



CASE STUDY

CLIENT: Wessex Water

Site: Wells STW

Date: April 2012

Background

The Wells inlet works had been experiencing significant operational problems due to a high number of wash press breakdowns. This was resulting in excessive downtime and consistently high maintenance costs. A further complication existed in the high-energy load that was required to drive the number of motors servicing these units.

With the existing launder channel fully operation it was necessary to ensure that any solution could be retrofitted. M&N were approached by Wessex Water to investigate the installation of a temporary Kuhn Wash Press.

Challenges

- Limited access for maintenance and screenings removal via skip
- Final Wash Press selection needed to achieve existing capacity and manage increases when required
- Reduction of launder flow
- Operational downtime needed to be minimised during installation
- New applications needed to fit seamlessly into the existing Wells STW infrastructure

Implementation

Utilising our in-house 3D design software, M&N tested various options against the specific dimensions and operational infrastructure of the Wells STW plant. This included the modification of the discharge chute design to suit the Wash Press application and design of a bespoke inlet hopper to accommodate the launder channel layout.

The virtual modelling highlighted a number of issues that would need to be addressed to ensure the new units could maintain and exceed operational requirements, namely:

- Energy costs savings could be made by limiting the existing launder flow

- A hardened shaft would need to feature within the new unit to deal with the significant grit loads, ensuring the best whole life costs for Wessex Water
- To suit the existing drainage infrastructure M&N would need to modify the Wash Press drain pan
- To accommodate the discharge point for the skip, M&N would need to design additional bends in the units discharge chute

As sole representatives for Kuhn GmbH in the UK, M&N works closely with their German design team. The findings from our 3D modelling were forwarded to the Kuhn offices for their consideration and approval that such practicalities could be implemented when utilising one of their Wash Presses.

Upon approval M&N forwarded plans to Wessex Water and installation was carried out in accordance with the works operational requirements and Kuhn GmbH's commissioning schedule. This included Control Panel set-up, over current checks, level controller checks and alarms, alongside the manufacturer's strict control philosophy.

In keeping with the need to meet increases in flow rates where appropriate M&N undertook shock loading of the Wash Press. Allowing screening levels to build up, the Kuhn Wash Press was tested to meet actual storm conditions, successfully establishing actual working conditions rather than theoretical ones.



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