

Submission of Objection to Ulan Mod 6

Mudgee District Environment Group (MDEG) objects to this project. To extend underground longwall panels to allow extraction of a further 25 million tonnes of thermal coal and extend the mine life by two years to 2035 would cause irreparable further damage to our climate, biodiversity, water, cultural heritage and landscape.

The following objections are provided for your consideration.

Climate Change

This proposal should be rejected on the basis of its Climate Change impacts alone. Australia is committed to reducing greenhouse gas emissions by 43% by 2030. If global emissions were to be reduced by 43% by 2030 there is a chance global warming could be limited to 1.5% (IPCC *Emissions Gap Report 2022 : Closing the Window*).

However, common sense would say a 43% reduction by 2030 is inadequate, for the following reasons:

- Australia has already experienced 1% of warming and the growing intensity of natural disasters (the 2019-20 Bushfires and the 2022 Floods) demonstrates that 1 degree of warming is highly dangerous
- 1 degree of warming has been enough to produce sea level rises that, if allowed to continue, will devastate Pacific islands, coastal communities globally, entire nations such as Bangladesh and the great river deltas that provide a good deal of the world's food
- Many of the world's poorer countries do not have the resources to pursue rapid transformation of their economies to renewable energy sources so richer countries such as Australia must achieve more than a 43% reduction

Australia needs to strive to reduce emissions by much more than 43% by 2030.

Most of the action needed to reduce greenhouse gas emissions will need to be taken by State governments. The Commonwealth government controls 2 areas of government policy that can be applied to reduce emissions – taxation policy and population policy. On the other hand State governments control mining, agriculture, forestry and land use, energy generation and distribution, and transportation.

Australia will not reduce its emissions by 43% or by the higher reduction really needed, unless State governments pursue reductions in everything they do.

If reductions in emissions are needed, it is completely illogical to contemplate approving coal mine extensions or new coal mines.

The proposed modification to Ulan, if allowed to proceed, would increase greenhouse gas emissions by 64.97Mt CO₂ -e. It would also potentially provide access to additional coal reserves via EL 7542.

The EIS states in many places that 'Glencore's focus remains on reducing its total emissions footprint, including Scope 3 emissions, which is critical to achieve the goals of the Paris Agreement'. Therefore the

proposal is at odds with the parent company's own objective, and the attempts to disguise the true consequences of the additional greenhouse gases are 'greenwashing'.

It would be more logical for Glencore to honour their commitment to reduce emissions by utilising the land for solar panels. The mine location is within the Central West Orana Renewable Energy Zone – hardly an appropriate location for an expanding coal mine.

Currently, the Ulan mine is projected to remain in operation until 2033. The State government needs to be focusing on developing plans to substantially reduce the life of this and all other coal mines in NSW. That is the urgent task at hand, not contemplating approving more coal extraction.

Biodiversity

If this proposal is approved 24.7 ha of woodland vegetation including 9.5 ha of Critically Endangered White Box – Yellow Box – Blakely's Red Gum Woodland would be lost.

Clearing Critically Endangered Ecological Communities should not be permitted. There is no adequate replacement or offset available. The consequence is a net loss of that vegetation community.

If this occurs, habitat for many threatened fauna and flora species will be impacted. For example: the critically endangered Regent Honeyeater and Swift Parrot; endangered Koala and Long-eared Pied Bat and numerous other threatened fauna species. This habitat is too valuable to be destroyed.

Water

This proposal is in a highly significant location at the lowest point of the Great Dividing Range. The groundwater flows are complex and may be unexpected, due to it straddling the range.

This proposal for additional underground mining will cause additional loss to the base flows of both East (Goulburn River) and West (Talbragar River) flowing rivers. The cumulative drawdown will impact for 3000 years. This is unacceptable and highly inequitable for future generations.

A major study has been undertaken with regard to the groundwater flows in this vicinity. Refer "*Changing land use in an uncertain climate; Impacts on surface water and groundwater in the Goulburn River, NSW*", Dr Julia Imrie: available at <http://hdl.handle.net/1885/172041>.

A summary of the findings (Appendix 1) states '*groundwater modelling used in the approval of the three mines in the upper Goulburn significantly underestimated the impact on groundwater system. Her research argues mine subsidence and groundwater depressurisation has altered the general hydraulic gradient or direction of groundwater flow away from the river towards a regional sump created by mining - intercepting fresh aquifers and baseflow.*

'The study investigates a groundwater dependent ecosystem in the upper reaches of the Goulburn River known as 'The Drip' gorge. This impressive feature and river reach has been classified by the National Trust as a significant heritage and conservation landscape. The Drip is fed by an extensive perennial spring that seeps from a multilayered sandstone cliff overhanging the Goulburn and has supported a range of water dependent plant species through major droughts over the last century. This research uses The Drip as a 'window into groundwater' for understanding the relationship between the groundwater system and base flows in the river. The report shows that future longwall mining near the river has the potential to significantly lower the regional water table on both sides of the river by up to 20 metres affecting the springs, seeps and groundwater that feed this ecosystem.'

Within the EIS The Drip is described as a perched aquifer which it clearly is not. It is incorrectly described with no recognition of the connection to the regional groundwater system. The consequences of depressurisation and reduction in base flows must be reassessed.

Note a key aim of the research outlined above: *'A key aim of this research was to assist future planners and land managers in the Goulburn and Hunter catchments balance development with the protection of resilient riparian ecosystems and the ecoservices they provide.'*

Water issues have not been adequately addressed and the project should not be approved.

Cultural Heritage

There has already been loss of cultural heritage values in the landscape due to large-scale mining activities. The cumulative effect of this needs to be acknowledged and any further loss prevented. This area is significant as it is associated with the Goulburn River trade routes and a known corroboree site at Cooks Gap. The Traditional Pathways of the Aboriginal people are intrinsically tied to the landscape. Changes to the visual landscape impact negatively on their connection to the land.

An additional 48 sites of cultural heritage have been identified and will be impacted. We are diminished by such action. Members of MDEG urge that this project should not be approved.

Landscape

Mine subsidence is a consequence of longwall mining and this proposal for extensions will increase subsidence impact. An additional area of 993.2 ha will be impacted. This huge area is significant for all the reasons given above. The cumulative impact on significant sandstone cliff lines is untenable.

Australians have a great sense of identity and place. This proposal would fracture that relationship as much as it would fracture the ground and the landscape.

MDEG members believe there is no valid justification for the project to proceed.

Thank you for the opportunity to comment.

Sincerely,



Rosemary Hadaway

Chair

Mudgee District Environment Group

APPENDIX 1.

"Changing land use in an uncertain climate; Impacts on surface water and groundwater in the Goulburn River, NSW"

Submitted in fulfilment of the requirements for the degree of 'Doctor of Philosophy'

Australian National University, October 2019

This thesis is available free of cost through ANU Open Research repository.

Access the thesis using this link: <http://hdl.handle.net/1885/172041>

A summary of this paper is provided below by the author: Dr Julia Imrie

The Goulburn River while the largest tributary of the Hunter River is one of the least studied and understood catchments in NSW. Dr Imrie's research makes a significant contribution to understanding this complex catchment where natural processes are added to or altered by land-use and climate change.

The study found that the overall decrease in the amount of surface water in the river system (or catchment yield) since the 1970s was most likely due to losses in stream baseflow rather than a decreasing trend in rainfall or changes to rainfall distribution. In addition extracting more water from lower salinity catchments would increase the Goulburn discharge of salts into the Hunter. Equally important, any decrease in rainfall with climate change would further decrease fresh water discharge and increase salinity.

A key objective was to investigate the salinity of the catchment's geologies to determine the source of salts found in surface water and groundwater and how water quality is being altered by changing land use and rainfall. The research highlighted the important role of freshwater inputs from low salinity geologies in the Goulburn for maintaining water quality, baseflows and resilient healthy ecosystems. The Narrabeen Group of Triassic sedimentary rocks was found to be a crucial regional freshwater resource. Triassic groundwater is generally regarded as low yielding based on pump extraction data. However while exhibiting a low flux; the volume of groundwater held in Triassic sandstone strata can be significant, and important in mitigating salinity and maintaining water dependent ecosystems during extended dry periods.

Dr Imrie found that mine water discharge in the headwaters of the Goulburn has increased salt loads in the river. In the period 2012-2016 direct mine water discharges from one mine, with a mining footprint 1.4% of the upper Goulburn catchment contributed over 13% of the river's salt load. Mine water discharge exported over 10 times the upper catchment's annual average salt yield of 5.5 tonnes per square kilometre per year. NSW Government mandated salinity levels for mine discharge water are set much higher than pre-mining and background levels. There is a need for regulations governing water extraction and mine water discharge to reflect pre-existing stream chemistry, salinity and connectivity between surface and groundwater rather than mine operational priorities.

The discharge of surplus mine water in the upper Goulburn is presumed to offset the estimated baseflow losses in the river system; however the direct and indirect loss of surface and groundwater due to mining, is essentially unquantified. Dr Imrie warns that groundwater modelling used in the approval of the three mines in the upper Goulburn significantly underestimated the impact on groundwater system. Her research argues mine subsidence and groundwater depressurisation has altered the general hydraulic gradient or direction of groundwater flow away from the river towards a regional sump created by mining - intercepting fresh aquifers and baseflow.

The study investigates a groundwater dependent ecosystem in the upper reaches of the Goulburn River known as 'The Drip' gorge. This impressive feature and river reach has been classified by the National Trust as a significant heritage and conservation landscape. The Drip is fed by an extensive perennial spring that seeps from a multilayered sandstone cliff overhanging the Goulburn and has supported a range of water dependent plant species through major droughts over the last century. This research uses The Drip as a 'window into groundwater' for understanding the relationship between the groundwater system and base flows in the river. The report shows that future longwall mining near the river has the potential to significantly lower the regional water table on both sides of the river by up to 20 metres affecting the springs, seeps and groundwater that feed this ecosystem.

The chapter on the Merriwa River investigates the hydrogeology of this major agricultural tributary with the highest salt output of all the sub-catchments. The direct relationship between stream discharge and stream salinity means that granting additional water licenses and failing to regulate water use when coupled with periods of low rainfall will inevitably increase salinity discharge into the Goulburn and Hunter Rivers. Deep town water bores were found to be accessing Triassic groundwater sources than the previously thought Oxley Basin.

A key aim of this research was to assist future planners and land managers in the Goulburn and Hunter catchments balance development with the protection of resilient riparian ecosystems and the ecoservices they provide. It identifies areas for future research and options to improve the sustainable management and use of water resources. Recommendations include a centralised database of government, industry and research data to provide ready access to relevant monitoring reports and the active engagement of the community in the monitoring of surface and groundwater, and key water dependent ecosystems.

Julia Imrie

1st September 2020