



## Concerned Waterways Alliance Submission on EnergyAustralia's Draft Yallourn Declared Mine Rehabilitation Plan (DMRP)

### About CWA

The Concerned Waterways Alliance (CWA) is a network of grassroots organisations, waterway advocates, scientists and community members across southern Victoria committed to protecting and restoring rivers, wetlands and groundwater systems.

Our submission is in support the detailed submissions made by our member groups, Friends of Gippsland Lakes and Friends of Latrobe Water.

### Executive Summary

The draft DMRP proposes to rehabilitate the Yallourn open-cut coal mine via a 665 GL pit lake (Lake Yallourn). CWA welcomes the opportunity to comment but urges a shift away from a single, water-intensive solution. We recommend a hybrid approach that first exhausts non-water-intensive options (strategic backfill, engineered landforms, dry covers and revegetation) and only then considers highly conditional use of water sources to fill a pit lake. The provision of alternative, manufactured water sources should be considered and all externalities accounted for in considering costs.

Key points in our submission include:

- Protecting the Latrobe River, the Gippsland Lakes Ramsar site and existing users by limiting new consumptive demand by the mine operator and accounting for loss of existing return flows and future evaporative losses.
- Addressing long-standing geotechnical and flood risks associated with the Morwell River Diversion (MRD) via rerouting or robust reconstruction and flood-relief spillways before lake filling can be contemplated.
- Demonstrating that any water access granted for mine rehabilitation is genuinely sustainable, time-limited, climate-contingent and transparently priced—consistent with regional strategies and public expectations, and impacts are thoroughly assessed.

- Publishing clear, measurable closure criteria, independent verification pathways and adequate financial assurance for post-closure performance and contingencies.

## Context and Principles

The Latrobe Valley Regional Rehabilitation Strategy (LVRRS) frames rehabilitation around safety, stability and sustainability, and recognises large uncertainties in future water availability. CWA supports a precautionary, climate-resilient pathway that prioritises environmental flows, Traditional Owner values, and long-term landform stability with minimal ongoing management.

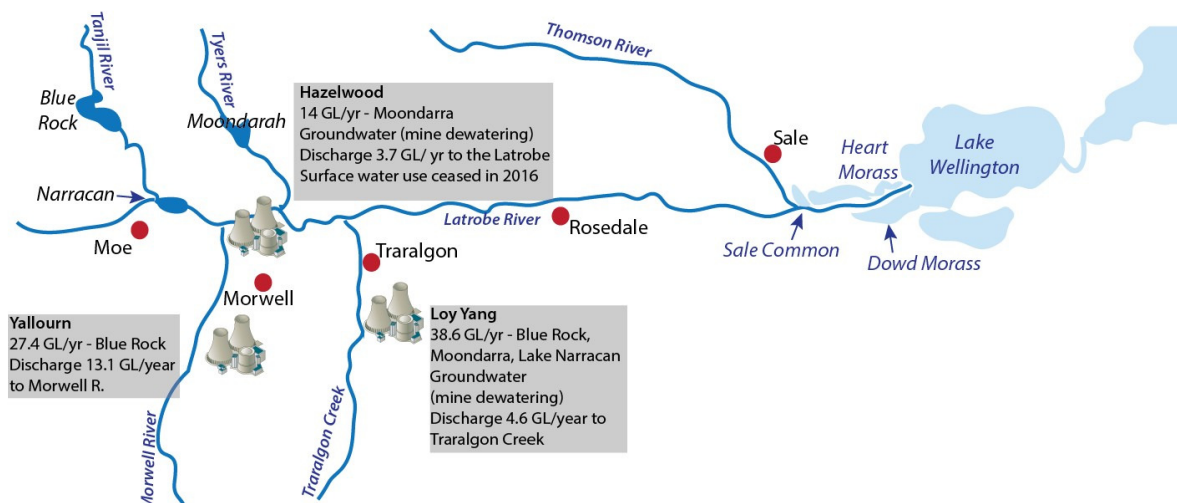
CWA suggests that EnergyAustralia adopts the following principles to guide the development of the DMRP:

- Avoid irreversible commitments that depend on an uncertain future water.
- Minimise ongoing management by favouring passive stability and fire risk controls.
- Respect environmental flow requirements and planned increase to environmental allocations and enhance the health of the Lower Latrobe wetlands and Gippsland Lakes.
- Ensure Traditional Owners are partners in deciding future land and water use.

## Key Concerns with the Draft DMRP

### 1. Scale of Water Use and Permanent Losses

Treated water discharges from the Yallourn mine have contributed water to the Latrobe River system and, by extension, the Gippsland Lakes over the lifetime of the mine. The *Latrobe Valley Regional Water Study – Ecological Effects Assessment* (p.27) reports that these discharges, classified as “environmental flows”, returned total approximately 13.1 GL to the Morwell River per year.



The DMRP indicates that EnergyAustralia intends to apply for a Bulk Entitlement Licence at the historical gross operational volumes of 27,000ML per year, to be directed at pit filling as part of the rehabilitation.

The DMRP states that *“Passive filling of the mine void through rainfall and groundwater infill alone is estimated to take up to 80-100 years. That timeframe is potentially unacceptable from a geotechnical and public safety risk management perspective. As such, EAY intends to apply to the Minister for Water for a new BWE to support its proposed pit filling as set out in this DMRP. The current estimated time to fill if this BWE is granted is 24 years.”*

Yet there is no clear accounting for the fact that once mine operations come to an end, return flows of 13,100ML per year will cease, leaving the Latrobe system in deficit. This means less water in the river for environmental purposes. At a bare minimum, the licence volume should be reduced to 14.3 GL to compensate for the loss of return flows.

The proposed 665 GL lake would require decades of staged filling and ongoing “top-ups”. In addition to the loss of return flows, evaporation would create a new, perpetual sink, reducing water available for baseflows and environmental watering. Under dry climate sequences, access to surface water becomes scarce precisely when rivers and wetlands most need protection, and mine filling should not be prioritised over river needs .

CWA recommends that EnergyAustralia should

- Ensure there is no net reduction in water resources available to the Latrobe system by adjusting its bulk entitlement application to account for the loss of return flows.
- Model whole-of-system impacts (including the Gippsland Lakes) for median and dry climate sequences.
- Publicly commit to halting take in dry years and sharing reductions at least proportionally with other users.

## **2. Morwell River Diversion (MRD)**

The Morwell River is a vital contributor to the health of the lower Latrobe River and Gippsland Lakes. It acts as a surrogate headwaters for the system, providing both flows and organic matter and sediment that replenish the main river and its food web. If it became disconnected and ended in the pit lake, the loss would be irretrievable.

The river has been relocated several times to allow for mining works. The diversion structure has collapsed on multiple occasions, and the DMRP itself refers to the MRD as ‘a progressively deteriorating structure’ (p111). A final relocation away from the mine pit would provide a long-term solution and maintain the ecological benefits the Morwell provides to the wider river system.

The current MRD is an engineered structure in an active geomorphic and flooding setting. Failure or significant damage post-closure would risk uncontrolled inflow to the pit and loss of river connectivity.

CWA recommends that EnergyAustralia:

- Undertakes a transparent options assessment with whole-of-life costs and risks: rerouting the Morwell River away from the void or fully upgrading the MRD to contemporary standard:
- If the current alignment is maintained, commits to flood-relief spillways sized for climate-adjusted design events: and
- Publishes a conservative emergency action plan with responsibilities after licence relinquishment.

### 3. Water Quality and Geochemistry

#### *Impacts of stratification*

Pit lakes can stratify and develop poor water quality if inflows are low or of marginal quality. The DMRP should disclose full inputs, assumptions and uncertainty for water-quality and geochemical models (including acidity, salinity, metals/metalloids, and sulfate reduction dynamics) and set precautionary acceptance criteria for any off-site discharges. It should undertake a full analysis of the potential for, and consequences of, stratification in the water body, and potential corrective actions and who will fund them.

The DMRP should adopt conservative water-quality objectives aligned to intended beneficial uses (e.g., recreation/ecology) and publish calibration/validation details and sensitivity analyses for water-quality models.

#### *Heavy metals*

Greater attention is required to the issue of potential contamination by heavy metals. Some metals are predicted to reach concentrations close to ANZG freshwater protection guidelines. Manganese could pose a particular problem if stratification occurs resulting in anoxic conditions that cause it to become soluble. Subsequent mixing could bring soluble manganese to the surface where it could stain the water and be toxic to fish. Mercury rates only a passing mention even though it is present in Latrobe Valley coal and has potentially contaminated the catchment through deposition. It has the potential to bioaccumulate in fish and can be dangerous even at the modelled low level of 0.2 µg/L.

We ask that the final plan include a commitment to monitor bio accumulative toxins (mercury, plus any PFAS or other industrial remnants) in biota, in addition to levels in the water. If fishing and recreation are intended uses, the lake must meet edible fish standards over time, rather than raw water quality standards only.

### **Algal blooms**

The aspiration for a recreational lake raises the issue of eutrophication and the potential for algal blooms. Recent experience in the Gippsland Lakes and elsewhere shows just how devastating these blooms can be for marine and freshwater ecosystems. The DMRP mentions a planned next stage of modelling for nutrients (KG04), which we suggest includes an assessment of the potential for algal blooms and potential nutrient reduction measures such as pre-screening inflows, upstream catchment actions to reduce nutrients, creating treatment wetlands at entry points, or aerating to avoid the stratification that favours certain cyanobacteria.

### **4. Geotechnical Stability and Design Life**

CWA supports passive stability measures, but requests clearer linkage between design acceptance criteria, climate-adjusted loading, and post-closure monitoring. The adopted design-intent period should be matched with transparent inspection, trigger-action plans, and provision for major maintenance.

- Publish factor-of-safety and probability-of-failure targets by domain and phase.
- Commit to independent verification of buttressing, batter reshaping and erosion controls.
- Align triggers for intervention with conservative deformation and pore-pressure thresholds.

### **Non-Water-Intensive and Hybrid Alternatives**

The CWA understands there are a suite of alternatives that can materially reduce reliance on scarce surface water, shorten risk exposure during filling and improve climate resilience. These include selective/partial backfilling of critical zones to control floor heave and reduce water depth requirements as well regraded and reinforced land forms. It is particularly significant that the DMRP does not contain a single reference to the use of recycled water or stormwater capture from nearby towns as alternative sources of water for rehabilitation.

CWA recommends that the use of manufactured water (recycled water, storm water and—if economically and environmentally justified—desalinated water) needs to be fully explored.

### **Water Access, Conditions and Pricing**

If any surface water is accessed, it must be under a transparent entitlement with strict, climate-contingent rules and a price reflecting scarcity and opportunity cost.

We note that the DMRP flags conditions for a new bulk entitlement licence: restricting daily extraction volumes, limiting the months when extractions can occur, and no access to run of the river flows when levels fall below a certain limit, as in the Table below.

However, questions remain as to whether surface water extractions are warranted at all given the dire need of the Latrobe River and the Gippsland Lakes systems for increased flows. The

*Latrobe Valley Regional Water Study – Ecological Effects Assessment* is quite clear on the likely impact:

*“Harvesting floods to fill pit lakes will be detrimental to the system, particularly for Lake Wellington and the Lower Latrobe Wetlands. It will potentially lead to a change in the ecological character of the Gippsland Lakes Ramsar Site, which would have national and international implications.”*

Evaporative losses from the pit lake must be treated as a real cost to the system, offset with investments that improve river health.

Further it is essential that substitution away from environmental water does not occur and that we ensure no there is no diminution of planned environmental outcomes.

There is also the question of how the volumes accessed from the Latrobe River should be priced. As the CWA discussed in our recent submission on the *Economic Value and Pricing of Surface Water for Mine Rehabilitation in the Latrobe Valley*, the National Water Commission 2009 *Waterlines* report declared:<sup>1</sup>

*‘The Victorian Government established a price of \$1500 per ML for water from its currently unallocated share in Blue Rock Dam which is regarded as the cost of water for maintenance and supply by Southern Rural Water’.*

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<sup>1</sup> National Water Commission (2009) *Waterlines* Report no 19 ‘Water and the electricity generation industry’ p36.

Yallourn shares			
Storage Source	Storage Capacity Share		Inflow share
Lake Narracan	29.94%	2,165 ML	22.41%
Blue Rock Reservoir	15.72%	31,168 ML	15.72%
<b>Conditions</b>			
Yallourn annual extraction limit		27,000 ML	
Yallourn daily extraction limit		148 ML	
Annual period of Extraction		01 June to 30 November inclusive	
Limit on the releases from Blue Rock Reservoir		Releases from Blue Rock shares capped at 17.9 GL per year, which is the 25th percentile based on historical release.	
A threshold to prevent winter/spring baseflow being diverted from the Latrobe River		No access to run of river water during extraction period when the Latrobe River at Willow Grove is below 447 ML/d.	
Term of Bulk Water Entitlement		Date of termination of the Existing BWE until the first to occur of: <ul style="list-style-type: none"> <li>• 30 November 2065.</li> <li>• the 30th anniversary of the commencement of extraction for mine rehabilitation under the New BWE; or</li> <li>• the date on which EAY provides written notice to the Minister that EAY considers the New BWE is no longer required for the purposes of the rehabilitation of the Yallourn mine.</li> </ul>	

### Alignment with government policy and strategies

The CWA believes the draft DMRP is misaligned with several key regional and state policies that govern mine rehabilitation, water resources, and environmental protection. Specifically, the plan's heavy reliance on water and pit lake outcomes appears to conflict with the Latrobe Valley Regional Rehabilitation Strategy (LVRRS) and the Central & Gippsland Region Sustainable Water Strategy (CGRSWS), as well as broader climate adaptation strategies.

### **LVRSS**

The LVRSS is the guiding framework specifically intended to shape mine rehabilitation planning in the Valley. It sets forth principles that rehabilitation must be safe, stable, and sustainable, and that an integrated approach to regional resource management be adopted. One of its clearly stated principles is: *“Any water used for mine rehabilitation should not negatively impact... environmental values of the Latrobe River system or the rights of other existing water users.”*. The DMRP, by demanding 665 GL and ongoing top-ups, risks doing exactly that – negatively impacting other water users, including irrigators, Traditional Owners’ cultural water, and the environment.

The LVRSS does not explicitly endorse any particular rehabilitation for each mine but does caution that water-based options may become “less attractive or viable” once water availability and climate change are fully accounted for. The LVRSS Amendment 2023 refined some policies: notably, it hinted that mine licensees might consider manufactured water, and that planning processes should ensure up-to-date information on water access is used. It also highlighted Yallourn’s unique risk of MRD failure.

The draft DMRP reads as if those warnings were not heeded – it still relies on a plan conceived in the 1990s, updated with technical tweaks, but not fundamentally challenged by the new reality of water scarcity. Aligning with LVRSS would mean demonstrating that the pit lake option is truly sustainable when all externalities are considered.

### **CGRSWS**

The CGRSWS is the overarching policy for water in the region. Its main objective is to secure water for all needs in a future where less water is available, and has a strong focus on planning for climate change and substituting manufactured water for river water. It identifies a 129GL environmental water deficit for the Latrobe System and makes provision for increased environmental flows while supporting Traditional Owner values and future regional growth. It has a specific action to reallocate 16GL of the “Latrobe Reserve” (power station water) to environment and community by 2024. Additionally, the CGRSWS includes an action to “develop a vision and plan for the water future of the Latrobe Valley” – presumably integrating mine rehabilitation water needs with other regional needs. To grant a new bulk entitlement for mine rehabilitation before this work is complete seems grossly premature, and has the potential to reduce water availability for river health restoration.

### **Ramsar listing and the EPBC Act**

The Gippsland Lakes including some Lower Latrobe wetlands are listed under the Ramsar Convention, meaning Australia has an international obligation to maintain their ecological character. These wetlands are already degraded due to altered hydrology and diverting water to a mine lake could further alter hydrology, salinity regimes and habitat availability in the Ramsar site.

The Ramsar site is a Matter of National Environmental Significance (MNES) under the federal Environmental Protection and Biodiversity Act (EPBC Act) and any proposed change to its hydrology and ecological conditions should trigger a referral for assessment under the Act. Further, because a large coal mine is creating the impact, this is itself a MNES and should activate the so-called 'water trigger' in the EPBC Act and further assessment processes. A full scale Environmental Effects Statement will likely be required before any rehabilitation proposal can be approved.

CWA recommends a Commonwealth assessment under the water trigger, together with a State EES, to create a rigorous, transparent pathway to safeguard water resources, Ramsar values, and threatened species in the Gippsland Lakes and Lower Latrobe Wetlands.

### **Monitoring, Governance and Financial Assurance**

Long-term success and community acceptance of rehabilitation plans hinge on independent oversight, transparent data and durable funding for monitoring and contingencies. To achieve these objectives, EnergyAustralia should:

- Establish an open data portal for hydrology, groundwater, geotechnical, and water-quality time-series.
- Set aside adequate financial assurance to fund monitoring, maintenance, and corrective works after rehabilitation works are complete.
- Formalise Traditional Owner partnership arrangements in governance and monitoring design.

### **CWA Recommendations**

We have made recommendations throughout this submission. The following provides a summary:

1. Adopt a hybrid rehabilitation pathway that first minimises water demand and only then—if all conditions are met—progresses to staged lake development.
2. Commit to MRD risk reduction: reroute or rebuild plus climate-robust spillways, with transparent emergency planning, independent peer review and community consultation.
3. Apply strict, climate-contingent water access rules with transparent pricing and accounting; treat evaporation as a cost and account for the loss of existing return flows.
4. Provide whole-of-system hydrologic and water-quality assessments for median and dry climate sequences, including impacts on the Gippsland Lakes.
5. Publish full methods and uncertainty for water-quality modelling; adopt precautionary objectives aligned to intended beneficial uses.
6. Set conservative operating levels and triggers to protect baseflows and connected ecosystems.

7. Establish independent oversight, open data and fit-for-purpose financial assurance throughout the post-closure period.

### **Closing Statement**

Rehabilitation should not trade away the health of the Latrobe River and the Gippsland Lakes for short-term convenience. A climate-resilient, precautionary, and staged pathway can deliver a safe and stable landform while safeguarding water for Country, ecosystems and communities.

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### **Acknowledgement**

We acknowledge the Gunaikurnai people, Traditional Owners of the land and waters affected by this project, and pay respects to Elders past and present.

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