



Hunter Environment Lobby Inc.

[REDACTED]
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Moolarben Modifications – HEL Objection

Hunter Environment Lobby (HEL) is a regional community-based environmental organisation that has been active for well over twenty years on the issues of environmental degradation, species and habitat loss, and climate change.

HEL has particular interest in biodiversity and water management issues in the Hunter Region and has held positions on the Hunter River Management Committee, the Hunter and Paterson Environmental Water Advisory Group and the Upper Hunter Air Quality Monitoring Network Advisory Committee.

Hunter Environment Lobby lodged an objection to the proposed expansion of Moolarben Coal Mine on the following grounds:

- significant impact on groundwater sources
- unpredicted large water interceptions into the underground mine workings
- poor assumptions in the groundwater model
- permanent loss of springs in the landscape
- increased salt load and cumulative impacts on the Goulburn River
- cumulative threat to the Hunter Salinity Trading Scheme
- cumulative loss of critically endangered species habitat and poor biodiversity offsets

We find that many of our concerns have been echoed by NSW Government and Federal Government agencies.

Hunter Environment Lobby does not support the Department of Planning and Environment evaluation of the Moolarben modifications that its recommended revisions to the conditions of approval provide a comprehensive, strict and precautionary approach to ensuring the project would continue to comply with performance measures and standards, and that the predicted residual impacts would be effectively avoided, minimised, mitigated and/or compensated.

This submission will outline our reasons for disagreeing with the Department's recommendation that the modifications be approved.

Hunter Environment Lobby is interested in the wider regional implications of this project and the fact that rigorous cumulative impact assessment has not been undertaken.

Regional Context

A number of regional assessments and strategies have been carried out for the Hunter in regard to water sources and water security over the past few years.

1. Bioregional Assessment on coal mining and coal seam gas Hunter subregion 2018

The Commonwealth Government, in a scientific collaboration between the Department of Environment and Energy, Bureau of Meteorology, CSIRO and Geosciences Australia conducted a high level assessment of the impact of mining on water sources in the Hunter Region.

This assessment found that a significant area of the Hunter region has been subject to hydrological change due to the impacts of coal mining.

The report identified waste rock blasting, excavation and storage, subsidence and subsurface fracturing from longwall mining and mine dewatering as key hazards to water sources. Also that that mining interception in the Hunter Region will result in increased system losses.

Key finding 6 of the report found that: *“Modelled changes in ecologically important flows indicate a higher risk to the condition of riverine forested wetlands along the Goulburn River compared to other riverine forested wetlands in the subregion”*

The report makes a number of predictions in regard to the impacts of the Ulan, Moolarben and Wilpinjong Mines plus the proposed Bylong Mine on the hydrology of the Goulburn River. It stresses that localised investigation is important.

Hunter Environment Lobby considers that the cumulative impact assessment of the Moolarben modifications on the Goulburn River has not been rigorous. This is supported by the OEH science advice and the Independent Expert Science Committee advice.

It is critical that the Commission consider all current and proposed impacts of coal mining on the Goulburn River, including the proposed Bylong Mine.

2. Greater Hunter Regional Water Strategy 2018

This report produced by NSW Department of Industry Water is a focus on water security in the Hunter Region. It makes some reference to the influence of coal mining on water sources.

The report notes that the combination of differing methods of coal extraction, variability of climate-driven contributions to mine site supply, site specific responses to groundwater ingress, connectivity to rivers and other surface water sources creates an extremely complex mosaic of water take.

A key outcome from this study is that climate change impacts are likely to significantly increase risk to all water users. This is a strong argument in itself for not approving any more expansion of coal mining in the region.

The report found that drought security was confirmed as the primary economic risk facing the Upper Hunter. This risk extends to all sectors, including urban, agriculture, mining and power generation.

It also found that reductions in the base flows of rivers have occurred, and will continue to occur, as mining intercepts surface runoff and lowers groundwater levels near rivers.

The report describes that mining operations take water from a number of supply sources:

- direct take - sourced from rivers and bores & pumped to the mine site. The industry has a high level of annual water entitlement across a range of different water licence types
- incidental take - water draining into a mine excavation from the surrounding porous rock or aquifer systems
- interception take - rainfall/runoff capture on-site or harvesting from sediment basins built on the mines
- indirect take - from cracking a water source, conduit drainage or pressure displacement driving surface/ground waters into the mining operation

No-one actually knows what volume of water this all adds up to across the region. There has been no assessment of this cumulative volume of water take from the Goulburn River catchment including from the proposed Bylong Mine.

The current cumulative loss of surface and groundwater inflows into the Goulburn River from the three approved mines with 70 km² of open cut mine disturbance through rainfall and runoff capture and 120 km² of underground mine disturbance through subsidence and groundwater drawdown has not been assessed by the NSW Government. The Bylong Mine, if approved, will add another 27.61 km² to this mining footprint pushing the total to over 200 km² of impacts on the catchment.

The community has been calling on the Department of Planning to commission an independent investigation into the impacts of coal mining on the Upper Goulburn River water source for at least 20 years. All that has happened over that time has been ongoing expansion of coal mining in the catchment on a mine-by-mine, modification-by-modification basis with no concerted effort to rigorously assess cumulative impacts. The fact that today we are commenting on the fourteenth modification of Moolarben Mine over a 12 year period is a case in point.

Commissioners, we strongly urge you to conduct this independent research because no-one else will. It is imperative that you have a full understanding of the cumulative impact of mining on the Goulburn River before you can make an informed determination of the proposal before you.

3. Hunter River Salinity Trading Scheme

In our initial submission we raised the following points:

We do not support the conclusion of the environmental assessment that this modification will not impact on the Hunter River Salinity Trading Scheme. When the cumulative salt load from the Ulan, Moolarben, Wilpinjong and proposed Bylong mines is taken into account, there is a significant increase in salt levels in the Goulburn River above natural background.

The economic impact of this on the mining and power industry in the Hunter Valley must be taken into account.

There is no evidence in response to submissions that the cumulative salt load from all mines and proposed mines in the Goulburn River catchment has been adequately considered.

We note that the EPA has referred to the fact that the SEARs require a cumulative assessment to be undertaken and previous planning consent requires the proponent to minimise cumulative water impacts with other mines in the region.

The response to submissions merely requotes the Advisian assessment in 2017 that the Scheme's salinity goal downstream of the Goulburn River / Hunter River confluence is 900 EC and that the proposed discharges from the Moolarben Coal Complex would not adversely affect Scheme participants.

However, it is noted in the Bioregional Assessment that at the Glennies Creek reference point, downstream from the Goulburn River confluence, salinities have exceeded 1200 EC on a number of occasions since 2007 and have regularly exceeded 900 EC since 2007.

Measurement of salt load within the Goulburn River at the mid-stream Coggan gauge have demonstrated an increase in flow heights with salinity levels above 900 EC. This level of salinity has been recorded at flow heights of 107 million litres per day, whereas pre-mine, this level was recorded at very low flows of 63 million litres per day.

The potential loss of dilution flows from the Bylong River plus an increase in salt load, if the Bylong Mine is approved, must also be taken into account.

The Hunter River Salinity Assessment Report commissioned by the EPA in 2013 identified areas where additional monitoring and assessment is required to better understand rising salt levels in the river system. These include:

- A more comprehensive and representative groundwater monitoring program for the Hunter catchment
- Studies to fully understand the environmental effects of the different components of mine and power station discharge water (eg ionic composition, metals/metalloid contamination etc)
- Strategic real-time monitoring of flow and salinity in the upper Goulburn River catchment

Hunter Environment Lobby is very concerned that none of these actions have yet been implemented and that the Hunter River Salinity Trading Scheme could well be under threat from this modification.

Specific Issues with Moolarben Mine

There are numerous complex issues relating to the management of water impacts from the Moolarben Mine. We note that this operation, currently approved to produce 18mtpa, is one of the largest combined open cut and underground mining projects in NSW.

The impacts of this mine, consisting of two stages approved 8 years apart with multiple modifications and expansions over a 12 year period are highly significant.

1. Groundwater Model

A key issue has been the adequacy, or lack thereof, of the groundwater models used to assess and approve the operations to date.

We note that the most recent update of the groundwater model has reviewed the assumptions made in the 2011 model. However, there are several areas that may still need independent review. These include assumptions around permeability, vertical connectivity and flow pathways, and rainfall recharge rate.

We also note in response to an issue raised by DPI Water that the updated model does not include new information collected after April 2017.

The updated model predicts an additional 1,000 megalitres per year inflow to the mine. This could still be a conservative prediction.

There is no assessment conducted in regard to where this additional inflow is reporting from in the surrounding environment. The suggestion that it could be seepage from the East Pit water storage on the Ulan Mine is strongly contested by Glencore.

This extra water could possibly be from an additional drawdown of base flows to the Goulburn River, or of the regional groundwater source that feeds key groundwater dependent ecosystems, such as The Drip.

While the modifications before you concentrate on managing this additional water on the mine site, there is no assessment of where the water will come from.

The key issue is that this additional water will report to Underground 4 that is closest to the Goulburn River. Underground 4 was approved in 2007 based on very poor groundwater impact assessment. The community commissioned an independent expert report that pointed out the key failings of the groundwater assessment. That report was ignored by the Department of Planning.

The belated discovery of additional water through the updated groundwater model confirms our original objections.

The environmental impacts of Underground 4 with the additional water intake must be reassessed before any determination of the modifications before you can be finalised. This reassessment should form part of an independent study of the cumulative impacts of mining on the Goulburn River

2. Water licences

We note that DPI Water raised the issue of water licences to account for the baseflow losses in Moolarben Creek and the additional water intake predicted by the new groundwater model.

The response is that MCO 'will hold water access licences to account for predicted impacts over the life of the Moolarben Coal Complex as required.'

This response does not state that MCO **does** hold the required licenses.

Further response from the agency notes that the Water Management Plan must be updated in consultation with the Natural Resources Access Regulator including nominated water access licences to account for the projected take.

Hunter Environment Lobby objects to this occurring after determination.

The Commission must be confident that MCO has or can demonstrate ability to obtain all required water licenses before making a final determination.

A key issue with the current water licencing policy for mining in NSW are the exemptions. This means that protections for other water users and the environment are removed once a mining company has purchased the license. For example, a licence under the Water Sharing Plan for the Hunter Unregulated and Alluvial Water Source is exempt from the cease-to-pump rule for groundwater interception.

Mines are also exempt from the 10% rainfall harvesting rule and the Aquifer Interference Policy has not been fully implemented.

Therefore, the holding of water licenses does not necessarily mitigate the environmental and social impacts of water interception by mines. The Commission needs to take these issues into account.

3. Management of Moolarben mine water

We did not support the proposal to increase the volume of water discharge into the Goulburn River to 20 ML/day. The problems associated with this proposal have been very clearly outlined in the OEH science review, the EPA and the IESC.

The proposed reduction of this volume to 15 ML/day still does not solve the problem of long-term hydrological and salinity impacts on the river.

We do not consider that the recommended conditions of approval will mitigate this additional impact on the health of the Goulburn River.

Moolarben Mine currently has approval to discharge 10 megalitres per day. This should be adequate to manage the site water balance. This volume of discharge will also minimise the issue of brine management on site.

All discharges from the site must be managed under a set of environmental flow rules that reflect the antecedent conditions in the catchment. This should be regulated under the EPA Environmental Pollution Licence.

We do not support the proposal to limit the salinity level to 685 EC. To protect the river health and downstream water users, including other mines and the power stations participating in the Salinity Trading Scheme, the limit must be lowered to 500 EC. This is consistent with the EC limit on the Wilpinjong Mine.

We support the introduction of a reverse osmosis plant to manage the salinity levels in the water discharge off site. However, we strongly oppose the storage of brine in Underground Mine 4. We note that the EPA has also objected to this proposal.

The best way to solve all these water management problems and cumulative impacts on the Goulburn River would be to reverse the approval of Underground 4 based on insufficient environmental impact assessment.

4. Biodiversity impacts

Hunter Environment Lobby does not support the proposed extension of Open Cut Pits 2 & 3.

The significant impact on seven threatened species listed as matters of national environmental significance will be avoided if these extensions are not approved. We do not agree that these impacts will be adequately mitigated by the proposed biodiversity offset arrangements. The "Gilgal" property is not secure from the impacts of mining exploration and extraction with two exploration licenses over it. It is not an appropriate site as a biodiversity offset to relinquish credits for the Koala and a range of critically endangered species.

The relinquishment of biodiversity credits on mine rehabilitation is unproven and not appropriate to offset the loss of critically endangered ecological communities.

We do support the proposal to remove the approved out of pit overburden emplacement at Open Cut Pit 3. This change in mining operations will save a stand of remnant vegetation on the mine site that has high biodiversity value.

The proposal to improve the backfill rate of overburden is commendable and should be approved.

We do not support the need to extend the pits to secure the high walls. This could be achieved within the current approved mining footprint through a change in the Mine Operations Plan.

5. Greenhouse Gas Emissions

The assessment of GHG emissions for these modifications is incorrect. The calculations were based on an increase of 3mtpa of run of mine coal from 13mtpa to 16mtpa when the proposal is to increase the product coal limit from 18mtpa to 22mtpa.

This assessment needs to be redone in the context of the full 22mtpa for another 19 years until 2038.

We do not support this increase in coal extraction or GHG emissions at a time when we are being warned by the global science community to reduce access to fossil fuels.

The environmental, social and economy costs of climate change are already too great and an additional \$82m royalties to the NSW Government over the next 19 years will not mitigate these costs.

Conclusion

Hunter Environment Lobby recommends the following:

The proposed increase in coal production cannot be justified.

The cumulative impacts of mining on the Goulburn River must be independently assessed.

The approval of a reverse osmosis plant, with water discharges maintained at 10 ML/day to be regulated with a salinity limit of 500 EC and environmental flow rules, will help to mitigate these impacts.

Brine must not be stored in the underground mines.

The environmental impacts of Underground Mine 4 must be reassessed.

The removal of the overburden emplacement at Pit 3 should be approved.

Yours in trust,



Jan Davis
President Hunter Environment Lobby Inc.