

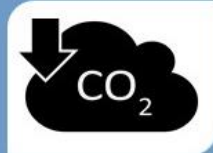
# ROLAPAC™

## Patented floating layer remover

The solution for effective removal of grease, oil, and organic matter in a lift station



Cost saving



Reduce CO2 emissions



High biogas yields



Proven technology

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Urban areas are increasingly faced with the formation of floating layers in sewage pumping stations. This floating layer consists of fats, oils and greases (FOG), wipes and other items that do not belong in the sewer. These 'floating layers' are costly to remove and removal process is an unsustainable practice. In addition, the floating layer increasingly puts pressure on the sewer infrastructure during periods of heavy rainfall. This is something we are increasingly experiencing due to climate change. The ROLAPAC solution prevents the formation of a floating layer and which therefore reduces cleaning necessity. This in turn reduces cleaning costs, improves the sewer infrastructure and reduces CO<sub>2</sub> emissions.

For the past several years, the Scheveningen sewage pumping station, situated in a residential area on the Haringkade in The Hague (NL), has been responsible for waste water drainage into the Scheveningen district. The installation, built in 2015, can pump out more than 28,000 liters of water per minute through two pump installations with suction nozzles at the bottom of the pump cellar.

The Delfland Water Board, together with the Municipality of The Hague has improved the collection and transport of waste

water in the region through an extensive program. In recent years, several of new buildings have been constructed in the region and in combination with the increase in heavy rainfall, an expansion of the sewer system was a precondition for being able to pump the waste water in the future.

The Scheveningen sewage pumping station is managed by Delfluent Services, a subsidiary of water company Evides, who value sustainability and the environment. Soon after the Scheveningen sewage pumping station was put into operation, the management of

the pump cellar proved to be a major challenge.

### *The Rolapac results in 90% CO<sub>2</sub> reduction*

The sewage pumping station regularly clogged due to



**Lift station in The Hague during maintenance**

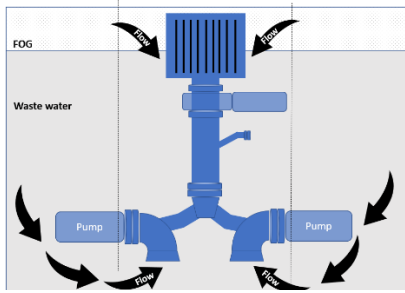


The ROLAPAC Floating Layer Remover is a patented product of ROLAPAC.

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**ROLAPAC principle**

to rubbish in the sewer. Think of wet wipes, dish cloths, deep-frying fat, sanitary towels and condoms. These fats, oils and grease (FOG) and cake together in such a way that a 'floating fat layer' is formed on the waste water that flows into the sewage pumping station.

#### *Heavy rainfall puts extra pressure on our sewer infrastructure*

This pollution causes the pumps to become so polluted preventing it to pump the waste water. If this happens, the risk of overflow into surface water from sewage water is a major risk. This is harmful to the surface water because the oxygen content in the water drops causing environmental harm, like for example, fish mortality. Climate change also shows that more and more pressure is being exerted on the sewage system. This is why a cleaning is regularly carried out, however, is an expensive and



**ROLAPAC - schematic**

technically intensive process. This

sewer cleaning is done by means of various, often diesel-driven, suction vehicles, which is a disturbance to its surroundings, especially considering that sewage pumping stations are often located in the residential areas.

*Lift stations are often located in the middle of residential areas.*

During a maintenance stop, the sewage pumping station is professionally cleaned for several working days. This work can only be carried out in dry periods because the water has to be stored in the sewage systems and this capacity is limited. Rainfall during a planned maintenance shutdown regularly causes maintenance activities to be rescheduled causing additional administration (permit applications and alignment of various stakeholders). For a maintenance stop, permission will always have to be given by the municipality because they are ultimately responsible for the sewer system. Several tens of tons of waste may be removed during cleaning. This waste is transported by suction trucks to waste water treatment plants; all in all, a CO<sup>2</sup> intensive job. Overall, the cleaning process, is a time-consuming, non-sustainable and very expensive process that often has to be repeated several times a year.

#### **Patented ROLAPAC Floating Layer Remover**

By installing the ROLAPAC solution, wastewater is no longer only extracted via the low-mounted suction nozzles, but also via an extra opening at the top of the reception cellar. The ROLAPAC



**Old situation and new situation with ROLAPAC**



transports the FOG and rubbish in the sewer preventing to clog together. With this solution the number of maintenance stops for cleaning is reduced significantly. "One annual check can suffice", says Mr. Rob Spaans, Director at ROLAPAC. "It also turned out that the application of this innovation has made the pumps jam a thing of the past".

#### **Principle of the ROLAPAC**

In the old situation, the wastewater is sucked away through the suction nozzles towards the wastewater treatment plant. Because the



**Lift station – pump cellar**



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suction nozzles are placed at the bottom of the pump cellar, the floating FOG layer at the top remains present. Over time, this floating layer becomes thicker and thicker where it can even reach the suction nozzles. This is the point at which a maintenance stop should be scheduled.

The modular ROLAPAC consists of new suction nozzles with a connection to the central discharge pipe. A custom-made basket has been placed on top of the central discharge pipe through which the waste water with floating layer dirt can be sucked away. The basket and central tube are split via a specially modified pneumatic valve. The valve is integrated in the central

control and signalling system of the sewage pumping station. This PLC controlled installation makes more than 120 switches per day so that no air can reach the pumps. The central pipe is fitted with a flushing water connection for the pumps so that any grease left behind in the pipe is flushed through. The innovation is made of high-quality stainless steel and can be installed in 1 working day.

#### **Proven technology**

In summary, the innovative ROLAPAC Floating Layer Remover has already proven itself at partner Delfluent Services and has led to several advantages: significant savings are made on the



#### **Independent of weather conditions**

management costs (especially cleaning costs) of the sewage pumping station, the solution contributes to the sustainability label; the removal of the waste can be done by fewer vehicle movements and therefore lower CO2 emissions. Because more fats are transported to the wastewater treatment plant, which can be equipped with a biogas plant, the production and yield of biogas is higher. There is also less nuisance for local residents and Delfluent is less dependent on the weather conditions, which was previously a major challenge in planning maintenance stop.

“We are working on follow-up orders in The Hague region, but we are also ready to introduce this solution to other municipalities and water boards,” concludes Mr. Rob Spaans.

If you want to get in contact with a customer of ROLAPAC, please contact us.

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