



Queensland Murray-Darling Committee Inc. Submission on the Environmental Protection and Biodiversity Conservation Amendment (Protecting Australia's Water Resources) Bill 2011

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Submission to:

Committee Secretary
Senate Standing Committees on Rural Affairs and Transport
PO Box 6100
Parliament House
Canberra ACT 2600
Australia

rat.sen@aph.gov.au.

Submitting organisation:

Chief Executive Officer
Queensland Murray-Darling Committee Inc.
PO Box 6243
Toowoomba QLD 4350
Phone: 07 4637 6276
Fax: 07 4632 8062
geoffp@qmdc.org.au

This submission is presented by the Chief Executive Officer, Geoff Penton, on behalf of the Queensland Murray-Darling Committee Inc. (QMDC). QMDC is a regional natural resource management (NRM) group that supports communities in the Queensland Murray-Darling Basin (QMDB) to sustainably manage their natural resources.

1.0 Background

QMDC has made submissions and deputations to the Australian Government seeking improvement to legislation, policies, and planning to both, prevent or manage impacts in the QMDB. These submissions and deputations have raised issues integral to the implementation of the Regional NRM Plan, and the protection of national and regional water resources, for example:

- **The Basin Plan - A concept statement July 2009;**
- **Development of Sustainable Diversion Limits for the Murray-Darling Basin Issues Paper November 2009;**
- **The *Guide to the proposed Basin Plan* (2010);**
- **The Inquiry into management of the Murray Darling Basin – impact of mining coal seam gas;**
- **Feedback on the Queensland Murray Darling Authority's *Position paper on localism*; and**



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- **Other related issues such as water use efficiency, the EPBC Act and Environmental Authority conditions; flood recovery; Great Artesian Basin and groundwater contamination.**

QMDC has consistently argued that a petroleum tenure holder's as of right to take underground water as part of their authorised petroleum activities in accordance with the *Petroleum Act 1923* and *Petroleum & Gas (Production and Safety) Act 2004* (Petroleum Legislation) is inherently flawed because that right has no limit placed on it. The tenet that water is consequential to the extraction of petroleum or gas allows for unsustainable practices that should not be perpetuated in light of this region's current water resource plans including GAB water resource plans.

QMDC asserts that legislation that allows a petroleum tenure holder's right to take unlimited groundwater should be amended. Any use or extraction of groundwater must be managed (allocated) to not only protect bore owners and natural spring ecosystems which are comparatively vulnerable in these circumstances but also to protect the QMDB, and the Great Artesian Basin (GAB).

QMDC submitted that new legislation under the auspices of the Queensland Government's *Water Act* should promote and encourage sustainable use of GAB and other groundwaters and ensure that practices relating to the exercise of water "rights" by CSG and petroleum projects will ensure high-quality stewardship of all groundwater including GAB resources; minimise disturbances to GAB resources; and protect GAB resources for future human and environmental purposes. The exercise of water "rights" must be tenable in terms of the long term sustainability of the region's natural resource assets.

GAB water allocations (including the Walloons) have been determined as part of the GAB WRP. Results of modelling presented by CSG companies have indicated that the removal of water from the coal seams will have no measurable effect on the GAB productive capacity. It is suggested that this is not a safe assumption on the grounds that:

- Time frames for impacts may be longer than those presented in model outputs – namely decades to centuries rather than the years to decades described in economic, production and impact assessments presented in public forums. Even if impacts are likely to be over extended periods, the public deserves to know what the likely impacts are so they can assess the merits of ongoing development.
- Modelling presumes initial and ongoing integrity of all aquifers and aquacludes.

The *Water Act* framework although it will manage impacts on water supply bores and springs from the extraction of groundwater by coal seam gas and petroleum tenure holders, should also be strengthened by allocating water licenses to petroleum tenure holders only when environmental, social, economic and cultural values are upheld and assessed according to well considered threshold limits and cumulative impacts on local, regional and national scales.



2.0 General comments

QMDC in general supports the intent of the Bill. The mining industry operations to take and use large quantities of water must be considered under Australian Government legislation.

Increasing the powers of the Australian Government to protect significant national water resources at a strategic level rather than by a case by case project level will provide at a national and regional level greater certainty with regards to NRM and sustainable use of resources. It will also illustrate to regional communities a commitment by the Australian Government to protect nationally significant natural resource assets.

The Bill with further refinement could serve to strengthen existing State Government water legislation and planning and help to define those environmental, social, cultural and economic values that need to be upheld in order to provide for the needs of current and future generations.

QMDC believes it serves to address the much referred to but yet little action on, cumulative impacts.

3.0 Specific comments

3.1 QMDC believes the Bill needs to articulate more clearly:

- 1] What mining operations and practices it has jurisdiction over;
- 2] Scientific terms it uses to describe impacts it is trying to prevent or manage. These include geological, hydro-geological terms e.g. hydraulic balance as per 4.2.below; and hydrological volumes;
- 3] Exception clauses;
- 4] Trading clauses;
- 5] Regulatory roles and responsibilities to implement legislation; and
- 6] Water extraction accounting measures

4.0 Recommended changes

QMDC offers the following recommendations:

- 4.1 RECOMMENDATION: replace “mining operations” with “mining exploration and operations” in relevant sections which include 24D, E and G. The definition needs to also capture waste by-products or associated water.**

QMDC believes the current definition “mining operations” may be taken to exclude exploration. Queensland Government legislation for exploration is different to development and in the case of bore construction this can lead to risk of compromising structural integrity and hydraulic balance. It also does not highlight the waste by-products of mining exploration and operations and their impact on water resources e.g. drilling fluids, brine and associated water by-products, and coal mine de-watering.



4.2 RECOMMENDATION: the term hydraulic balance be amended or explained under 24F to read:

- 24F *What is hydraulic balance of a water resource?*

A water resource is:

- a) the whole or any part of a river, lake, aquifer or other place where water occurs naturally on or below the surface of the ground, whether permanently, seasonally or during unusually wet seasons; or
 - b) any recharge zone or system for such a place.
- **Hydraulic balance** refers to the current approximation of equilibrium between replenishment of a water resource and access or use of the water resource for human or environmental benefit:
 - a) Human benefit includes licenced water use activities as well as stock and domestic, recreational, cultural and aesthetic benefits from a water resource.
 - b) Environmental benefits include maintenance of aquatic, terrestrial and groundwater dependant ecosystems and associated species with consideration to be given to: frequency of water access or inundation, persistence of waterholes or alluvial water levels, and, connectivity between different water stores within or between different water resources. Environmental benefit can also include the role played by the water in maintaining the structural integrity of the geological layer hosting the water resource.
 - c) Human and environmental benefits should be considered over short, medium and long time frames and in particular should consider cumulative impacts for at least a century after the likely completion of mining activity.

The current definition of “hydraulic balance” is limiting and at risk of being ambiguous. Hydraulics is the study of water under pressure. It could be argued that alluvial aquifers and surface systems are not covered by this legislation as they are not under pressure (other than atmospheric).

4.3 RECOMMENDATION: That a definition to include waste and associated by-products be added to “mining exploration and operations”.



4.4 RECOMMENDATION: That a definition for cumulative impacts be included, for example:

For this Act, the term is taken to mean the combined impact of mining exploration and operations and all associated infrastructure (onsite and offsite) on Australia's water resources over time:

- i. Spatial extent impacts* – those which occur over an area e.g. wetland and riparian vegetation impacted and the immediate and cumulative effect on riparian function in the catchment.
- ii. Spatial intensity impacts* – when a location is impacted on by the activities of multiple sites e.g. where the extraction of coal seam gas by several CSG/coal mine sites contributes to a reduction of hydraulic pressure in particular areas.
- iii. Simple temporal impacts* have a specific time of commencement and a measured form over time e.g. the amount of riparian land rehabilitated over time as a reflection of the stage of development of the mine life and of cumulative mining industry impacts on Ramsar listed wetlands or in catchment areas.
- iv. Offset temporal impacts* occur when multiple simple temporal impacts are superimposed upon one-another over time e.g. materials moving through rivers.
- v. Linked triggered impacts* are those that occur when one impact, either by its occurrence or by reaching a threshold level, triggers another impact that would not otherwise have occurred. The second impact is the triggered impact.

QMDC recommends a broad definition of cumulative impacts that includes the successive, incremental and combined impacts of an activity on community, environment and the economy. QMDC asserts that owing to the complex nature of cumulative impacts, the Bill must provide a clear direction on how cumulative impacts should be defined and measured. A simple typology used in the belownamed 2008 study and *Cumulative Impacts A good practice guide for the Australian coal mining industry* that distinguishes between spatial, temporal and linked impacts recognises that there is no one way in which impacts are cumulative and that a more differentiated approach is needed for both the measurement and management of such impacts (*SEE Assessing the cumulative impacts of mining on regional communities: an exploratory study of coal mining in the Muswellbrook area of NSW* (2008) at pp. xvi, xvii for discussion on definitional issues; and *Cumulative Impacts A good practice guide for the Australian coal mining industry* by Franks et al.).



4.5 RECOMMENDATION: That the Bill include a clause to protect Australia's resources requiring all water to be metered and nationally accounted for on extraction and measured and accounted for either as a waste product or as a beneficial use.

An underlying issue is that there does not seem to be a total water balance and total salt (pollutants) balance approach to management of water from CSG and coal mining activities within the QMDB. If such an approach has been attempted details have not been disclosed for public consideration. There are very real implications with an increase in salt additions to basin streams for Basin salinity targets, environmental watering plans and Sustainable Diversion Limits in the event that dilution flows are required.

In the Queensland part of the MDB, most CSG is extracted from the Walloon Coal Measures, an aquifer of the GAB. Although parts of the GAB underlie the MDB, GAB water is not part of the forthcoming MDB Plan. QMDC asserts water needs to be accounted for and managed even when it may 'straddle' two different water plans.

Connectivity between Walloon Coal Measures and shallower Condamine Alluvium presents clear implications for MDB water resources and the water licensing and accounting arrangements that need to not only accompany the MDB Plan but also this Bill.