



Advanced water treatment of pharmaceutical residues plant nearby a ski resort

**Mellifiq advanced water
treatment process to eliminate
pharmaceutical residues in a
wastewater treatment plant with
high seasonal variations**

MELLIFIQ

Wastewater Treatment Plant, Malung-Sälen, Sweden

The largest water treatment plant in Malung-Sälen municipality is located in close proximity to a popular ski resort. The wastewater treatment plant exhibits high seasonal variations in flow, nutrients, and micropollutants. Mellifiq performed a pilot study to optimize the advanced water treatment of active pharmaceutical ingredients (APIs) during both high and low season. As a result, a full-scale treatment plant was sized based on the project results.

Facts

Location:	Sälen, Sweden
Industry:	Public utility
Project value (USD):	600,000

Solution:

Mellifiq delivery:	A containerized advanced water treatment system, incorporating sand filtration, ozonation, and adsorption using activated carbon
Preformance:	>99% API-treatment
Capacity:	20 m³/h
Dimensions:	20ft container (6.1 x 2.5 m)

The problem

EU:s Urban Wastewater Treatment Directive is revised to include treatment of pharmaceutical residues, APIs, for all large treatment plants and areas with sensitive recipients. In order to comply with the upcoming regulations, a quaternary advanced water treatment step is to be implemented.

The treatment plant in Sälen is handling high variations in flows and load of nutrients, resulting in the complex challenge of sizing a full-scale treatment plant.



Image from inside the wastewater treatment plant.

The solution

To evaluate the performance of advanced wastewater treatment during seasonal variations, a modular containerized system was installed at the treatment plant. A part-flow was treated using the techniques sand filtration, oxidation using ozonation, and adsorption using granulated activated carbon (GAC).

The pilot system was installed at the outlet of the treatment plant, as would be the case for a full-scale quaternary treatment plant.



Outside image of the containerized advanced water treatment system.

Evaluation

The project was evaluated during 6 months of operation, including different process scenarios and regular sampling to optimize the treatment efficiency and energy consumption. The results showed high variations in API-concentrations between high and low season, as expected. The advanced water treatment system yielded up to 99% reduction of API-substances.

The project results were used to size a full-scale advanced treatment system with >90% removal of selected API-substances, and a hydraulic flow of up to 1 000 m³/h.



Image from the inside of the 20 ft container.

Learn more

Watch the Mellifiq case film on the treatment of micropollutants at Malung-Sälen's municipality here:
[Youtube](#)

About Mellifiq

Mellifiq is a multi-awarded environmental service company group, that has since the early nineties evolved into a world leading system and solution provider with multiple groundbreaking applications for industrial, municipal, and real estate clients. We supply cutting-edge technologies to manage the most sophisticated air, water, and energy challenges.

Mellifiq offers a complete range of air and water treatment technologies and solutions across multiple industries such as processing industry, energy sector, food and beverage, pharmaceutical, wastewater treatment and commercial real estate.

Mellifiq offers strong and renowned brands, such as Ozonotech, Nodora and Water Maid, and world-class engineering services combined an excellent track record of more than 40 years of innovation. We help our clients achieve the most efficient and sustainable solutions while creating the maximum value for their businesses.

With several business units across Europe, Mellifiq is headquartered in Stockholm where research and development, production, QA and certification all take place. Our unique technology and our extensive expertise have made us the Center of Excellence for the world's most complex projects, and a global player with installations on all six continents.

Everyday millions of people rely on our solutions for ventilation, disinfection, sanitation, and odor control. We are committed to raising the bar for the concept of clean and the industry standard for engineering, technical services and general contracting.

For additional information, visit our website at www.mellifiq.com

