

CENTRAL PLAINS WATER ENHANCEMENT SCHEME

Submission on behalf of Canterbury Coal Limited

AUGUST 2008

Background

1. Canterbury Coal Limited has been mining coal in the Malvern Hills to the west of Coalgate for the past five years, with production to date of approximately 40,000 tonnes of low sulphur industrial coal suitable for boilers and similar plants. In calendar 2008 production is expected to be 25,000 tonnes, rising to 30,000 tonnes per annum in 2009 as demand increases driven primarily by expansion of the dairy industry.
2. Coal mining commenced in the Malvern Hills in 1872, and has continued in relatively small quantities since that time with only a brief cessation in the 1990s. Total coal production in the past 135 years is of the order of 1.3Mt, with the two principal producing mines being the Homebush and Klondyke. Typical mine dimensions are 600-1,000m along strike and 200-400m down dip, with average recovered seam thickness of about 5m.
3. Duff & Barry (1989) estimated an in-ground resource of 520Mt for the Malvern Hills Coalfield, of which they considered about 25Mt to be recoverable and some 1.5-2.0Mt to be opencastable. The present Pit "F" operation has a measured and indicated resource exceeding 200,000 tonnes, with significant potential for additional resources along strike. The company plans to conduct further step-out drilling and trenching in the coming years to extend mine life.
4. Of particular relevance to the proposed Central Plains Water Enhancement Scheme is the fact that the Klondyke Mine developed underground workings extending more than 200m beneath the bed of the reservoir in Bush Gully. This is acknowledged in the URS Geotechnical Report (October 2002), but no comment appears to have been forthcoming about sterilisation of future coal resources by the creation of the reservoir.

Impacts of CPW Scheme

5. It is clear from the details provided in relation to a proposed storage elevation of 280m above sea level that this will A) eliminate the current roading system; B) inundate key facilities such as the engineered Coal Stockpile; C) seriously compromise the ability to mine near the perimeter of the lake; D) prevent access to significant areas of coal resources adjacent to known workings; and E) prevent access to several prospective areas for future exploration.

6. Preliminary discussions have been held with engineering staff representing the Central Plains Water Trust in regard to possible alternative roading to access the coal resource at the present mine site. However, the likely mine life at that location is only a further 3 to 5 years depending on production requirements, and other areas will have been explored and mining scheduled by that time. The proposed reservoir seriously affects the ability of Canterbury Coal Ltd to access its future resources, and to conduct its business.
7. A major area of impact on current and future mining will be in the Bush Gully arm of the reservoir, where the Company operates its Coal Stockpile facility to provide daily load-out of raw product for transfer to the Rolleston processing plant. Costs of relocating the stockpile facility will be approximately \$100,000, without considering the several kilometres of additional roading that will be required for short-term access to the current mine site.
8. The main concern in Bush Gully is, however, the fact that some 600m of strike length linking the former Victory and Klondyke mine sites will be lost under 30m of stored water, rendering exploration and mining impossible. The potential resource to a depth of 50m down-dip in this locality is of the order of 250-300,000 tonnes of coal, with a value of some \$20M in this one section alone. Certainly exploration has yet to be carried out to confirm this resource, but that work has been scheduled in the next 5-year programme.
9. The present opencast mine operations are being held to RL 325m, and all waste from the operations is stored above RL 290m in anticipation that the gully could be filled with stored water. In addition the water treatment process being used involves temporary storage in a settling pond followed by wetland "polishing" in accordance with existing consent conditions. We understand that most of the wetland area will be inundated under the reservoir, effectively compromising the present system at an as yet unknown cost to the Company.
10. Similar issues will exist with other planned mining areas within the reservoir footprint or on its margins, and any such limitations are as yet unknown. We are extremely concerned at the loss of wetland habitat, and the impact this may have on treatment requirements for the mine discharge waters. In effect the uncertainties created by the Central Plains Scheme are substantial, and in our view detrimental to the continued recovery of an important coal resource from the Malvern Hills Coalfield (which is the most significant in Canterbury).

Other Relevant Matters

11. Mining operations to date have identified a number of important geological features that may be relevant to the reservoir and/or proposed embankment dam. A major reverse fault structure trends north-east beneath the proposed reservoir, and the structure may well be active. Whilst rupture beneath stored water may not have serious impacts, we consider that the proposed dam site has not been adequately investigated. Figures 6 and 7 in the October 2002

URS Geotechnical Report appear to be very simplistic based on our mining experience, and much more attention needs to be paid to active tectonics.

12. Whilst not questioning the skills or capabilities of the consultants to the CPW project, it would appear that only minimal investigations have as yet been undertaken for the design of the embankment dam and other geological or geotechnical aspects of the project. It cannot be assumed that reservoir slope instability will not occur, or that the effects of water storage will be minor. Our mining experience has shown that significant thicknesses of weak loessial soils and weathered mudrocks mantle many of the slopes, and that these may become unstable when saturated following reservoir filling.

Conclusions

13. It is our preference that the Central Plains Water Enhancement Scheme not proceed because it will severely compromise the operations of an important coal-mining project that has significant benefits in the wider Canterbury region. We are concerned that the Scheme's proponents do not acknowledge this fact, and the relevance of this vital energy source to their own industry.
14. In the event that consent is granted, in whole or in part, we would urge that the benefits of the current coal-mining in the Malvern Hills be recognised by compensation for lost resources and cost impacts on the present operations. We record that that the loss of coal resources will most probably amount to tens of millions of dollars, and could make future coal mining uneconomic.

On behalf of Canterbury Coal Ltd

DAVID BELL
(Technical Adviser)

KEN SHEARER
(Director - CCL)