relationship with Endress Hauser, Forberg Scientific, or any other particular contractor or in any way bind the City of Warren to select any particular vendor for future projects.

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CS01652X/24/EN/01.20