



## PROJECTS

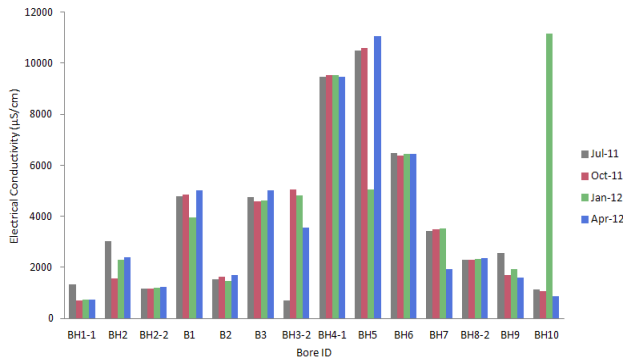
## HYDROGEOLOGY

HydroSolutions

HydroSol Hydro34

### Bauxite Alumina Joint Venture

### Annual Groundwater Monitoring at a Proposed Mine Site, Bindoon, WA.



11 bores were drilled and 3 existing bores utilised for monitoring of 4 proposed ore bodies.

The bores were sampled over the course of 1 year during 4 groundwater monitoring events.

The bores were constructed under supervision by HydroSolutions staff & bore logs produced.

Results from groundwater sampling provided a baseline of background hydrochemistry before mining operations begin. A full suite of analytes associated with the existing agricultural landuse & the proposed mining development was undertaken, including major ions, metals, nutrients, pesticides and hydrocarbons.

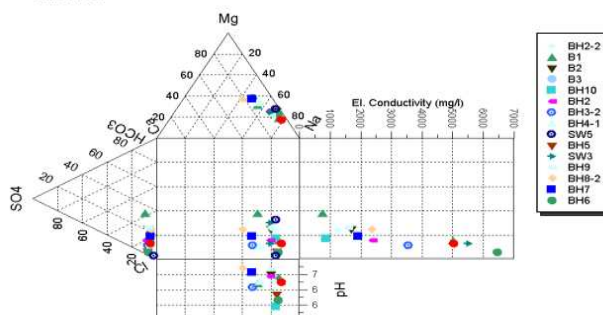
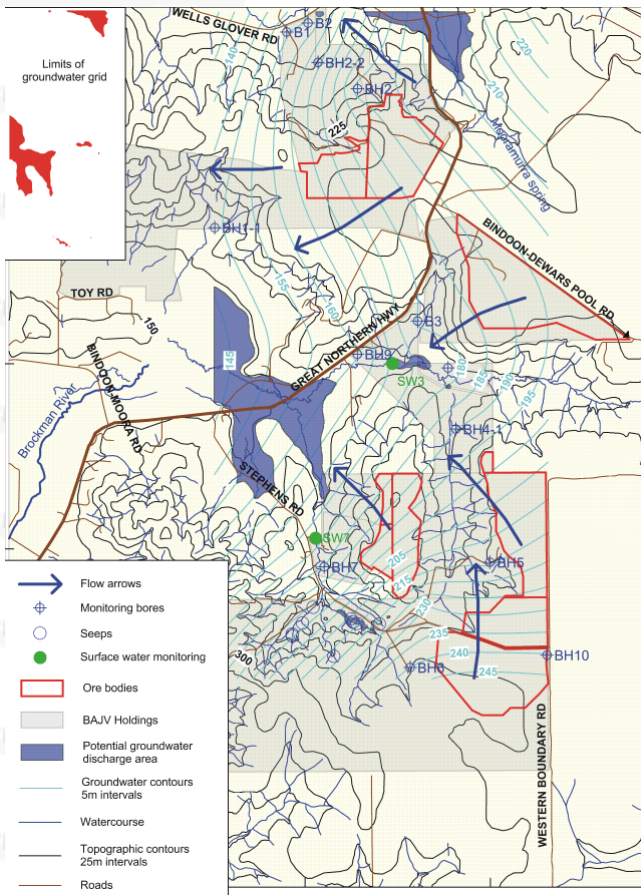
Groundwater flow directions and volumetric flow beneath each ore-body were estimated to provide a pre-ming benchmark.

Water level pressure transducers and a barometer with data loggers were used to continually record depth to water and allow adjustment for atmospheric pressure changes. This enabled comparisons to be made between water table elevation & rainfall recharge events.

Water level data allowed annual maximum groundwater levels to be determined. These combined with information on the proposed mine development defined the available freeboard to maintain minimum mining levels above highest estimated water table elevation.

Baseline soil salinity was determined through sampling and found to be non-saline.

Durov plots were used to show surface water and groundwater major ion chemistry. They showed similar results suggesting groundwater discharge is likely to be a major component of surface water flows in the area. This was also confirmed through baseflow separation estimates of surface water flow hydrographs.



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