



Bedford Pumps solves pumping problems for Netheridge & Black Rock

Netheridge WWTW is Severn Trent Water's main sewage treatment works for the city of Gloucester. It is served by over 30 outstations and treats waste from a population of approximately 200,000.

The inlet pumping station at Netheridge currently incorporates DWF pumps, settled storm pumps and unsettled storm pumps installed by Allen Gwynnes over 30 years ago. Due to an extensive regeneration programme for Gloucester resulting in an expanding population, the flows into the station have since become too high for the aging pumps and their consequent failure has led to major floods.

Bedford Pumps Ltd, the company that evolved from the demise of Allen Gwynnes, has developed an engineered solution to overhaul the pumps installed by their predecessor, without the need to make any changes to the civil structure.

Complications within the structure of the station include a difficult sump, low NSPHA and restricted access. To replace the pumps with new volute pumpsets would therefore result in prohibitive costs for both the equipment and in the corresponding modifications to the site. To overcome this problem, Bedford Pumps have instead designed and manufactured new rotating elements and submersible motors for the four pumps which will be fitted into the existing pump casings.

The overhauled units will each operate at a duty of 1,515 l/s at 9.63m head. The pumpsets will be powered by 260kW motors at a speed of 590rpm. Each will be supplied with a Pump Condition Monitor.

Bedford Pumps will retrofit the new submersible volute type rotating element to the original pump casing at their specialist facilities in Bedford. The pumps will then be witness tested in Bedford Pumps' dedicated test bay, then re-installed and commissioned at the Netheridge site by Bedford Pumps' assembly team.

Bedford Pumps were delighted to work with Civil Engineers, Costain Ltd, to solve the problems occurring at Severn Trent's Netheridge site.

Bedford Pumps have just upgraded the Black Rock Pumping Station in Weston-super-Mare in a similar fashion. The three rotating assemblies supplied comprise of units containing a 470kW motor with integral cooling jacket, pump shafts, seals and casing top cover to suit the existing volute. The overhauled pumps will ensure that Black Rock P.S. will achieve a duty of 2,250 l/s at 16m head.



Fig 1. Existing Allen Gwynne pump installed at Netheridge



Fig 2. Bedford Pumps new rotating element utilises the existing pump casing



Fig 3. Installed at Black Rock P.S.