



HIGH SPEED 2

RIVER LEAM

**Temporary groundwater control for
the proposed River Leam viaduct to
reduce artesian water pressure**

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Temporary wellpoint dewatering system with pumping tests for groundwater control



Objective

The River Leam viaduct is a 120m span structure with 2no abutments and 4no piers to take the HS2 high speed train line over the River Leam. Before piling works could commence several boreholes needed to be drilled and then pumped to reduce the artesian water pressure that was found when carrying out ground investigation works.



Scope of Works

The dewatering design included 12 boreholes to be drilled with 10 wells pumped (on both sides of the river) and 2 wells used to monitor groundwater levels.

The steady state dewatering pumping rate gave a nominal capacity of 3 to 10 l/s to reduce the artesian groundwater pressure and allow construction to commence.

Pumping tests were conducted at three locations to provide field evidence on the hydraulic properties of the mass aquifer and structural controls on groundwater flow.



Solution

To mitigate the potential installation and commissioning difficulties associated with the presence of artesian groundwater pressure, the dewatering well design included a conductor casing. This allows artesian pressures to be capped or controlled if necessary.

Services	Wellpoint Dewatering Pumping tests
Location	Warwickshire
Industry	Civil Engineering Transport