

Odor Treatment With Nodora CAT, Nodora AirMist Wet Scrubbing and Ozonetech RENA Pro

**High-performance modular,
compact air treatment systems for
efficient H₂S removal**

MELLIFIQ

Vansbro, Sweden

Mellifiq has delivered a multi-stage solution for complete air purification at the Vansbro wastewater treatment plant. The plant has been rebuilt to modernize and streamline operations, as well as to increase its capacity. One of the key elements of this upgrade was the implementation of an effective odor reduction solution. The facility has also integrated a new sludge hall into an existing building, which places even higher demands on the air purification system to ensure a healthy working environment.

Facts

Location:	Vansbro
Industry:	Air Treatment
Purpose:	Odor Control – Exhaust Air

Solution

Odor Control – Exhaust Air:	Ozonetech RENA Pro B-series
	Nodora CAT B-series
Airflow:	Up to 10 000 m ³ /h with H ₂ S och VOC
Sludge hall:	Nodora AirMist A-series
Flow:	3000 m ³ /h with over 25 ppm VOC

Brands:

Nodora
a MELLIFIQ brand

ozonetech.
a MELLIFIQ brand

The Problem

When Vansbro’s wastewater treatment plant took the leap from 20th-century operations into modern standards in 2024, the focus was particularly on improving the working environment, energy performance, and reducing odor emissions. The facility handles exhaust air from several key parts of the process—including bioreactors, pump stations, sedimentation basins, and a sludge hall—where hydrogen sulfide (H₂S) and volatile organic compounds (VOCs) are commonly present.

Due to the close proximity between supply and exhaust air systems, there was a high risk of odor recirculating back into the facility and spreading to nearby residential and industrial areas. A common characteristic of these pollutants is that they often have an extremely strong and irritating odor even at very low concentrations. As such, an effective air treatment system is required to remove these contaminants before the air is released. This is essential to ensure a healthy and pleasant environment for both onsite personnel and nearby residents.

Gas Analysis

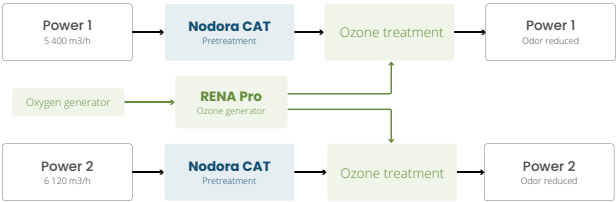
To monitor and verify the system’s performance in terms of odor removal, we offer a wide range of gas analysis options, summarized in the table below.

Parameter	Instrument	Metod
VOC, total concentration	FID	Inline
VOC, compound identification	GC-MS	Offline
Ozone concentration	UV photometer	Inline
Ammonia	pH-sensitive tubes	Inline
H ₂ S	Electrochemical sensor	Inline

Odor Treatment

Pre-treatment is carried out using a catalytic media optimized to reduce airborne pollutants. Ozone is then injected into the downstream airflow to oxidize any remaining contaminants.

Below: Block flow diagram of the air treatment process



Work environment and energy efficiency were two of the main focus areas when the Vansbro wastewater treatment plant finally made the leap from the 20th century to 2024.

The Solution

To meet the high demands of the project, an advanced and integrated air treatment solution was implemented, combining ozonation and regenerative catalytic purification. The system was specifically designed to effectively reduce odorous compounds, with a focus on hydrogen sulfide (H_2S) and volatile organic compounds (VOCs), both commonly found in air emissions from wastewater treatment plants.

Ozonation is handled by RENA Pro, a compact and modular system that produces pure ozone from oxygen without generating harmful byproducts such as NO_x or nitric acid. The ozone effectively breaks down odor molecules at the molecular level, targeting H_2S and other persistent organic pollutants. Following this step, the Nodora CAT unit provides catalytic treatment using a proprietary metal oxide media that further reduces H_2S . The porous structure of the media enables high mass transfer, ensuring efficient removal even at low residence times. The media also regenerates continuously upon contact with oxygen, enhancing both efficiency and service life.

To handle emissions from the sludge hall, a dedicated horizontal wet scrubber was installed in a separate scrubber building. This system is specifically designed to remove high concentrations of basic, odor-generating gases from sludge handling. To ensure precise system design, Mellifiq carried out on-site VOC measurements, which formed the basis for the sizing of the integrated AirMist system.

Nodora AirMist is available in three standardized series, each with individual configurations for nozzle density, allowing it to be tailored to the required airflow and pollution level.



Evaluation

Since commissioning in 2024 and 2025, Vansbro wastewater treatment plant has not experienced any odor issues—neither internally nor externally. The implemented solution has significantly improved air quality and working conditions for staff, while also reducing the overall environmental impact of the facility.

Thanks to energy-efficient technologies and with Mellifiq serving as a full-scope supplier—from design to commissioning—odors can no longer be detected in the ambient environment of the wastewater treatment plant and Vansbro now stands as a modern, future-proof example of sustainable wastewater treatment.



Ozonotech RENA Pro B-series is suitable for moderate to high treatment demands, typically for airflows of up to 3,000–5,000 Nm³/h. Mellifiq's delivery also included a Nodora CAT filter module containing catalytic material; this solution was installed and commissioned alongside the RENA Pro system.

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 Ozonetech, 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

