

Valmet wastewater automation

To improve the efficiency of your wastewater treatment plant



Accurate measurements and optimization solutions for measurable savings

Valmet offers superior solutions for industrial and municipal wastewater measurement and optimization needs, serving even the most challenging applications. Valmet's automation and measurement solutions portfolio includes decades of pioneering measurement solutions in a wide range of industries, offering top-of-the-line equipment combined with unique service expertise.

Working closely with the customers and the industry leaders, we have developed superior value-enhancing solutions for the wastewater industry. Valmet has an international network of specialists, bringing exceptional know-how to your place of business, to ensure that you can always get the most out of your process and optimize your costs.

Reaching higher

Even more efficiency and sustainability-minded solutions are needed to bring your wastewater treatment forward today. Most municipal wastewater plants are growing in size in terms of populations they serve, particularly in cities where neighboring communities are included in the same facilities. This makes efficiency and capacity even more important in servicing the community and assuring a healthy future in terms of environmental sustainability.

Cutting-edge technology

Valmet understands that innovative technologies and reliable measurement solutions are key tools in helping customers meet increasing demands and fulfilling the strict requirements for water quality and environmental compliance. That is where Valmet's decades of technological development and unique experience can bring more out of your process.

In addition to cutting-edge measurement technology and instrumentation, Valmet is also at the forefront of Industrial Internet development. By early 2000, customers already benefited from expert 24/7 remote services for troubleshooting assistance and preventive maintenance. Today, customers are getting the most out of their process by utilizing Industrial Internet solutions to increase their productivity, end product quality and raw material efficiency.

Through reliable and accurate measurement technologies, pioneering solutions and optimization opportunities, your wastewater plant can achieve its processing goals effectively and sustainably.

Enhance your wastewater treatment:

- Improves mass balance management and dewatering
- Secures continuous accurate data
- Lower transportation costs
- Reduces polymer consumption
- Reduction in laboratory sampling
- Lower fuel consumption
- Efficient energy consumption
- Minimizes disturbances to stabilize the process
- Short payback time



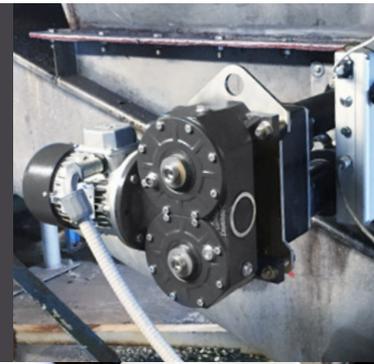
Truly sustainable development brings significant environment and cost advantages



Smart technologies pave the way for more productivity, end product quality and efficiency



Reliable
measurements



Reliable technology for your wastewater applications

Valmet Total Solids Measurement (0-40%)

Valmet Total Solids Measurement (Valmet TS) measures sludge feed and output cake solids for better process control. Valmet TS helps maintain optimized solids in the sludge entering the digester, which helps save on running costs and improves intake digester capacity.

Valmet TS also helps optimize polymer dosages, resulting in significant savings. Better dewatering efficiency reduces sludge transport costs and improves incineration efficiency, if the sludge is eventually burned. The use of dewatering equipment can be less, which also helps plants save on energy consumption and maintenance costs.

Valmet TS benefits:

- Lowers the need for laboratory testing
- Lower transportation and incineration costs
- Reduces energy and polymer consumption
- Minimizes sludge accumulation
- Low maintenance requirements, with no moving parts

Valmet Low Solids Measurement (0-5000 mg/l)

Valmet Low Solids Measurement (Valmet LS) measures suspended solids in centrate liquid. Until now, there has not been online measurement technology available that offers reliable measurements of material with minimal solids content.

The unit also deaerates, filters and measures the process solids and improves the centrifuge function and throughput. A higher sludge content in solids also optimizes the incineration process and reduces transportation costs. Valmet LS minimizes the need for manual laboratory sampling due to its reliable and accurate operation.

Valmet LS benefits:

- Accurate measurements easily available
- Self-cleaning and flushing for low maintenance optical LED measurement
- Helps to optimize polymer dosing and centrifuge torque
- Improves throughput of centrifuge
- Minimizes the amount of suspended solids that are recycled back into the plant



Polymer savings



Less lab testing



Valmet Dry Solids Measurement (15-35%)

Valmet Dry Solids Measurement (Valmet DS) offers on-site sampling and analysis, with stable measurements. Unique to Valmet DS, the sample is extracted from falling cake flow, before it is returned to the process. Accurate measurements are available real-time, to provide a solid foundation for controlling and developing the process, and improving efficiency.

Through accurate dry cake measurement, the wastewater plant can optimize polymer dosage and find energy savings through better torque control. The need for manual laboratory testing is also significantly reduced. Further savings can be found in maximized drying of cake, which reduces transportation costs and fuel consumption during incineration.

Valmet DS benefits:

- Reduces need for laboratory sampling
- Increases capacity
- Motor-controlled auger removes air issues in cake flow
- Savings in transportation and incineration costs
- Optimizes polymer dosage
- Energy savings through better torque control

Valmet Sludge Dewatering Optimizer

Valmet Sludge Dewatering Optimizer (Valmet SDO) applies inputs from solids and centrifuge measurements to optimize the dewatering process. Optimization takes shape from Valmet TS measurement of feed solids and dry cake percent solids and Valmet LS's centrate suspended solids measurements. With this data, Valmet SDO utilizes a multi-variable model predictive control (MPC) to control polymer dosing and centrifuge optimization.

Valmet SDO automates centrifuge operation, bringing 24/7 functioning without the need for an operator. Plants can have access to real-time solid measurements, reducing the need for time-consuming laboratory sampling. Valmet SDO's modular structure makes it easily adaptable to most existing automation systems.

Valmet SDO benefits:

- Optimizes and automates centrifuge operation
- Savings through more efficient polymer usage
- Transportation and incineration cost savings
- Greater process sustainability
- Minimizes need for laboratory sampling
- 24/7 operation, no operator necessary

Taking your wastewater treatment forward

Valmet works in close collaboration with customers to ensure that the highest quality services and solutions are available for better wastewater management, wherever you are located in the world. Through innovative solutions and continuous development, customers can see measurable savings both now and in the future.

“Valmet DS is a reliable online measurement. Now we can really see how well the centrifuge is operating. We are satisfied.”

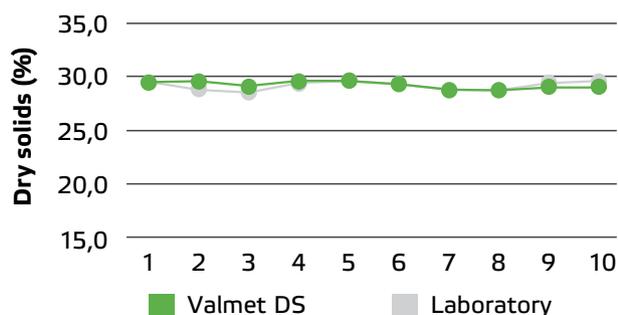
Sami Ilomäki
Operations engineer,
Tampere Water

Tampere Water

Tampere, Finland, Europe

Valmet has supplied cutting-edge solids measurement and sludge dewatering optimization technology to the Tampere Water, Viinikanlahti wastewater treatment. The Valmet SDO will help the plant save on running costs, chemical usage and increase capacity. Optimization, together with reliable and automated solids measurements, also helps to reduce energy consumption and improve environmental efficiency.

Tampere Water's Valmet DS vs. laboratory



Viikinmäki

Helsinki region, Finland, Europe

Background:

A centralized wastewater treatment plant serves a population equivalent (PE) of 800,000 and processes around 260,000 cubic meters per day. Has had experience with Valmet TS And LS measurements in various applications since 2003.

Challenge:

Improving treatment effectiveness through accurate calculations

Solution:

Installation of four Valmet TS solids measurement units on the inlets to four sludge centrifuges

Result:

"The plans to implement mass balance calculation and control will continue. Valmet TS meters are one of the most accurate measurements we have, and a real industrial-quality measurement".

Tommy Fred

HSY Viikinmäki

City of London

Ontario, Canada, North America

Background:

The City of London in Ontario operates six wastewater treatment plants with a combined average daily flow of around 210,000 cubic meters per day. Primary and secondary sludge from all plants are dewatered at the Greenway plant.

Challenge:

Optimize the sludge removal sequence

Solution:

Installation of Valmet TS to optimize the primary clarifiers

Result:

No mechanical breakdowns occurred due to heavy sludge build up."

"High trust in the measurements."

Mark Spitzig

City of London

Kanto area

Japan, Asia

Background:

One of the largest sludge plants in Kanto area that processes around 400,000 tons per year.

Challenge:

Optimize water content of dry cake before incineration, save on fuel costs and decrease CO₂

Solution:

Valmet TS for measuring water content and for enhanced feedback control

Result:

"Calculated yearly, the savings are around 50,000 euros (5 million JPY) and hundreds of tons of CO₂."

Tsukishima Techno Ltd.

Maintenance Service

North Carolina

USA, North America

Background:

North Carolina wastewater plant wanted to upgrade its technology to reduce the need for time-consuming laboratory sampling.

Challenge:

Continuous dry solids measurements for process optimization

Solution:

Valmet DS installed in centrifuge chute before conveyor

Result:

"Valmet DS offers remarkable polymer and energy savings, achieved through continuous and reliable solids measurement."

Jarmo Havana

Product Manager Measurements, Valmet



Valmet's professionals around the world work close to our customers and are committed to moving our customers' performance forward – every day.

Over 8,200 analyzers and tens of thousands of measurements delivered all over the world.



For more information, contact your local Valmet office. www.valmet.com
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