

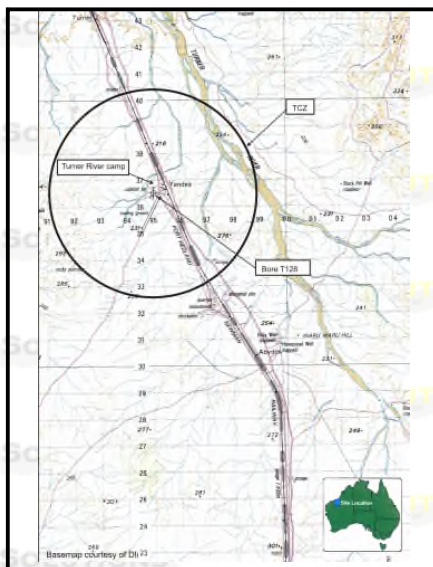
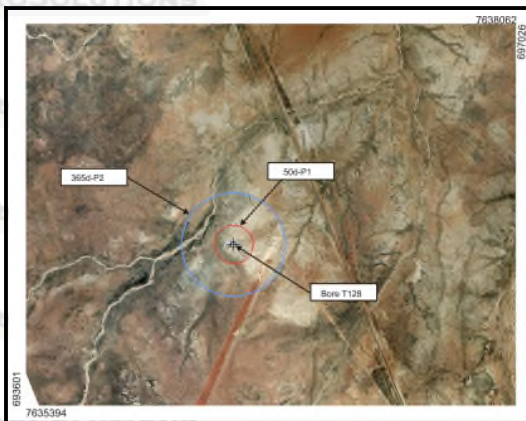


## PROJECTS

## HYDROGEOLOGY



Part map courtesy of DoLA



Part map courtesy of GSWA

HydroSolutions Hydro 27

### BHP BILLITON IRON ORE PTY LTD

Initial Source Protection Plans (SPZs) for four potable water sources, Pilbara region, Western Australia

Source protection plans consistent with Department of Water and Water Corporation guidelines, were developed for the potable water abstraction bores supplying the following mining rail camp sites:

- Quarry 8
- Turner River camp
- Cowra camp
- High Rise

Conceptual hydrogeological models have been developed for each site based on a review of geological, hydrogeological & meteorological data.

SPZs have been developed, based on groundwater time-of-travel zones estimated using analytical expressions, represented as circular "recharge" zone.

- Time of travel zones were defined including:
- 50day-SPZ Source Protection Area
  - 365day-SPZ equivalent to a wellhead protection area priority 2 area
  - Total catchment area TCZ

Initial source protection plans were developed to identify sanitary protection zones around the wellhead for bacterial die-off, and landuses which were incompatible with source protection (e.g. waste disposal, fuel storage etc.)

Recommendations were made to refine the analytical models by obtaining more specific aquifer's data, to enable numerical modelling to optimise the SPZs.

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