

# Pulp and Paper Mill Reduces Utilities Costs and Environmental Impact with Ultrasonic Level

## RESULTS

- Reduced utilities costs
- Decreased environmental impact
- Improved compliance with local regulations



## APPLICATION

Plant sewer water flow to local processing facility

## CUSTOMER

Pulp and Paper Mill in Wisconsin, USA

## CHALLENGE

A paper mill had difficulty monitoring the flow in their sewer water line. The flow rates and water clarity determine how much the city charges for water treatment processing. This system requires a water permit and periodic calibration to assure the maximum flow rate is not understated.

This paper mill had been utilizing older ultrasonic devices that were not as accurate and reliable as the application required. This mill previously used a 30-year-old ultrasonic with a v-notch weir to calculate sewer water flow. A third party calibrator indicated that the old ultrasonic technology was inaccurate and estimated that the flow rates could be off by as much as 10-15 GPM (37-57 LPM).

Inaccuracies in the flow calculations lead to many negative business impacts. Unreliable flow calculations lead to higher utilities costs for water treatment processing. The mill had less control over the environmental impact of the sewage and risked being noncompliant with local regulations. This customer faced potentially high investment costs to upgrade the technology.

*This paper mill can now verify accurate billing of sewage treatment by using the Rosemount 3102 Ultrasonic Transmitter with a Rosemount 3491 Series Universal Control Unit.*



Figure 1. Rosemount 3102 installed on mill's sewer water line.

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### SOLUTION

Using the existing v-notch weir, the paper mill installed a Rosemount 3102 Ultrasonic transmitter with a Rosemount 3491 Series Universal Control Unit to calculate the sewage flow. The top-mounted Rosemount 3102 was installed upstream of the weir to measure the level and then transmitted this value to the Rosemount 3491. After inputting the HART signal, the Rosemount 3491 then calculated and reported the volume flowing over the weir. This easy installation made the transition to the new flow calculation system smooth and cost effective.

This customer has increased reliability of sewage flow readings through the use of the Rosemount 3102 to provide a more accurate digital HART level reading to the Rosemount 3491 for conversion to flow. With minimal upfront cost, they can now verify accurate billing of sewage treatment and estimate annual utility savings between \$40K to \$70K. The system accuracy has been verified by a third party and only requires calibration checks annually. Overall, the paper mill has better control of the sewer water environmental impact and can easily stay in compliance with local regulations.

### RESOURCES

#### Emerson Process Management Pulp and Paper Industry

<http://www.emersonprocess.com/solutions/paper/>

#### Rosemount 3100 Series Ultrasonic Level Transmitters

[http://www.emersonprocess.com/home/news/pr/707\\_3100.html](http://www.emersonprocess.com/home/news/pr/707_3100.html)



Figure 2. Rosemount 3491 controller used to calculate volumetric flow in the sewage line.

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