

Object report

Flooding problems solved without a fuss

Water regulation restored quickly with the help of a Wilo mobile pumping station

Unexpectedly heavy precipitation in early 2011/ Water levels in Salzland district temporarily out of control / Water level restored thanks to action by Staßfurt Soda Works / Wilo pumping station deployed / Unbureaucratic approach of all parties involved enables quick solution /

Staßfurt / Dortmund. Gale-force winds, hailstorms, torrential rain – the effects of global climate change are becoming ever more visible in Germany. In the Salzland district in Saxony-Anhalt, heavy rain in early 2011 led to an increase of up to two metres in the groundwater level. The residents of the area near the soda works, which is responsible for regulating the area's water level, as well as the region's aquatic ecology, were acutely threatened by floods. With the help of a floating pumping station fitted with drainage pumps made by the Dortmund-based pump expert WILO SE, the water was quickly brought back to its proper level. The project is made even more remarkable by the fact that it was implemented in a short time period of only two days. This was made possible by the considerate and unbureaucratic approach of all parties involved, including the agency responsible for approving the use of the new pumping station.

With an annual output of around 430,000 tonnes, Staßfurt Soda Works GmbH & Co. KG (Saxony-Anhalt) is one of Germany's largest manufacturers and refiners of sodium carbonate. The company mines the raw materials from the area around the production site. The process and cooling water required during the production of soda is taken from surface waters in the area sur-

rounding the soda works. After being used and treated, the water is returned to where it came from. This level of water usage has a significant effect on the water level of the surrounding surface waters. For this reason, the company is responsible for water control in the area surrounding its production facility. The soda works is responsible, among other things, for maintaining the water level in a secondary treatment pond of a tailing facility at 60 m above mean sea level (MSL). To do this, two recirculating pumps with an output of approx. 1,000 m³ pump water from the secondary treatment pond into the Bode river, a tributary of the Saale river, six kilometres away.

The unexpectedly heavy rainfall in early 2011 led to increased levels of groundwater inflow into the secondary treatment pond, as well as into the Kamplake, a lake in the nearby village of Unseburg. As a result, the existing pumping facilities at the soda works in Staßfurt were overwhelmed, and were unable to regulate the water level in the tailing facility and its secondary treatment pond. Neighbouring land soon began to flood. The situation was dramatic, both for the soda works and its neighbours as well as for the region's aquatic ecology.

In order to reduce the water level as quickly as possible, the company urgently sought an economical solution which could be implemented in as short a time as possible. The solution was intended not only to remedy the existing problem, but also to make it possible to keep the situation under control in the event of it happening again in the future. The solution was to deploy an additional pumping station at the Kamplake. This step promised to reduce the level of groundwater flow into the secondary treatment pond, and to bring its water level back under control. The Staßfurt Soda Works commissioned Wilo, the pump experts, with the implementation of the project.

The manufacturer immediately delivered two drainage pumps from the "Wilo EMU KS" series. These were available immedi-

ately, a factor which was hugely important in ensuring that the urgent project could be completed quickly. Both heavy-duty monobloc units with submersible motors are designed to be pressure-resistant, and have insulated internal active cooling systems. They are suitable for permanent operation at full load while continuously submerged. This was an important factor in selecting suitable equipment, because the pumps at the Kamplake need to run continuously in the event of increased water inflow. The pumps were installed in a mesh pallet box, fitted with a floating device and anchored near the shore of the Kamplake.

In permanent operation, both pumps pump up to 7,200 m³ of water per day out of the lake through pipes into the Bode river. This allows the water level of the lake to be reduced by around one centimetre per day. Because more instances of torrential rain and increased water flow are foreseen for the future, the pumping station will remain in long-term operation. This will help to prevent floods and the environmental damage which they cause.

Further information:

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About WILO SE:

WILO SE with headquarters in Dortmund, Germany, is one of the leading manufacturers of pumps and pump systems for heating, cooling and air-conditioning technology, for water supply and sewage and drainage. The company is represented by more than 60 subsidiaries all over the world and employs more than 6,200 people worldwide. In 2010 turnover amounted to 1.021,4 million Euros.

Captions:

01_img_wilo_soda_works_aerial_image

The Staßfurt soda works is one of Germany's largest producers of sodium carbonate (soda).

02_img_wilo_assembly_pump_station

The floating pumping station near the shore of the Kamplake is fitted with two "Wilo EMU KS" series drainage pumps. The pumping station regulates the water level and reduces the level of groundwater flow into the neighbouring secondary treatment pond.

03_img_wilo_running_pump_station

As they are installed within a mesh pallet box with a floating device, the pumps have no contact with the bottom of the lake and do not affect its aquatic ecology.

Pictures: WILO SE