Extensive mapping and geophysical surveys have confirmed that the highly productive Gunnedah Formation groundwater aquifer, which is the main water source for local farmers, does not exist within the Disturbance Boundary.

- The closest occurrence of this aquifer is 900 m from the north-eastern corner of the Eastern Mining Area and more than 1.3 km to the south of the Project Boundary.
- This buffer prevents the direct connection of water between the Gunnedah Formation aquifer and mining areas.

The groundwater model predicts that the volume of water removed from Zones 3, 7 and 8 of the Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003 combined due to mining depressurisation is 35.7 ML per annum on average.

- This is a negligible quantity of water being equivalent to about 25% of the average pumping rate of 142 ML per annum from a single licenced agricultural bore in the Upper Namoi Alluvium within 10 km from the Project Boundary.

Within 10 km of the Project Boundary, 35 bores are predicted to experience maximum groundwater level reductions of between 0.1 m and 1.4 m.

- Of these, four bores adjacent to the Southern Mining Area have a maximum predicted drawdown between 1.0 m and 1.4 m.
- These predicted groundwater level reductions are below the minimal harm criteria of 2 m as defined in the Aquifer Interference Policy.

Modelling indicates that the groundwater levels begin to recover after the Eastern Mining Area and Southern Mining Area are backfilled and eventually exceed pre-mining levels. This is due to a higher recharge rate on the overburden material than the pre-mining condition.

The predicted groundwater levels within the Western Mining Area final void will remain below the regional water table by approximately 1-2 m, indicating the pit lake void will act as a groundwater sink, not a source.

- The water level in the final void will therefore stabilise well below the crest of the open cut mining area, and overland spillage of water into the environment will not occur.

An independent Peer Review Groundwater Impact Assessment was undertaken by Heritage Computing

- The Peer Review concluded that the “groundwater model has been developed competently and is regarded as “fit for purpose”…”

The Namoi Water Study Model was considered throughout the development of the groundwater model for the Project.

The relevant water licences will be required to account for water intercepted as a result of the Project. Shenhua Watermark has secured part of these required licences and will purchase the remaining licences the operating water market.

The current groundwater monitoring network will continue to be implemented throughout the life of the Project along with the preparation of a Water Management Plan.

- Additional monitoring bores will be installed within the predicted zone of depressurisation to assess the extent and rate of depressurisation against model predictions.