ENVIRONMENTAL ASSESSMENT

Duralie Extension Project

ATTACHMENT 3
PEER REVIEW LETTERS

GLOUCESTER COAL

ResourceStrategies

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Review of Duralie Extension project
Groundwater Assessment and Modelling
Dr N Merrick – Heritage Computing
Reviewed by Dr Frans Kalf

Background

I have previously reviewed a third draft of a report dated 16 November 2009 prepared by Heritage Computing and made a number of comments, suggestions and recommendations prior to the preparation of this letter.

The Report Contents

The Merrick report comprises 54 pages of text together with numerous figures. The main section topics include: Introduction, Hydrogeological setting; Conceptual model; Groundwater simulation model; Scenario analysis; Impacts on the groundwater resource; Management and mitigation measures; Model limitations; Conclusions and references.

I have examined only the report provided. The report is well presented and I believe covers the important issues regarding any likely impacts to the groundwater and surface water systems due to additional mining. The report has been completed and presented in professional manner in my opinion.

One aspect that has been highlighted in comments made to the authors is the use of conductance in controlling mine inflow using the MODFLOW drain function. This should be discouraged, as it is not a suitable device for this purpose. However, I have assessed all the results and in my opinion any changes made to this parameter (with a corresponding adjustment of formation permeability or “measured” inflow) would not change the overall conclusions of the report. In particular such changes would not affect the conclusion that the water levels in the river alluvium or leakage from the Mammy Johnson’s River would not be significantly affected.

Conclusion

Based on the evidence presented and the modelling conducted I concur with the report conclusions and management and mitigation measures presented.

F Kalf **B.Sc, M. App. Sc, Ph.D.**

21 November 2009

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11th of November, 2009

To whom it may concern

I was engaged by Resource Strategies Pty Ltd to undertake a peer review of the report prepared by Gillespie Economics titled Duralie Extension Project: Socio-Economic Assessment.

This report details the performance of a very professionally conducted socio-economic study to assess and evaluate the potential impacts of continued coal mining operations on regional and state communities. Key components of the study include a benefit cost analysis, a regional economic impact assessment, and an assessment of potential impacts on employment, population and community infrastructure.

The benefit cost analysis is thorough and appropriate. As normal with these types of applications, the focus is on the most significant impacts, with additional sensitivity testing to check whether there are particular treatments of the data that would lead changed findings. The report is extremely thorough in terms of (a) the attention to identifying and analysing the different impacts that might be involved, (b) the use of benefit transfer to estimate values for key environmental and social impacts and (c) the use of sensitivity analysis to demonstrate that results are robust to a variety of different treatments and underlying assumptions.

The regional economic impact assessment is based on an application of input-output models, which, while not as accurate as general equilibrium models, are suitable for these types of project assessments and form the dominant input into economic impact assessments. The conduct of the input-output modelling is appropriate, and the multipliers that are generated for the regional and state economies are broadly consistent with other similar exercises.

The assessment of the potential impacts on employment, population and community infrastructure is appropriate. Based on the available information, the conclusion that the potential in-migration impacts of the project workforce will be small and are unlikely to have major implications on infrastructure and service needs, is considered to be appropriate.

I provided a number of comments on the draft Socio-Economic Assessment study (Attachment 1). These have subsequently been addressed to my satisfaction in the final report.

Yours sincerely

Dr John Rolfe

R&Z Consulting

Attachment 1

Major comments

1. Page 9 and Table 2.3. I am not convinced about the explanation for including the delayed commissioning costs in the cost benefit analysis. On page 9, the costs of decommissioning are estimated at $2M. These costs would presumably be incurred whenever the mine closure occurs and are therefore included (at a higher cost in the future) in the operating costs? There is a value to delaying any cost into the future, but this is essentially the value of the capital represented by the discount rate, not the actual sum itself. I would think that the net benefits of delaying decommissioning are quite small.

2. Cost benefit analysis – Sensitivity testing in Attachment B. The table headings need to be amended to reflect the fact that the results are presented for the Project Net Present Value. In addition, the second set of tables in the sensitivity analysis are supposed to exclude employment benefits (social values of employment), yet values for this item are still included in the table.

Minor comments

1. Page 1, 6th paragraph, 4th line. Add 'of' after '…into the Project through the purchase'

2. Page 2, 5th paragraph, first dot point. The 3rd sentence in the dot point is not a proper sentence and needs rewording.

3. Page 9, notes to Table 2.2. I'm not sure what 'million bank cubic metres' means, and there is an undefined date.

4. Page 9, 4th paragraph, second sentence. Add 'equipment' after 'For this analysis, capital'

5. Page 19, 3rd paragraph. The single sentence that forms this paragraph is not very well phrased – perhaps replace 'working' with 'level'

6. Appendixes – page footing labels do not match the appendix numbers

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19 November 2009

Tony Dwyer
Manager – Approvals and Environment
Duralie Coal Pty Ltd

Dear Tony

RE: DURALIE EXTENSION PROJECT - REHABILITATION AND LANDSCAPE MANAGEMENT STRATEGY

Resource Strategies Pty Ltd have asked me to peruse Appendix N (Rehabilitation and Landscape Management Strategy) of the document being prepared for Duralie Coal Pty Ltd for a Project Approval. I have been asked to do this on the basis of my 35 years of experience in mine rehabilitation particularly in my capacity as the former Director of the Centre for Mined Land Rehabilitation at the University of Queensland and former Executive Director of the Australian Centre for Minerals Extension and Research (ACMER), a national centre focussing on environmental management in the minerals industry.

I have assessed the section and believe that it effectively covers the key requirements spelt out in the section 75F of the *Environmental Planning and Assessment Act, 1979*.

I have made some comments on the document which are generally of a minor nature, but overall I thought it addressed all of the major issues, was well written and referenced the key published scientific material which will help guide future rehabilitation efforts.

Yours sincerely

Emer Prof L Clive Bell