



WHITEHAVEN COAL

## MAULES CREEK COAL PROJECT FACT SHEET

# GROUNDWATER

### KEY POINTS

- The groundwater modelling undertaken for the Maules Creek Coal Project utilised a fully unconstrained model and represents conservative groundwater impact predictions for the Maules Creek Coal Project (and neighbouring Projects). The model includes 50 m x 50 m cell sizes within the mining area.
- The groundwater model is a regional model that includes the cumulative effects of the other mines within the area. The model size is approximately 30 km by 40 km covering an area of approximately 1,190 km<sup>2</sup>.
- The Groundwater Impact Assessment concluded that the Maules Creek Coal Project will have no measurable impact on water levels within the Namoi River alluvial system.
- The impact on the Permian Bedrock aquifers is very low at approximately 1% of the total annual rainfall recharge.
- To ensure that the groundwater modelling was performed to appropriate standards, Whitehaven engaged a leading independent expert, Dr Noel Merrick, who peer reviewed and confirmed that the model was fit for purpose and that the assumptions used are conservative.
- The NSW Planning Assessment Commission also appointed an expert, Dr Colin Mackie, to complete a review of the groundwater modelling and assessment during a merit review of the Maules Creek Coal Project. This review confirmed the findings of the modelling *"to be consistent with expected outcomes"* and also provided a number of recommendations over monitoring and planning requirements for the closure of the mine which form requirements under the Project Approval conditions.

- A Groundwater Impact Assessment was undertaken by the industry recognised consultants Australasian Groundwater and Environmental Consultants (AGE Consultants) in accordance with relevant government procedures and policies.
- To ensure that the groundwater modelling was performed to appropriate standards, Whitehaven engaged a leading independent expert, Dr Noel Merrick (Heritage Computing), who peer reviewed and confirmed that the model was fit for purpose and that the assumptions were conservative.
- The modelling used a fully unconstrained model and represents the worst possible groundwater impacts from the Maules Creek Coal Project (and neighbouring Projects). The model includes 50 m x 50 m cell sizes within the mining area.
- The model is a regional model that includes the cumulative effects of the other mines within the area. The model size is 29.9 km by 39.8 km covering an area of approximately 1,190 km<sup>2</sup>.





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- The assessment concluded that the Maules Creek Coal Project will have no significant impact on water levels within the Namoi River alluvial system.
- The assessment identified three main aquifer systems within the vicinity of the Project Boundary:
  - The Namoi Valley alluvial aquifer system, including the alluvials associated with Maules Creek;
  - A thin veneer of weathered bedrock (regolith) near the ground surface; and
  - Permian bedrock aquifers.
- Flow rates from the Permian bedrock aquifers to the alluvial system are predicted to decline minimally, with the predicted impact on recharge to the alluvial aquifer at an average of 50 ML per annum (using the conservative unconstrained model).
- This is very low at approximately 1% of the total annual rainfall recharge simulated by the steady state model and as stated in the *Upper and Lower Namoi Groundwater Source Water Sharing Plan*.
- Whitehaven developed a revised groundwater model throughout the Government assessment process which considered transient natural variations to the groundwater regime across the region. This revised modelling provided similar results to original model and confirmed that the original model was conservative.
- Whitehaven has acquired and will continue to acquire appropriate licences to account for predicted impacts to the groundwater regime.
- The Maules Creek Coal Project is predicted to develop a zone of depressurisation around the mining area. The model predicts an average groundwater seepage rate from the Fractured and Porous Rock aquifers to the open cut pit of 550 ML/year with a peak of approximately 1,064 ML/year.
- No irrigation bores are predicted to be impacted.
- In the unlikely event that it is demonstrated that water levels in existing landholder bores decline as a consequence of the Maules Creek Coal Project, leading to an adverse impact on water supply, Whitehaven is committed to substituting the water supply in consultation with the landholder – potentially by deepening the bore or the construction of a new bore.
- Whitehaven is in the process of developing a leading practice water management system for implementation in consultation with Boggabri Coal Mine and Tarrawonga Coal Mine.
- Whitehaven will implement an appropriate monitoring network and continue to cooperatively monitor groundwater across the monitoring network in the region.

