

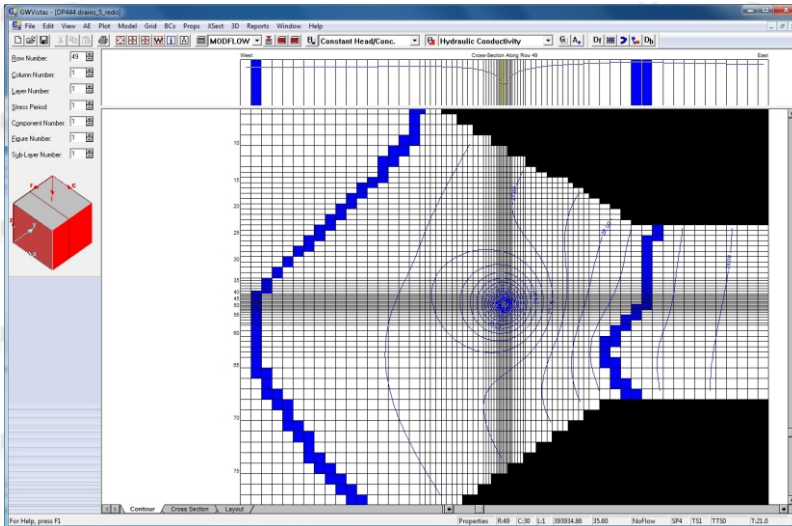


## PROJECTS

## HYDROGEOLOGY

Hydro41

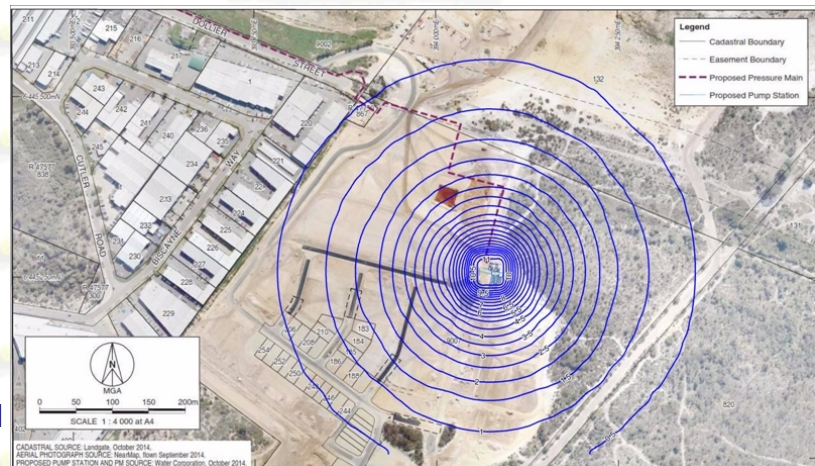
### Dewatering Model, Construction Works for a Waste Water Pump Station, Banjup, Perth



Construction works surrounding a waste water pump station required dewatering of a 40 metre by 40 metre quadrant. A substantial sustained drawdown of over 11 metres was required for up to 4 weeks of site excavation. A pumping schedule was modelled to achieve the required dewatering and provide a weekly flow rate estimate during works.

Hydraulic conductivity was estimated from previous analyses of falling head tests in the area, 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.

Modelling was performed using Groundwater Vistas software running the MODFLOW groundwater model, and the PEST inversion model. The works were simulated with the drain package of MODFLOW. Optimal results were achieved using a rectangular perimeter drain around the excavation quadrant to model the required drawdown.



Weekly drawdown estimates were prepared using GIS spatial drafting software and flow rate budgets were output from the modelling for the client, daily for the initial week, then weekly after that.

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