

# Senate Standing Committee on Environment, Communication and the Arts

Inquiry into the effects of Mining in the Murray Darling Basin

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Submission by Caroona Coal Action Group – September 2009

Compiled by Timothy Duddy

Senate Committee on Environment, Communication and the Arts  
PO Box 6100  
Parliament House  
Canberra ACT 2600

## **Introduction**

The Caroonia Coal Action Group is a volunteer community group comprised of residents of the Caroonia district on the Liverpool Plains, as well as members of the wider community. CCAG was formed and incorporated in April 2006 following the grant of a five year coal Exploration Licence (Caroonia EL6505) by the New South Wales Minister for Mineral Resources to Coal Mines Australia Limited (CMAL), a wholly owned subsidiary of BHP Billiton. The company paid the NSW Government a sum of \$100 million for the licence. BHP Billiton proposes to continue exploration activities that include drilling over 300 exploration boreholes until 2011 - a period that has now been extended - after which they intend to apply for a mining lease. In November 2008, Shenhua Watermark Coal Pty Ltd was granted an Exploration Licence (Watermark EL7223) over the Watermark Exploration Area for a record \$300 million. The NSW Government has stated that it is considering offering further exploration licenses in the area.

## **Background**

The Caroonia EL covers an area of 344 km<sup>2</sup>, while the Watermark EL covers an area of 195 km<sup>2</sup>. Both exploration licences are located on the Liverpool Plains within the Upper Namoi Catchment, approximately 300 kilometres north-northwest of the Port of Newcastle, to which they are linked by rail and road. The Liverpool Plains spreads 12 000 km<sup>2</sup>, with a climate, soils and unique groundwater that make it one of the most fertile and drought-resistant agricultural areas in Australia. Figures from the Australian Bureau of Agricultural Research indicate that the Liverpool Plains produces on average 40 per cent above the national average for cereal cropping.

Water from this region forms part of the headwaters of the Murray-Darling Basin – the Mooki River drains northward to the Namoi River, progressing by way of the Barwon, to the Darling, right to the mouth of the Murray at Goolwa. This is a riverine system stretching approximately 3,330 km. The groundwater aquifers and surface water flows of the Upper Namoi Catchment provide stock, domestic, irrigation and town water supplies for Caroonia and neighbouring towns including Quirindi, Gunnedah, Breeza, Curlewis, Spring Ridge, Tambar Springs, Premer and the Walhallow Aboriginal Community. The area of the Upper Namoi Catchment referred to covers an area of 5,621 km<sup>2</sup>.

All the water from this area flows past the Breeza Mountain across a plain that is 8.4 km wide (see **Appendix A**). If the proposed mining developments take place, 20 million tonnes of coal would be extracted annually from the outcrop ridges to the North and South above this floodplain, bringing to the surface heavy metals, salts and other pollutants that would be stored adjacent to this important water resource.

As the driest inhabited continent on earth, with only an estimated 6 per cent of arable land across Australia, the preservation of these productive lands and finite water systems is clearly of national significance.

## **Water security**

While CCAG holds broader concerns for the cultural, environmental, and health impacts that may result from mining on the Liverpool Plains, and stresses the desirability of improved governance and regulation standards, our main concern continues to be the potential damage to the region's natural waterways, particularly to the significant and complex underground alluvial aquifers that lie beneath the flood plain.

Since it was announced that exploratory drilling was to commence in the area, CCAG has consistently maintained that an independent and comprehensive water study of the area is an essential and sensible prerequisite to such activity. While stakeholders, including the Federal and State Governments and BHP Billiton, have committed to a full study of the Namoi Catchment area, extensive exploratory drilling has already been undertaken - and continues – posing an unacceptable and ongoing potential risk to the water resources of the region. CCAG also considers that current exploratory drilling methods used in the area are inappropriate and pose a danger to the security of these water resources. CCAG has consistently asked that these practices be revised and improved to take into account the delicate nature of the complex aquifer structure in this region. In proceedings before the NSW Mining Wardens Court 2008/57,58,59,60, evidence was presented to the court by a former driller on serious shortcomings in the drilling methods employed by BHP Billiton, however the Mining Warden refused to rule on any of this evidence.

In July 2009, after months of negotiation, the NSW Government appointed Mr Mal Peters as Chair of the Ministerial Oversight Committee to facilitate the full commissioning of a water study of the Namoi Catchment area. It is envisaged that this study will commence sometime in 2010. We welcome BHP Billiton's commitment to provide some funding for this study, as well as their undertaking to incorporate the findings of the study as part of any environmental assessment undertaken in the future. The NSW Minister for Primary Industries Ian Macdonald also recently announced that BHP Billiton had assented to amendments to the Special Conditions of EL6505, preventing BHP Billiton from applying for a mining lease that includes any of the following in the Caroonia Exploration Licence Area:

- Long wall mining underneath the deep alluvial irrigation aquifers;
- Long wall mining underneath the floodplain; and
- Open cut mining.

We note that Shenhua has made no such commitment, and has stated publicly that it intends to conduct open cut mining in the Watermark area.

While these undertakings are very welcome, CCAG remains cautious in accepting their efficacy and scope. CCAG questions whether alternative types of mining other than long wall or open cut are, or may be, available in the future to mine these areas, and queries to what extent these amendments will restrain future mining activities. It has been standard industry practice to apply for variations to the mine approval condition - including environmental constraints - even before mining begins; whereupon many of the environmental conditions are no longer enforced.

We also emphasise the critical importance of the ridge formations around the flood plain and their contribution to the recharge of the underground aquifer and surficial aquifer. As the attached report, 'Deep Drainage and Runoff Estimates for Coal Exploration Leases EL6505 and EL7223' shows, should these areas be mined, water run off to the rivers and aquifers will be greatly impaired and will still be subject to other impacts that are experienced in every mining region around the country. This will undoubtedly have a profound influence on the Upper Namoi Catchment's contribution to the Murray Darling System.

CCAG urges the Government to act decisively to remove any and every doubt that mining will ever occur on the Liverpool Plains. Mining activities in the area of the Liverpool Plains must be excised by statute and be designated a prohibited land use on any alluvial floodplain at a slope of less than 2%.

Maintaining and managing the integrity and quality of water resources has been a major project in the Liverpool Plains region. Since large-scale irrigation for agriculture commenced in the 1960s, water policy has evolved significantly.

When, in May 1980, the Minister for Mineral Resources first granted an authorisation to prospect for coal in the Caroona area, pursuant to the *Coal Mining Act 1973*, water security did not appear on the mainstream environmental or political agenda. Rather, water resources were seemingly abundant and largely unregulated. Widespread and severe drought in the 1980s in particular raised awareness of the issue, prompting concern that the area could not sustain the historical level of water extraction. In 2000, the NSW Government acted by introducing the *Water Management Act 2000*, with the intention to provide for the protection, conservation and ecologically sustainable development of the water resources of the State. This had the effect of reducing the water entitlements of users in Zones 1 – 12 of the Namoi Valley catchment by 62 per cent in order to attain sustainable yields. The Department of Infrastructure Planning and Natural Resources calculated the sustainable yield at 201,443 ML per year (see **Appendix B**).

Such a drastic reduction indicates the concern for water resources which were, quite rightly, held at that time. In stark contrast though, we draw your attention to the fact that the NSW *Mining Act 1992* does not recognise the vital importance of water resources and, in fact, does not even mention the word 'water' once anywhere in the legislation. The grant of exploration or mining licenses in the Caroona area without proper regard for these same water resources is wholly inconsistent and irresponsible consequent management, allowing mining companies to explore the resources of the region without a proper understanding of the spatial relationship between coal and water resources.

Access to a reliable source of water is an essential requirement for coal mining, used variously to drill for the coal, to wash the product, to manage dust, and so on. Current reports provide statistics showing that at least 200 litres of water can be consumed for every tonne of coal produced, however this may vary according to operation practice and circumstance, and may be as high as 1000 litres. This represents a huge volume of water that is removed from the Murray Darling Basin, while remaining water may be irretrievably damaged through salinity, subsidence and cross-contamination.

## **Report - 'Deep Drainage and Runoff Estimates for Coal Exploration Leases EL6505 and EL7223'**

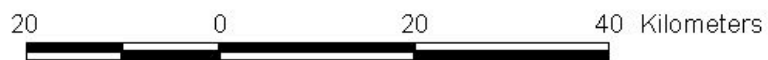
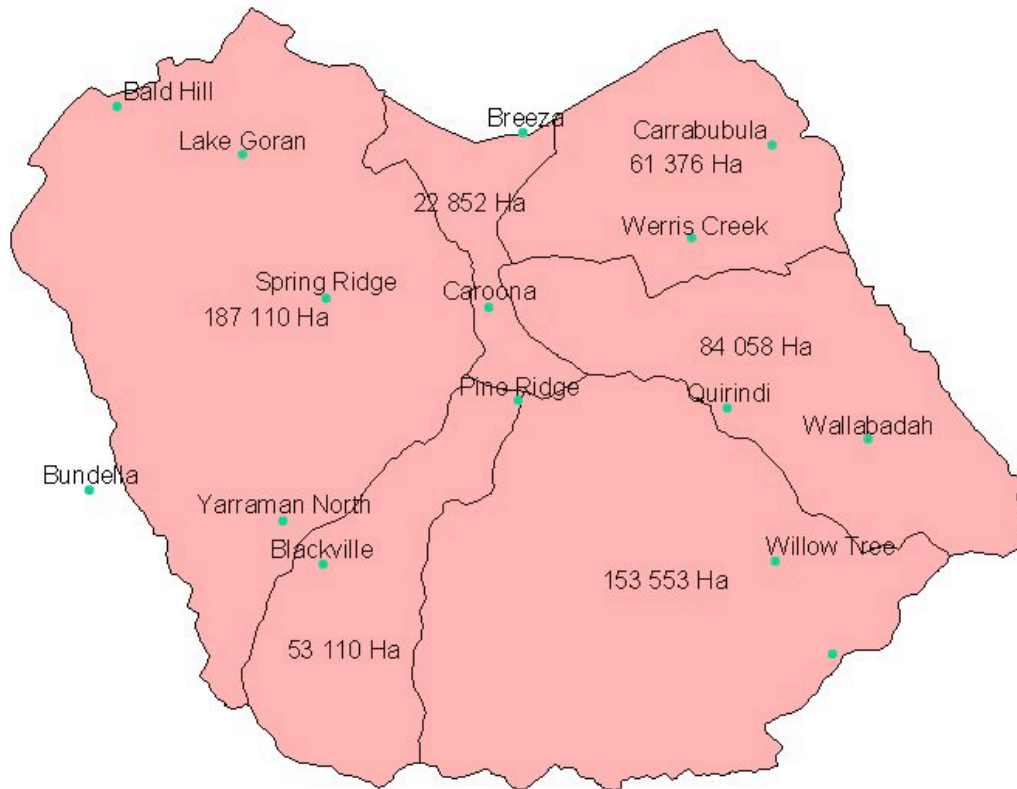
The attached report, 'Deep Drainage and Runoff Estimates for Coal Exploration Leases EL 6505 and EL 7223', by former Department of Soil Conservation scientist Robert Banks, was commissioned by CCAG to determine the overall contribution to the waters of the Murray Darling System by two areas on the Liverpool Plains currently under exploration licenses issued by the NSW Government – the Caroonia Exploration License (EL6505), and Watermark Exploration License (EL7223).

The report demonstrates that estimated annual flow of the Mooki River, based on the median flow, is 3.6 GL per year, measured at Gunnedah (DIPNR, 2004). The combined estimated runoff from the area of coal exploration leases EL6505 and EL7223 is 15.7 GL. It is probable that a substantial portion of this runoff is entering groundwater systems further down-slope from the points where this has been estimated, rather than entering the Mooki River. Runoff generated within EL6505 and EL7223, is shown to represent 436% of the median flow of the Mooki River.

Given the magnitude of the above estimates, and as Robert Banks states in it is strongly recommended that any significant proposed land use changes within either exploration lease area be seriously weighed up and concomitant losses to surface and groundwater be taken into account prior to any approvals being granted. It is apparent that the land within the exploration leases has significant input to both surface and groundwater flows in the region. Significant changes of land use within the areas of the exploration leases could cause highly significant reductions to both surface and groundwater flows, as well as posing a significant risk of damage to the irrigation aquifers themselves.

**APPENDIX A**

**Catchments Feeding Breeza Gap**



**Total Area = 562 059 Ha  
or 5 621 sq km**

## **APPENDIX B**

### **Upper & Lower Namoi Valley Groundwater Sources Water Reform Entitlement cutbacks by zone**

Location		Licensed Entitlement	Sustainable Yield	Entitlement <b>To be removed To reach sustainability</b>
		ML	ML	ML
	<b>Upper Namoi</b>			
Quirindi area	Zone 1	8,659	873	7,786
Mullaley to Boggabri area	Zone 2	23,501	7,141	16,360
Breeza to Gunnedah area	Zone 3	55,997	17,140	38,857
Gunnedah to Boggabri	Zone 4	82,777	21,040	61,737
Boggabri to Narrabri area	Zone 5	35,909	20,000	15,909
Quirindi area	Zone 6	11,435	14,000	-
Spring Ridge area	Zone 7	6,121	3,700	2,421
Quirindi to Breeza area	Zone 8	47,883	15,950	31,933
Tambar Springs area	Zone 9	11,542	11,303	239
Willow Tree to Quirindi	Zone 10	1,420	4,500	-
Maules Creek area	Zone 11	8,500	2,200	6,300
Kelvin area	Zone 12	7,487	2,000	5,487
	<b>Total Upper Namoi</b>	<b>301,231</b>	<b>119,847</b>	<b>187,029</b>
Narrabri to Walgett area	<b>Lower Namoi</b>	170,592	81,596	88,996
	<b>Total Namoi</b>	<b>471,823</b>	<b>201,443</b>	<b>276,025</b>

#### **Source of Data**

Sustainable yield and entitlement information as per the water sharing plan gazetted 27.12.02

Usage information provided by DIPNR. Usage shown is only up to 1997 when voluntary cutbacks were implemented in some zones.

The current usage is higher than the 1997 levels shown.

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