

Metso:Outotec

Reshaping the future of tailings

Tailings Management Solutions



Global megatrends in mining

Rising demand for sustainably mined materials is pushing the need for more advanced technologies. Stricter environmental regulations are shifting the focus towards tailings management and water resource efficiency. Modern mineral processing methods are required to improve predictability and continuity of operations.



Sustainability

Demand for sustainable operations & journey towards zero harm mines



Economic viability

Need for modern tailings solutions leading to better investor confidence



Smart technology

Innovation and technical advancements are needed to meet renewed standards

Metso Outotec Tailings Management Solutions — reshaping the future of tailings

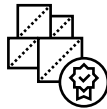
With its extensive process expertise, Metso Outotec offers cutting edge solutions for any tailings management needs, while reducing water use, environmental impact, risks, and costs. Combining end-to-end industry leading thickening, filtration and material handling portfolio, we are reshaping the future of tailings by offering the most comprehensive tailings management solutions to customers.

From test work to plant design and delivery, backed by life-cycle service support; our scope is configured to your project requirements, providing a sustainable and economically viable solution.

Core differentiators



Thickening, filtration and dry
material handling expertise



Pre-engineered modules with
single supplier delivery



Testwork to support plant
design and sizing



Performance and capacity
guarantees



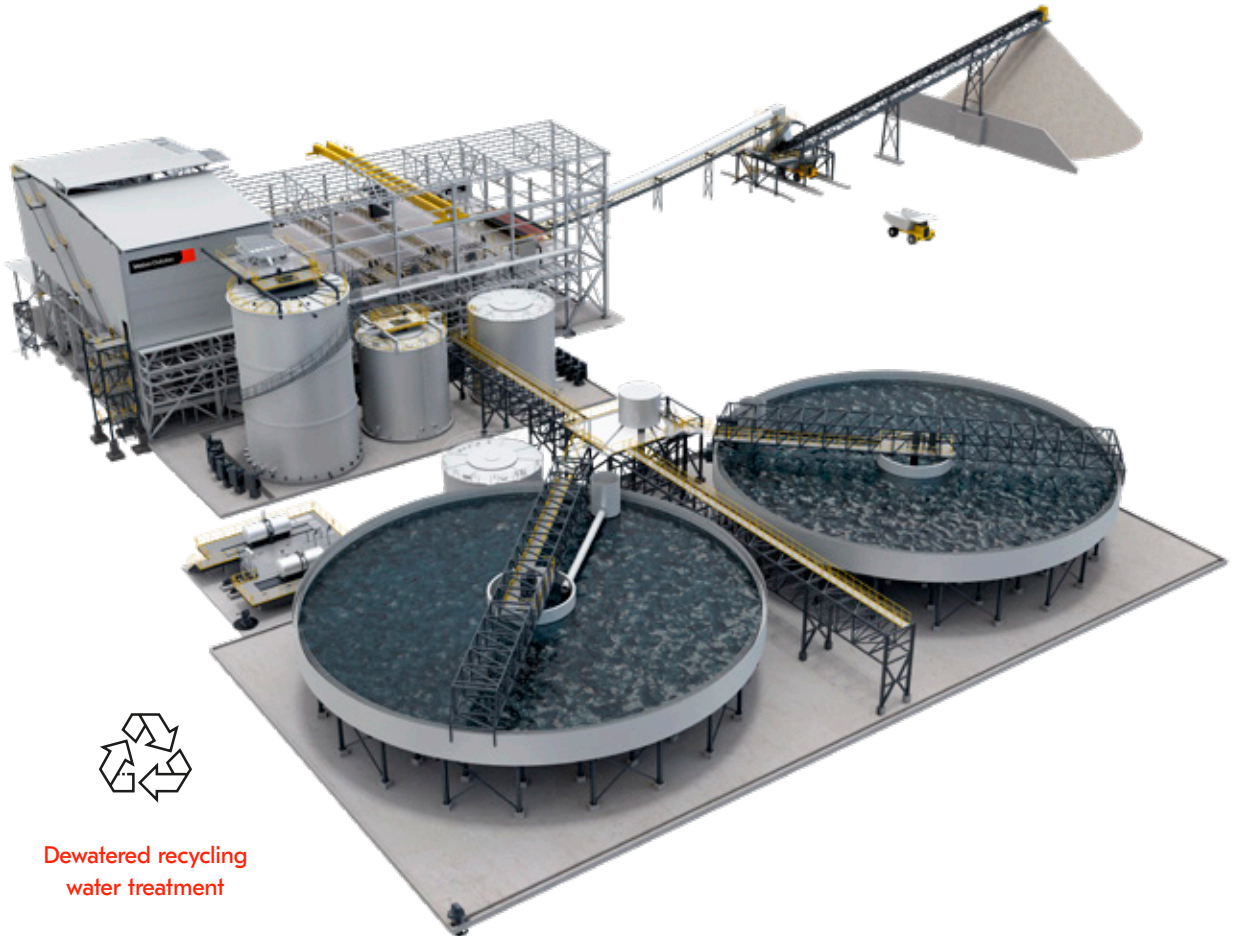
Life-cycle
support



Improved
safety



Dewatered recycling
water treatment



Leading the transformation in mine tailings management

Metso Outotec Tailings Management Solutions unites great products with decades of expertise. Our comprehensive portfolio combines three practices: thickening, filtration and tailings handling with conveying and dry stacking.

Thickening plant unit

Based on Metso Outotec IPS, HRT, HCT & PT technologies, a thickener plant dewateres the tailings from very low solids density to medium and high density. The core is the feed system that allows the flow to settle and entrains air to escape. It also provides feed in the desired velocity to distribute the slurry evenly into the feedwell.

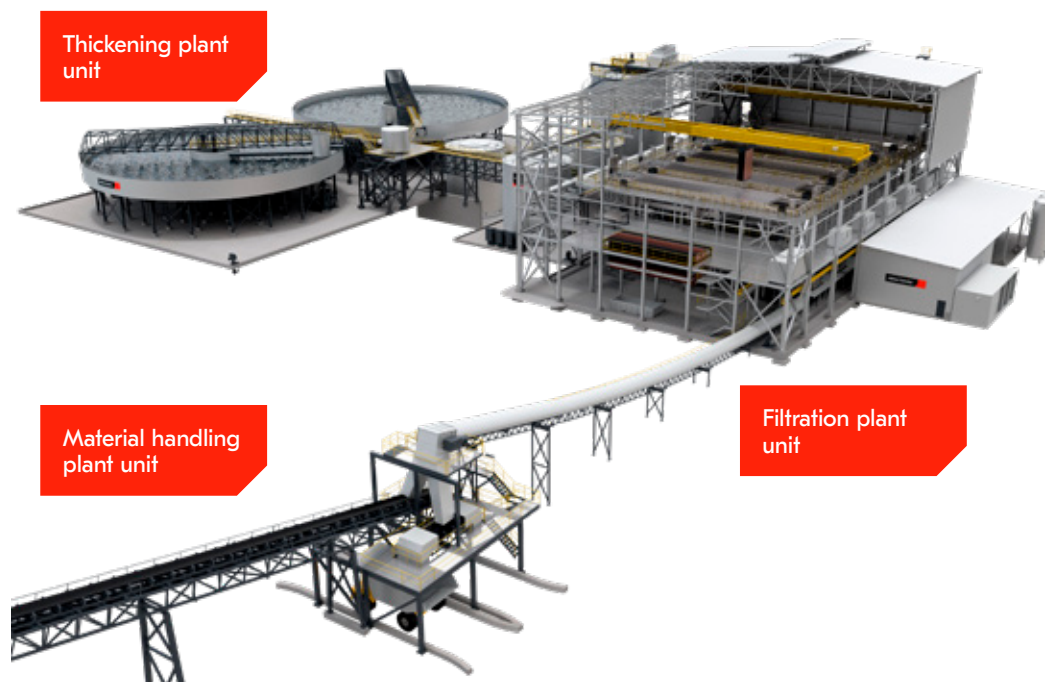
Our Reactorwell™ and Vane Feedwell provides enhanced mixing, dilution, and retention of the feed, maximizing flocculant adsorption and aggregate growth. Advanced control systems such as thickener optimizer also helps in improving the overall performance of the plant unit.

Filtration plant unit

Based on FFP or FP-S filtration technology, the Metso Outotec filtration plant unit is specifically designed for high volume tailings processing leading to savings in operational and maintenance costs. The pre-engineered module can always be tailored according to the specific requirements of the project.

Material handling plant unit

Metso Outotec offers a wide range of material handling equipment that is reliable and needs less maintenance. Our extensive conveying and stacking portfolio help in transferring material from the filter plant to the actual tailings storage facility. Designed with robust components, the equipment is built to last and perform under even the toughest conditions.



Focused filters for tailings handling

FILTER TYPE	MIN FILTRATION AREA (M ²)	MAX FILTRATION AREA (M ²)	MAX PRESSURE (BAR)
FPS1016 to FPS2016	50	800	16
VPA1510	68	204	10
VPA2010	250	515	10
Larox® FFP2512	288	595	12
Larox® FFP3512	670	1314	12
Larox® FFP3712	1980	1980	16
CC-144	144	144	—

Why choose Metso Outotec Tailings Management Solutions



Sustainability

- Increased dewatering leads to higher availability of process water
- Environmental, reputational, and legal risk management
- Ability to manage any volume of tailings
- Modern tailings management solutions that directly support the goal of zero harm and zero failure
- Solutions for modern handling with possibility to treat and recirculate the process water resulting in lower fresh or raw water intake



Economical viability

- Decreased operational cost through water efficiency, recirculation, and recovery
- Minimized financial risks due to reduced possibility of dam failure
- Optimal CAPEX & OPEX balance, ensuring development of overall economic viability
- Reduced waste management costs through Metso Outotec's extensive process expertise and holistic approach



Capability

- Dedicated specialists with expertise in tailings-related processing, including mineralogy, geology, technology, water treatment and mining processes
- End-to-end process plant solutions
- Comprehensive & tailored engineering and solution design based on studies & testing results
- Case specific equipment with market leading technology for every stage of process
- Advanced solutions for efficient dewatering, handling & reprocessing of tailings with long service life

Sustainable and water efficient tailings management to help our planet



Up to 90% water recovery with high performance filters



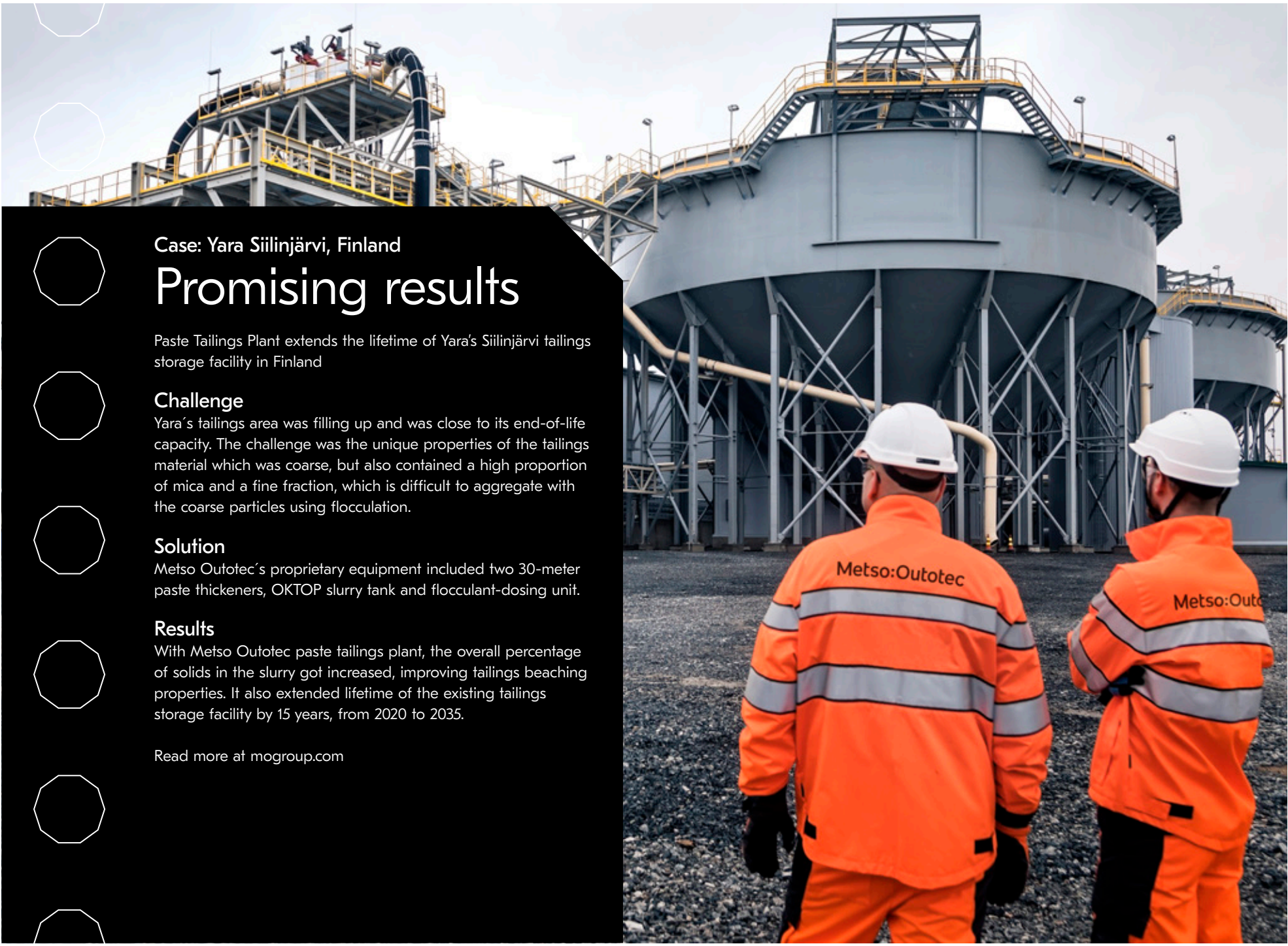
Up to 50% less floor space increasing safety and lowering CAPEX with Inclined Plate Settler



Improved filtration efficiency into fine and coarse streams with **MHC™ Series Hydrocyclone**



Reduced reagents using thickeners with **Reactorwell™** technology



Case: Yara Siilinjärvi, Finland

Promising results

Paste Tailings Plant extends the lifetime of Yara's Siilinjärvi tailings storage facility in Finland

Challenge

Yara's tailings area was filling up and was close to its end-of-life capacity. The challenge was the unique properties of the tailings material which was coarse, but also contained a high proportion of mica and a fine fraction, which is difficult to aggregate with the coarse particles using flocculation.

Solution

Metso Outotec's proprietary equipment included two 30-meter paste thickeners, OKTOP slurry tank and flocculant-dosing unit.

Results

With Metso Outotec paste tailings plant, the overall percentage of solids in the slurry got increased, improving tailings beaching properties. It also extended lifetime of the existing tailings storage facility by 15 years, from 2020 to 2035.

Read more at mogroup.com

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