



**Australian Government**  
**National Water Commission**



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**Submission to the Senate Environment,  
Communications and the Arts References  
Committee Inquiry into impacts of mining in the  
Murray-Darling Basin.**

**17 September 2009**

## **Preamble**

This submission addresses the terms of reference for the inquiry 'impacts of mining in the Murray-Darling Basin'.

The National Water Commission is the lead Australian Government agency for driving national water reform under the National Water Initiative (NWI) - Australia's blueprint for how water will be managed into the future. The Commission is responsible for assessments of progress in water reform and aiding the implementation of the NWI. To assist in the implementation of the NWI and to improve water management and knowledge the Commission manages the Raising National Water Standards Program and the National Groundwater Action Plan.

## **1. Background**

The National Water Commission is aware of ongoing concerns about the effects of mining, as defined under the terms of reference, on water resources and other water users and the environment in the Murray Darling Basin. This includes potential conflicts between mining operations, and other water users in the same catchment and downstream, including the environment.

On 12 August the Senate agreed that the Standing Committee on the Environment, Communications and the Arts References Committee would hold an inquiry into impacts of mining in the Murray Darling Basin.

## **2. Policy Context**

### *The National Water Initiative*

The NWI is an intergovernmental agreement signed by all jurisdictions (the Parties) to advance water reform across the country. Through it, governments across Australia have agreed on actions to achieve a more cohesive national approach to the way Australia plans for, manages, measures, prices, and trades water. All jurisdictions in Australia are signatories to this Agreement.

Clause 5 of the NWI states that the Parties agree to implement the NWI in recognition of the continuing national imperative to increase the productivity and efficiency of Australia's water use, the need to service rural and urban communities, and to ensure the health of river and groundwater systems. The objective of the Parties in implementing the Agreement is to provide greater certainty for investment and the environment, and underpin the capacity of Australia's water management regimes to deal with change responsively and fairly.

### *Mining and the NWI*

Clause 34 of the NWI states that the Parties agree that there may be special circumstances facing the minerals and petroleum sectors that will need to be addressed by policies and measures beyond the scope of the NWI Agreement. In this context, the Parties note that specific project proposals will be assessed according to environmental, economic and social considerations, and that factors specific to resource development projects, such as isolation, relatively short project duration, water quality issues, and obligations to remediate and offset impacts, may require specific management arrangements outside the scope of the Agreement.

### *The Commonwealth Water Act*

The *Commonwealth Water Act 2007* makes provision for the management of the water resources of the Murray-Darling Basin and for other matters of national interest in relation to water and water information. The *Water Act 2007* reflects many of the objectives of the NWI specifically in relation to the Murray-Darling Basin. The *Water Act 2007* and the *Water Regulations 2008* are administered by the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA). The Murray Darling Basin Authority (MDBA) is responsible for the preparation and implementation of the Basin Plan. The NWC is responsible for auditing the effectiveness of the implementation of the Basin Plan and the water resource plans in the Murray-Darling Basin. The first audit is scheduled for 2012, and must be completed by March 2013.

The *Water Act 2007* makes specific reference to mining under section 255A:

#### **255A Mitigation of unintended diversions**

Prior to licences being granted for subsidence mining operations on floodplains that have underlying groundwater systems forming part of the Murray-Darling system inflows, an independent expert study must be undertaken to determine the impacts of the proposed mining operations on the connectivity of groundwater systems, surface water and groundwater flows and water quality.

### *Consideration of the issues*

It is difficult to determine the potential impacts of mining activities in the context of the Basin Plan and agricultural productivity as most individual mining actions have localised impacts that are regulated through state legislation. Cumulative impacts are even more difficult to determine as the future extent of mining activities in the Basin is not yet evident. Additionally, external factors outside the control of governments such as world commodity prices, demand and other suppliers will further influence the extent of both mining and agricultural activities in the Basin.

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It should be noted that mining is not the only activity that has effects on agricultural production and the environment. With the exception of climate, the majority of these factors are anthropogenic in origin and include water supply for critical human needs and other agricultural production. The following information from the Australian Bureau of Statistics on water use in Murray-Darling States for 2004-5 shows that mining represented 1.2% of the total water use.

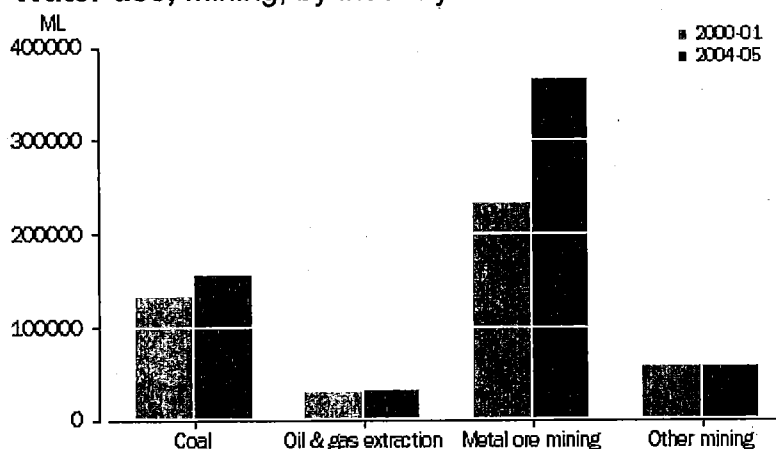
	NSW	Vic.	Qld	SA	ACT	Basin Total	%
	GL	GL	GL	GL	GL	GL	
Agriculture	4133	3281	2916	1020	1	11351	68.0%
Forestry and Fishing	11	8	3	1	-	23	0.1%
Mining	63	32	83	19	-	197	1.2%
Manufacturing	126	114	158	55	1	454	2.7%
Electricity and gas	75	99	81	3	-	258	1.5%
Water supply (a)	631	793	426	71	5	1926	11.5%
Other industries (b)	310	262	201	52	17	842	5.0%
Household (c)	572	405	493	144	31	1645	9.9%
<b>Total</b>	<b>5922</b>	<b>4993</b>	<b>4361</b>	<b>1365</b>	<b>56</b>	<b>16697</b>	<b>100.0%</b>

- (a) Includes the sewerage and drainage services industries and supply of distributed and re-used water, including water losses
- (b) Includes other industries not specified above and parks, gardens and sporting fields
- (c) Includes domestic consumption (drinking, cooking, cleaning or outdoor use)

Please note that the figures in this table are not restricted to water use in the Basin.

The ABS differentiates the mining industry into metal ore, coal, oil and gas and other, as shown in the following figure.

**Water use, Mining, by industry - 2000-01 and 2004-05**



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The Murray-Darling Basin Sustainable Yields Project carried out by the CSIRO determined that water resources in the areas identified by the inquiry are in a most cases approaching or are at full allocation. A comparison of the Namoi, Border Rivers and Condamine Balonne Catchments at Attachment A displays that the current land use in these catchments is primarily agriculture: grazing and irrigated cotton. Surface water use in these catchments is high and groundwater use is heavy to fully allocated.

It should be noted that due to the relatively low level of water use by mining in the Basin, extraction and water use by mining operations were not considered in the CSIRO reports.

With the level of water use across the Basin and the moratoriums on the issuing of additional extraction licences in the majority of catchments in the Basin, new mining ventures will be forced to purchase water from water markets. The only exception to this would be if a state provided water to a mining operation through a special licence arrangement under Clause 34 of the NWI. Given current pressures on water resources in the Basin, capacity to do so is increasingly constrained.

Secure access to and delivery of water are critical to the productivity and development of the minerals, petroleum, energy generation, pulp and paper (MPEPP) and other industrial sectors in Australia. A national report by ACIL Tasman (2007) found that the availability of water is a constraint on further investment and expansion of the MPEPP industries and suggested that the potential value of lost production, due to the unavailability of water of suitable quality, is high.

The Commission considers that NWI-consistent water access entitlements should be equitably available to MPEPP industries wherever possible. This would provide them with secure access, enable them to access water markets to buy or sell water to alter their level of overall water security, and allow new entrants to purchase water in the market. The large sectoral differences between the average value-added generated per unit of water used suggests that significant economic benefits are likely to be gained if water can be more freely traded between industry and agricultural users (ACIL Tasman 2007, page xi):

*Full implementation of the NWI reforms should provide the necessary market and other arrangements to ensure these industries have access to a water supply in a market which reflects both demand and the opportunity cost of supply. The NWI reforms should create opportunities for MPEPP industries to make a significant contribution to regional and national economic growth.*

Another benefit of this approach is that it should limit the potential for adverse impacts on the reliability of entitlements held by other water entitlement holders, which could occur if these industries were given priority access to limited water resources and their demands for water increased over time. However the Commission is strongly of the view that access for the mining industry to secure water entitlements, water planning processes, and water trading, carries with it a

concomitant responsibility on the industry to adequately manage third party impacts on other water users and the environment.

In addition to the volumetric impacts on other water users, the NWC recognises that there are a number of other important features of the water requirements and usage patterns in these industries that would need to be addressed through regulatory arrangements outside those specified in the NWI. For example, some of the features of these industries that require further consideration include:

- The impacts of mining activities on surface and groundwater geomorphology which has the potential to disturb or intercept water flows;
- the impact of mine dewatering activities on groundwater resources;
- the potential for entitlements to treated and/or untreated water from dewatering activities to enable productive use while managing any potential environmental impacts;
- management of any return flows associated with water use in these industries, both in regard to water quantity/flow and water quality; and
- potential water quality impacts of mining including salinity and pH.

As Rio Tinto Iron Ore noted in its submission to the National Water Commission Biennial Assessment, there may be instances where it may be more appropriate to continue with other forms of water access entitlements, such as water access licences that specify a range of special conditions on extraction. In addition to secure entitlements, mining operations often require a number of other water-related regulatory and licensing measures to ensure sustainable resource and environmental management. A number of states have made progress in this regard. For example, New South Wales is close to completing aquifer interference guidelines which clarify the assessment of impacts and accounting of water for mining.

A number of other public submissions to the Biennial Assessment process specifically noted the lack of recognition of the potential development of mining activities in water plans. Cumulative impacts of multiple mines were raised by a number of stakeholders. Some of these argue that the lack of consideration of mining activities in water plan development is resulting in unregulated water use by, and unmonitored return flows from, the industry. These submissions are public documents and are available on the Commission's website.

In summary, the Commission considers that as future water plans are developed, NWI-consistent water access entitlements should be made accessible for the minerals, petroleum and other industrial sectors (including plantations and other extractive industries) in order to provide those industries with secure water access and the ability to trade water with other users. Particular circumstances (such as mine dewatering and return flows) and potential third-party impacts that might limit the applicability of NWI-consistent water access entitlements should be clearly identified and managed through conventional NWI processes, or mining-specific management provisions if necessary.

Other activities undertaken by the mining industry to be, and be recognised to be, responsible water stewards and managers include the publishing of the *Strategic Water Management in the Minerals Industry - A Framework*. The framework is

jointly published by the Ministerial Council on Mineral and Petroleum Resources and the Minerals Council of Australia and aims to promote a strategic approach to water management at mining and processing sites so that water is more efficiently managed and valued as a vital business, community and environmental asset.

**Potential impacts of current and projected mining operations on all environmental values in the Murray-Darling Basin and, in particular, the potential impacts on mining on surficial and groundwater flows and quality in alluvial floodplain in the Namoi Valley and Darling Downs**

It is the Commission's understanding that the current levels of mining, as defined under the terms of reference, are relatively small scale and to date have had only localised impacts in areas such as the Namoi and Darling Downs.

Future developments including mining in the Namoi and Coal Seam Methane Gas extraction in Southern Queensland could, if not adequately regulated, impact on the surface and groundwater systems at both local and regional scales. However, the Commission notes that regulatory regimes in all MDB states have been designed to require that proposals for major changes in land use, such as mining, will pass through detailed planning processes, including environmental impact assessments at both local and regional scales.

These regulatory regimes seek to require that all environmental effects, including cumulative effects, are considered prior to the issuing of a mining lease. Exploration for minerals and gas extraction is generally covered by regulatory arrangements under state Mining and Petroleum Acts.

Recognising the importance of these regulatory regimes, the NWC has commissioned a project *Potential Local and Cumulative Effects of Mining on Groundwater Resources - and the development of tools to aid the prediction and minimisation of cumulative impacts*. The project aims to assist in addressing the issue of mining effects on groundwater.

The objectives of the project are to:

- Assist jurisdictions in ensuring that their land use planning and Environmental Impact Assessment (EIA) requirements are NWI compliant;
- Ensure that cumulative positive and negative impacts of mining operations within a watershed or aquifer system are considered within jurisdictional land use planning processes;
- Develop planning tools and methodologies to be used within the EIA and planning processes to ensure that the local and cumulative impacts on water resources due to mining and other concurrent activities are both understood, and as far as possible, minimised;
- Develop guidelines and tools to enable the integrated management and accounting of water resources across multiple mine sites to minimise impacts on other water users;
- Develop these guidelines and tools so that they support other parallel NWI priorities, and

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- Assess the cumulative impact of mining on water resources in four priority regions from a sustainable development perspective.

The NWC project has already identified differences in the approvals frameworks and processes across all jurisdictions and importantly, for managing mining within the water planning process and on the priority placed on sustainably managing groundwater resources. It is clear that attention must be given to matters of inter-agency and inter-jurisdiction cooperation, communication, accountability and resourcing.

For all jurisdictions, it is clear that achieving consistency and complementarities between mining approvals processes across all mining, environment, water and planning legislation, is fundamental if each State is to implement, achieve and sustain the NWI objectives. The report has highlighted some areas where there is significant scope to improve the mine planning and approval process, such as through adapting the environmental assessment processes to better handle those impacts that are cumulative spatially and over time.

Providing a clear framework and consistent planning and approvals arrangements for each jurisdiction is considered a key step in:

- ensuring cumulative effects of mining on groundwater are adequately assessed in the approvals process;
- reducing adverse environmental effects arising from mine-altered groundwater flows; and
- achieving sustainable development.

Attachment B reports on the results of a consultant's assessment for the NWC of Basin states' NWI compliance of jurisdictional land use planning and EIA processes.

The NWC project complements a related project, to which the Australian Government has committed \$1.5 million as a one-third contribution towards a joint study into the surface and groundwater resources of the Namoi Catchment in NSW. The study is intended to provide high quality information to help identify the risks associated with mining on water resources in the region, and to inform the NSW Government's decision-making processes.