



# Howley Energy & Water Limited

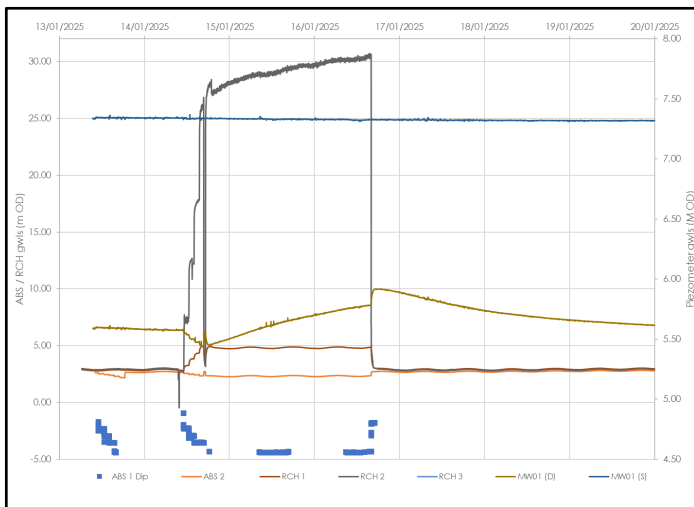
## CASE STUDY – UNIVERSITY HOSPITAL OF HARTLEPOOL 2023 - 2025

In 2023, Howley Energy & Water Ltd were appointed by Veolia Ltd to undertake an initial feasibility assessment towards the development of a 1.2MW open loop borehole system at the University Hospital of Hartlepool.

Howley completed a hydrogeological feasibility investigation which identified that the 85m deep Magnesian Limestone was likely to be able to provide the yields required to service the heating demand for the hospital buildings.

Since the demand was for heating only ( no cooling ) aquifer thermal modelling showed that abstraction and recharge boreholes were to be distanced some 400m from each other at the full boundary extent to ensure adequate distancing to achieve a long term thermally sustainable system.

In 2024, drilling was initiated, and two abstraction boreholes and three recharge boreholes were installed and pump tested at a combined flow rate of 43 l/sec. The flow rate was higher as the system was to run at a reduced  $\Delta T$  of 5°C to keep recharge temperatures within a reasonable point above freezing in the longer term.



All on-site drilling and test pumping operations were monitored and data gathered to allow stage 2 thermal modelling to be undertaken.

The system is expected to be commissioned in late 2025 with licences expected in March 2026.

<b>Client</b>	North Tees Trust / Veolia Ltd
<b>Location</b>	Hartlepool
<b>Peak Heating kW</b>	1200
<b>Peak Cooling kW</b>	0
<b>Groundwater Flow Rate</b>	43l/sec
<b>Borehole configuration</b>	2 ABS – 3 RCH
<b>Borehole distance</b>	400m
<b>Year Installed</b>	2024 - 25
<b>Reference</b>	Graham Dereham <a href="mailto:graham.dereham@veolia.com">graham.dereham@veolia.com</a>