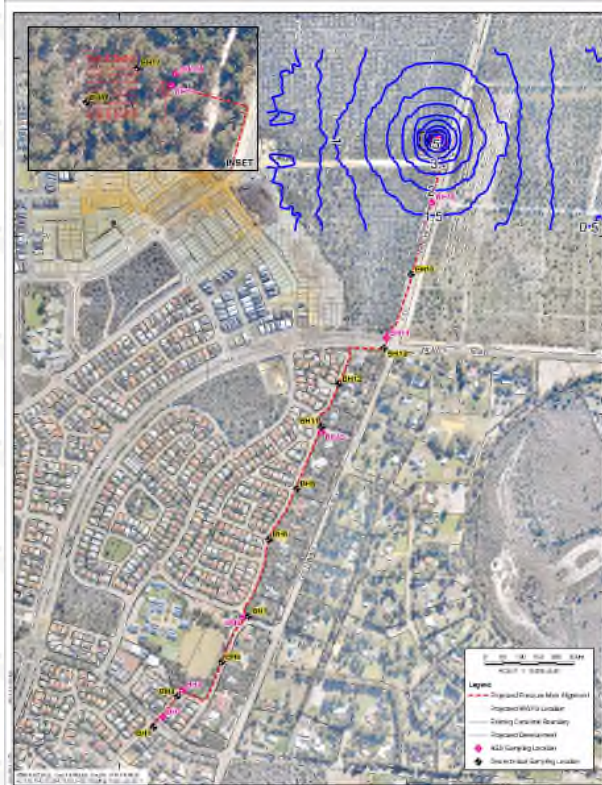




PROJECTS
HYDROGEOLOGY

Dewatering Model, Construction Works for a Waste Water Pump Station, Banksia Grove, Perth



Modelling was performed using Visual MODFLOW software and the PEST inversion model. The works were simulated with the drain and pumping well packages from Visual MODFLOW. Optimal results were achieved using a rectangular perimeter drain around the excavation quadrant to model the required drawdown.

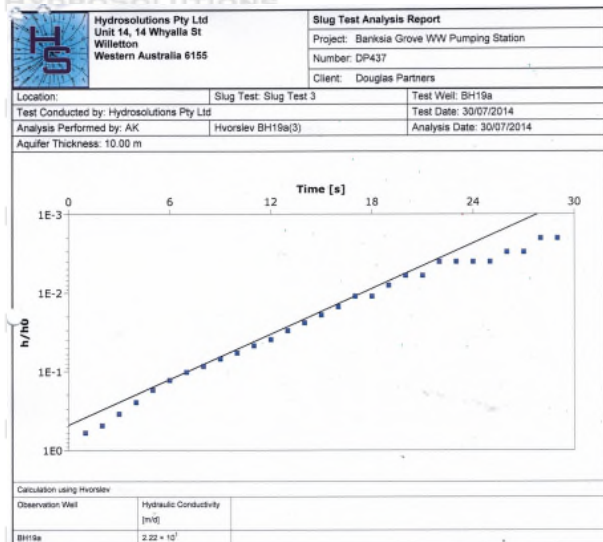
Weekly drawdown estimates and flow rate budgets were output from the modelling for the client. Multiple estimates for pumping rates in order to achieve initial drawdown in 3 to 7 days of pumping were also provided.

Construction works surrounding a waste water pump station required dewatering of a 30 metre by 30 metre quadrant. A sustained drawdown of over 5 metres was required for up to 6 weeks of site excavation.

A pumping schedule was modelled to achieve the required drawdown and provide a weekly flow rate estimate during works.

Hydraulic conductivity was determined from analysis of falling head tests, and assessment of particle size distribution data. A radius of influence was calculated using the methods of Sichart, Jacob, and Bear.

Construction of an initial groundwater table was achieved by normalizing the regional watertable with local static water levels.



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