

## **Senate Standing Committee on Environment, Communications and the Arts**

### **Senate Inquiry into the Impact of Mining in the Murray Darling Basin**

- a. the potential impacts of current and projected mining operations on all environmental values in the Murray-Darling Basin and, in particular, the potential impacts upon surface and groundwater flows and quality in the alluvial flood plains at its headwaters in the Namoi Valley and the Darling Downs catchments; and
- b. evaluation of the potential impacts in the context of the Murray-Darling Plan and agricultural productivity.

Submitted by:

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## Overview

The water shortage which has created a crisis in the Murray Darling Basin is due to the cumulative effect of drought, poor management, over-allocation and inappropriate land use, lack of knowledge and lack of co-operative planning and management. To pull back from the current situation will require community endorsement of capped and metered water sharing plans, assessment of water usage and rigorous enforcement of the plans. Mining activity must be subject to the same assessment, evaluation and compliance as any other water user.

The federal government's initiative to manage the Basin as one entity, without state borders, can potentially solve many of the problems, providing the Murray Darling Basin commission can get the balance right between the key stakeholders and if state governments are forced to comply with the commission's recommendations.

### Farming in the Namoi Catchment

I make this submission as a landholder and irrigator near Carroona on the Liverpool Plains. The Liverpool Plains are part of the Upper Namoi water catchment which feeds into the Murray Darling Basin. The Upper Namoi at Carroona is comprised of the Mooki River and several creeks which become the Namoi River. Irrigation in this area is from licensed and metered groundwater bores and dams. Water allocations have been drastically reduced in the last 5 years and continue to be 'ramped down' with the introduction of water sharing plans.

We have been farming here for 26 years and are acutely aware of the need for good management of water resources. Numerous floods and droughts have brought challenges to land management which have been addressed through floodplain management plans and Landcare initiatives. The water over-allocations of the previous decades have been addressed with water sharing plans which will force most landholders to use water and land much more efficiently and hopefully, reap the benefits of conservation farming. We rely on good quality land and water to make a living and recognise the quality of our crops can only ever be as good as the land and water in which they are grown. For this reason, we are willing to take the pain of water cutbacks to reap the gain of sustainability. There have been many changes in agricultural practices to adapt to these cutbacks including new seed varieties, zero or minimum tillage to preserve moisture and soil structure, tram lines to reduce compaction in the soil and GPS guidance systems for better accuracy in farm machinery. In short, farming is striving to adapt and improve. But it can only continue to do so if the basic ingredients of good soil and water are available.

This area is highly productive with the capacity to produce a variety of both summer and winter crops with above Australian average yields. This flexibility enables farmers to vary their cropping regime in line with market demands and seasonal influences. The assets of this farming community are the quality of the land and water, the climate, access to markets and the resilience of the people.

## Mining in the Murray Darling Basin

Mining is an activity with a big environmental footprint. It cannot occur without disrupting the soil structure and altering the quality and integrity of the aquifers which are the basis for agriculture in the Basin. There needs to be a clear line drawn when minerals occur under prime agricultural land, that this is a 'no go zone' for mining. It is becoming increasingly clear that humans cannot rely on the burning of fossil fuels for future energy needs, especially if the extraction of these fuels destroys valuable agricultural land and water.

The impact of coal mining on groundwater was well documented in the 'Southern Coalfields Report' released earlier this year by the NSW DPI. With regard to shallow aquifers and the effect of subsidence from long-wall mining the report states 'These surface impacts include cracking of rock bars, draining of rock pools and diversion of creek flows. Tensile cracking and tensile/shear movement of near-surface strata, bending of strata and horizontal separation of bedding planes may lead to changed groundwater flow pathways. Surface flows may be redirected to the subsurface, while pre-existing subsurface flows may be redirected to the surface drainage network. One of the key impacts is the chemical interaction between freshly broken rock faces and percolating groundwater. Groundwater dependent ecosystems, including both valley infill and headwater swamps, may also be impacted by changes in the water table and water chemistry.' Further discussion concerned deep aquifers 'Aquifers within the fractured zone are likely to drain to the mine workings, as will any aquifer in the caved zone....This depressurisation of aquifers in strata overlying the coal seam may be of little long term significance, providing that the aquifer is isolated from the surface drainage network of the water supply catchments and that there is no current or prospective use for the groundwater otherwise contained in the aquifer. It may also lead to cross contamination between fresh and saline aquifers.' These findings should not be ignored when considering the potential impacts of long wall mining. They emphasise the need for catchment wide water studies which will not just tick the box for the mining industries environmental study but actually inform and even decide the outcome of mining applications.

According to the Murray Darling Basin Commission website, there are presently in excess of 50 mine sites in the Murray Darling Basin. This information is under review as many of the statistics date from the early 1990s and the number could be much larger. Statistically, the amount of water used by these mines is small in comparison to the amount used by agriculture. However, if a mine site is impacting on aquifers by causing drainage and contamination to water supplies, how can statistics take into account the water wastage? How can a water sharing plan, reliant on fixed allocations and metered flows, assess the water usage from fractured aquifers and saline contamination?

For some mines, especially coal seam gas mines, water is a problem, rather than a valuable resource. Evaporation ponds are needed to dispose of water as a by-product which in turn creates an environmental hazard in the form of salt ponds.

Water uses for the mining industry include dust suppression, ore extraction, tailings, processing and on-site use. A report prepared by the Greens Party titled 'The Impact of Mining on the Murray Darling Basin' found the outcomes of mine water usage caused:

- a) Increased salinity levels as a result of mining processes
- b) An increased percentage of sustainable yield being used and increasing competition for scarce water resources

- c) Increases in sediment loads as a result of mining operations, and the
- d) Increased potential for heavy-metal and toxin pollution as a result of mining processes

Clearly, the impact of mining on the aquifers will be catastrophic for agriculture in this region as well as the towns and other industries.

The track record for mining in NSW shows an industry with contempt for environmental protection and a state government with little interest in holding them to account. In NSW state parliament on the 7<sup>th</sup> May 2008 in a speech delivered by Lee Rhiannon in which she referred to the 'EPA website for the period 2000 – 2006 showed 2,639 incidents across NSW in which 75 coal mining companies failed to comply with their EPA licences. Of these only 488 prosecutions were made and of those only a handful were against coal mining companies with fines totalling a mere \$95,000. '

For the Murray Darling Basin Plan to be effective there needs to be a cultural change, with breaches of licence conditions resulting in significant fines and/or revoking of licences. In addition the systemic governance problems which have plagued the implementation of effective water usage and sharing plans must be addressed. Finally, there needs to be a recognition of the need to preserve high value agricultural land as 'out of bounds' to mining industries.

In applying the precautionary principle, "the greater the possible harm, and the greater the uncertainty, then greater should be the caution" (Nevill 2006). Put another way: "The type and level of precautionary measures that will be appropriate will depend on the combined effect of the degree of seriousness and irreversibility of the threat and the degree of uncertainty" (Justice CJ Preston in *Telstra Corporation v Hornsby Council*, New South Wales Land and Environment Court 133, 24 March 2006, para 161.)

#### References:

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