

RIVER BANK OVERPUMPING

THE BACKGROUND

SEVERN TRENT Water's Little Eaton Water Treatment Works is a vital facility that helps provide safe drinking water to Derby and the surrounding area. The river intake at Little Eaton has several large pumps which supply water from the River Derwent to the treatment works.

NMCN was commissioned to replace the mechanical screens, which usually prevent debris, from the river entering these pumps. To enable the removal of the existing screens while maintaining an uninterrupted water supply, Selwood provided overpumping from the river to the rising main pipeline that feeds the treatment works.



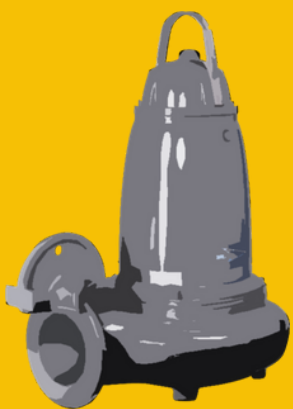
THE CHALLENGE

The only available space to position the temporary pumps was on the riverbed itself. Once in position, Selwood's team needed to connect them to the existing rising main in a lower level of the main pump building. The existing **600MM PIPEWORK** had to be used, so the task at hand was to install a pipe large enough to meet the required flow, but small enough to fit through the door and connect to the existing pipework.



THE SOLUTION

The Sulzer J 604 ND 10" **SUBMERSIBLE PUMP** was chosen for the job because of its ability to provide the required 231 litres per second flow. Five pumps were used – four duty and one on standby – to achieve the total flows required. The pumps were installed on the riverbed with **FISH BASKET STRAINERS** on to prevent fish and other items entering the works. They were then attached to 12" outlet pipework "risers". Once on solid ground this pipework was manifolded first into 500mm pipework, and then through the doorway into the pump building and connected to 600mm pipework for a distance of 15m to reduce any friction losses. This larger pipework was attached to the existing rising main via a non-return valve on the lower level within the pump room.



THE DELIVERY

The riverbed was uneven, with large rocks and logs on the bottom, which meant there was an element of trial and error in the placing of the pumps. As the water level was high during the site survey and scoping work, the initial presumed distance of three metres from the river bank was changed to six metres to ensure the pumps sat securely.

A 30-ton crane was used to install the units and for any lifting outside the building. An existing gantry crane was used for internal lifting. Installation took **FOUR DAYS** to complete with an additional day spent commissioning the project alongside Severn Trent.



THE RESULT

NMCN were able to complete the work replacing the screens **ON SCHEDULE** while the Selwood pumps ensured an uninterrupted supply to the Little Eaton water works.

