Retroflo

ELECTRICAL • MECHANICAL • INSTRUMENTATION • CONTROL • AUTOMATION

CASE STUDY

CLIENT

Northumbrian Water Group

PROJECT

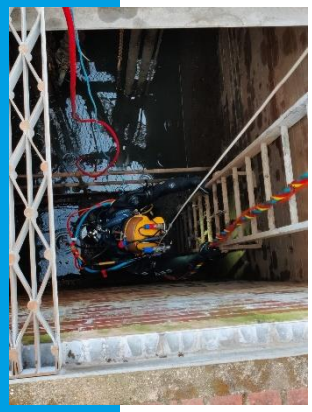
Sewage Pumping Station (SPS) Vulcan Street

PROJECT SUMMARY

Project progressed significantly from the initial scope which was to replace the risers, upon further investigation we discovered we needed to replace the flap vale on the river, replace the stools, pumps, risers, NRV's and isolation valves

CONSTRUCTION DATE

March 2021



VULCAN STREET (SPS)

The original enquiry was a request for Retroflo to attempt to stop the flow from entering the wet well to enable an inspection of the riser pipes. First attempts failed because the River Tees was entering the station through the overflow at high tide, making it impossible to reduce water levels with temporary pumps! Our Client instructed us to employ divers to enter the river tees to inspect the overflow flap valve, which was found laid in the river with failed hinge lugs. Northumbrian Water Group then instructed us to use the divers to install an inflatable stopper to the wet well inlet. This allowed us to pump the wet well down and over-pump the station from the combined sewer overflow. With the wet well successfully isolated from the system we were able to remove the riser pipes which were completely corroded and had snapped. New pipework was procured and on site within four days. We also installed a Penstock on the pumping station inlet c/w with spindle, so in future if NWG needs to isolate the well they can simply close the penstock.

On closer inspection the pump pedestals were found to be corroded beyond use and were no longer fixed to the base of the wet well. After a review of the situation NWG decided the best way forward was to install new pumps and pedestals so our team removed the original, unusable ones in preparation. We then installed temporary electric submersible pumps to continue to over-pump the station while awaiting delivery of new pumps. When one of the station isolation valves failed during over-pumping, NWG also decided to install new isolation valves and NRVs and take the opportunity to install a permanent over-pumping connection on the rising main for future use.

Retroflo were instructed by NWG to engage the diving company to refit the existing overflow flap valve using a crane on the riverbanks and to fabricate new hinges to do so. This activity was carried out very successfully and the flap valve is now operable 4 years after it failed.

With the flap valve operable, Retroflo were able to drain the rising main and install the new pedestals, riser pipes, valves and pumps and complete the refurbishment works to make the Pumping Station operate as it should for the first time in 4 years.

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