

MINING IN THE ULAN WOLLAR AREA & Impacts on the Goulburn River

1. Mining Background

A small coal mine using pit ponies operated at Ulan before 1980. In the 1980s Ulan Coal mines developed their open cut mine and longwall operation.

In 1981 White Mining¹ **diverted the Goulburn River** around their open cut mine. Approximately **3.6kms was moved 700m to the east to form a 4.2 kms steep-sided channel**. The river diversion has never been adequately rehabilitated and has left a legacy of an unstable diversion channel with active bank erosion immediately adjacent to the open cut void filled with coal rejects, tailings and overburden. It continues to impact on downstream water quality particularly after significant rain events.

Ulan Coal Mine has had to deal with increasing amounts of excess water from their mining activities and for many years discharged this water into the river with no limit on the level of salinity. Due to community pressure stricter conditions on the quality of the mine water discharged offsite were gradually introduced from 2000.

The mine currently produces between 11-15 Million litres per day (1ML= 1 Olympic swimming pool) This is predicted to increase to over 18 ML/day by 2011. Currently about 3-4ML/day is used for washing the coal and dust suppression. The mine recently purchased a desalination plant (reverse osmosis) to 'shandy' the poorer quality water with the 'pure' water to use for irrigation and also for discharge into Ulan Creek/Goulburn River. They were granted a licence to discharge up to 15ML/day of water (Salinity max. 800-900 µS/cm)

Ulan Coal Mine (Xstrata) has recently applied for an increase in coal production from 10 MT – to 20MT/annum and a 21 year lease. This involves a new underground mine (Ulan West) and a further extension to the open cut.

Moolarben Coal Project (Felix Resources) was granted a Mining Lease plus an additional Exploration Licence over 1145 hectares.

By 2012 the three mines could be **extracting over 40 million tonnes per year** of coal from the Ulan Wollar area. This amount of fossil carbon fuel will **produce over 100 million tonnes of greenhouse gases exceeding the total emissions from the whole transport system for Australia** (79 Million tonnes CO₂-e - [ABS 2004](#)).

2. Impact on Water

The impact of up to three large coal mines operations in the Ulan Wollar area raises many questions about interference to regional groundwater and long term viability and integrity of the Goulburn River, a major tributary of the Hunter River. By 2011 the combined total water being removed from the groundwater system by mining could be well in excess of **30 Million Litres per day** ².

¹ Now part of Felix Resources & owners of the Moolarben Coal Project

² Ulan CM = 17ML + Wilpinjong CM = 6.2 ML + Moolarben Mines = 6.9ML

Recent reports by Coffee & Associates (contracted by Ulan Coal Mines) indicate that mining, mine subsidence and dewatering of the underground has disrupted the upper Triassic groundwater system and affected the base flow of the Goulburn River. Modelling also suggests 1 Ml/day is leaking from the river diversion into adjacent old mine workings.

Longwall mining creates ‘subsidence’ that fractures and distorts the surface and underlying rock strata and associated aquifers (underground water). This can reduce surface runoff and interfere with the ‘connectivity’ or underground water flow linking aquifers with the river. The groundwater can also become contaminated by salts and other minerals (e.g. Iron oxides, Pyrites) disturbed by the mining process posing a long term risk to the health of the groundwater and river system.

Open-cut mining upends the landscapes, diverts and degrades surface and underground water flow and involves massive land clearing of native flora and fauna habitat.

The **Moolarben Coal Project** Environmental Assessment Report **predicted about 7 million litres of water** would be produced per day from the underground mine. This is well below what Ulan CM has experienced.

The Moolarben underground mine **extends** beneath the **saturated Triassic aquifers** that feed the river and within 80m of the river banks. While the **three open cut mines** stretch along a major catchment tributary upstream, in the **water rich** Moolarben valley.

The million dollar question is what will happen to the water when mining ceases?

1. Will the groundwater reservoirs ever recover?
2. What will be the water quality and salinity levels of water draining from mined areas? (*Cessnock has a huge problem with acid and saline water leakage from old coal shafts*)
3. What affect will this have on river flow through the Goulburn River Gorges, National Park, local bores, soaks and springs as well as downstream irrigators?

The **cumulative environmental effects** of the three mines on the immediate area and Goulburn River Catchment have not been adequately assessed. They are likely to have ongoing serious and long term impacts on the hydrology (surface & ground water) and contribute to a net loss in biodiversity. The Moolarben Coal Mine also threatens the stability of a culturally and scenically valuable Goulburn River Gorges including The Drip and Corner gorge.

3. Impact on River Gorges by the Moolarben Mine

Predicting surface movements and subsidence resulting from long wall mining is very problematic. Past assumptions as to the behaviour of cliff falls and cracking have been shown to be unreliable³ and at best informed guesswork based on data

³ MSEC comments p. 35 in Moolarben Coal Project Response to Submissions Feb 2007

from other underground mines that differ in depth, width of seam extraction and proximity to river.

The Moolarben Coal Project is proposing to extract a 4.5m band of coal within 450 - 500m of Goulburn Rover gorge. There is a potential 'risk' that cliffs may crack and '*some minor fracturing of the river bed may occur*'⁴. The fragile undercut sandstone formations found along the Goulburn River are vulnerable to even small seismic movements.

4. Biodiversity

Current mine rehabilitation has not adequately restored natural landforms, vegetation communities or quality habitat. There has been an overall net loss of biodiversity, especially on the over cleared valley floor.

The Moolarben Coal proposal to clear 416 hectares of native vegetation has been called in under the Environment Protection and Biodiversity Conservation Act 1999 as a controlled action on the grounds that it may have a significant impact on the critically endangered ecological community (CEEC), White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands (May 2006).

Wilpinjong Mine is currently clearing 47 hectares of this CEEC vegetation also habitat for nationally listed endangered fauna species including Swift Parrot, Superb Parrot and Regent Honeyeater.

5. Greenhouse Gas and impact on Climate Change

If approved the Moolarben Mine Stage one will produce 10 million tonnes of coal per year. On burning this will produce over 27 Million tonnes of greenhouse gases, equal to the entire transport sector in NSW.

Ulan and Wilpinjong Coal Mines combined will be produce over 20 Million tonnes of fossil carbon per year for the next 21 years!

6. Recommendations

- **Independent Regional Water Survey** to determine the full environmental impacts of mining on the groundwater and river system
- **1 kilometre buffer zone** around the Goulburn River gorge area – ie underground mining should not extend under the 'saturated' Triassic rock strata around the river system
- **Moratorium on all new coal** developments considering the link between fossil fuels and global warming. At least until (and if) geosequestration and clean coal technology are proven as a viable commercial alternative
- **Extend National Park** - Leasehold land surrounding the Drip & Goulburn River Gorge should be included into the adjacent Goulburn River National Park

⁴ MSEC comments p.33 A9 in Moolarben CP Response to Submissions Feb 2007