Church Wilne WTW

working in close collaboration with Severn Trent Water and the supply chain ensured success at Church Wilne

by Daniel Fielden, Bill Hinchliffe and Vicky Gillibrand

Severn Trent Water's Church Wilne Water Treatment Works supplies water to a population of approximately 600,000 customers in the East Midlands. The works is located in Long Eaton, east of the City of Derby, and adjacent to the M1. Severn Trent Water approached MWH Treatment to complete an emergency project to eliminate potential risks to the water quality at Church Wilne. The scope of the work, to be completed in approximately four months, included; (i) the replacement of media and nozzles within twelve rapid gravity filters, (ii) undertaking structural integrity surveys along with any necessary remedial works, and (iii) deep cleaning and flushing throughout, including pipework, laterals and filter walls.

SAFER, BETTER, FASTER! New media installation: Media is emptied from the tipper truck into a hopper, pump and pipework system, allowing media to be pumped directly into the filters negating the need for bulk bags, lifting operations and manual handling, dramatically reducing programme time. Courtesy of MWH Treatment

Solution development

Developing a solution within such a short timescale had the potential to present some challenges, and therefore, to keep the work on track, the first three filters were awarded, and work commenced immediately using a traditional method of extracting/installing media using motive water.

Although this was an acceptable solution, the development team continued to look for efficiencies. While work was underway on the first three filters, a review was undertaken. It was found that within the 'One Supply Chain' a similar project had already been completed using a different method, and it was identified that this method was not only innovative in the way the media extraction process and installation was handled, but was also competitive in price.

Innovative media handling

Utilising the knowledge sharing capability of the 'One Supply Chain' was a successful approach. The adoption of the alternative method significantly reduced programme time and generated cost savings.

The traditional method of media extraction and installation requires motive water and a series of stilling tanks. The alternative approach, which was adopted at Church Wilne, enables spent media to be pumped (dry) direct from the filters into a road tanker without the requirement for carrier water and stilling tanks. The same process enables new media to be pumped directly from a tipper truck into the filter via a simple hopper, pump and pipework system.

Benefits include:

- Cost Savings.
- Programme Savings.
- Less impact on process and service delivery.
- Reduction in double handling and lifting operations.
- Reduced footprint area for equipment and plant.
- Decrease in the amount of traffic movements on site.

Even though this innovative approach, which had multiple benefits, was taken, there were constraints to the solution development that included:

- No programme allowance for up-front pricing.
- Meeting water demands at all times (at least nine filters had to be in service at any given time).
- Water quality.

Washing the under floor laterals *Courtesy of MWH Treatment*

New media installation *Courtesy of MWH Treatment*

Project delivery

Project delivery was undertaken successfully, and although there were further variables that were encountered, such as the weather, when freezing conditions hampered media removal, and water demands, which prevented Severn Trent Water Service Delivery team releasing the final two filters, the project was completed with greater efficiencies and cost savings than was thought possible, and this was primarily due to the collaboration throughout the 'One Supply Chain'.

The final solution included the following:

- Use of One Supply Chain, sharing best practice and knowledge.
- Delivering best value via:
  - < Use of cost out planning methodology.
  - < Cost avoidance.
  - < Disposal costs of media reduced.
  - < No concrete repairs necessary.
  - < Batching of filters provided programme savings.
- Improved specification of nozzles. The nozzles provide improved performance, i.e. no sand loss.

Summary

In summary the project was a great success, and has shown that working in collaboration with the supply chain and seeking innovative techniques has numerous potential benefits including cost and time efficiencies.

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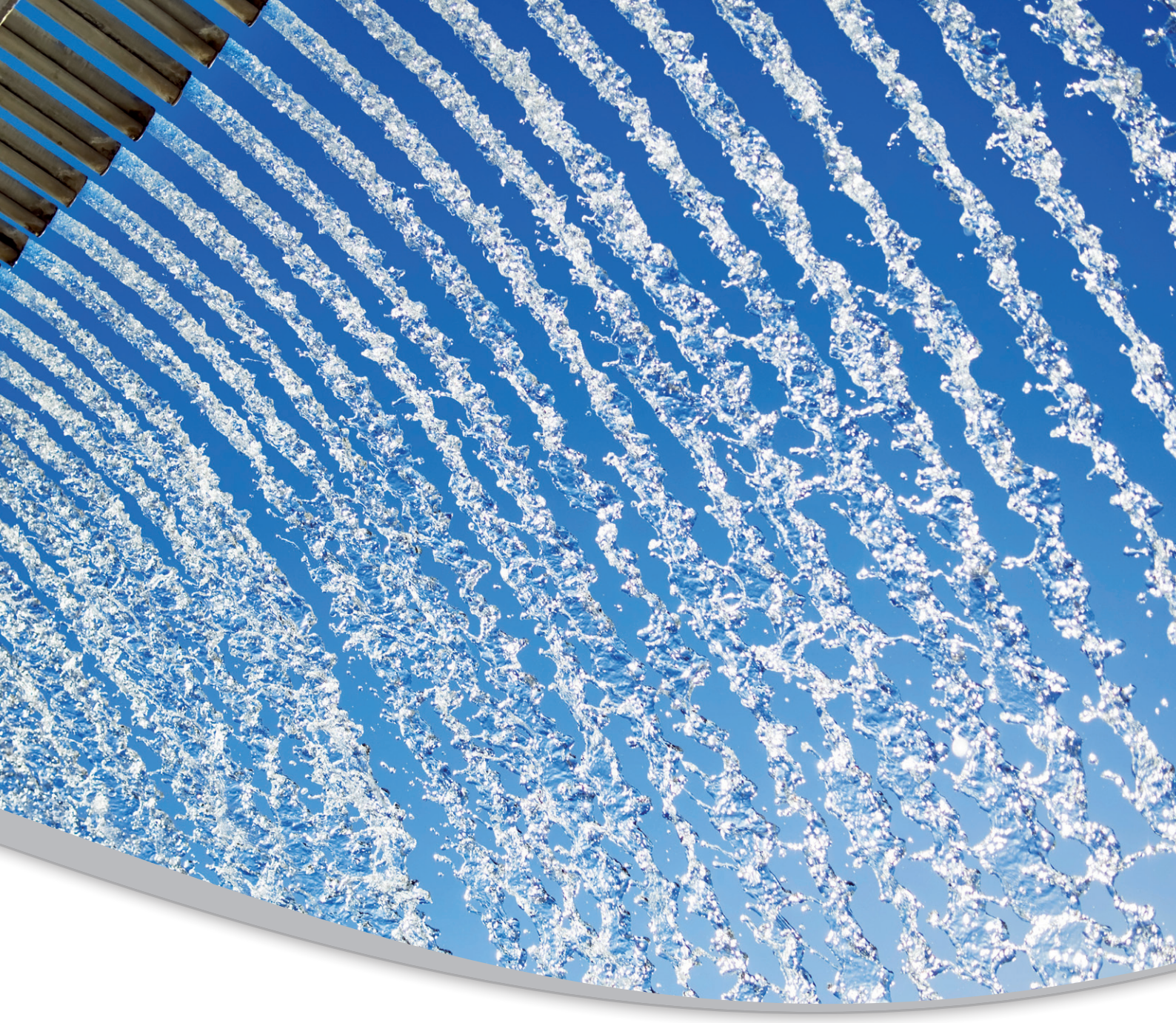

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