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Nature Conservation Saves for Tomorrow

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BMCS Response to Coalpac's Evaluation of the Planning Assessment Commission's Review (PAC1) of the Coalpac Consolidation Project (CCP)

1. General comments

The Society and several associated groups and individuals have, partly as a function of their particular areas of expertise and/or concern as affected residents, focused on different aspects of Coalpac's evaluation. It is hoped that, from Planning's viewpoint, the various submissions are treated as complementary and will be assigned 'collective' authority[1].

BMCS is astounded that Coalpac has produced yet another massive set of documents (~60 MB) whereby it aims to gain approval for its marginally altered proposal. Once again the company is using the 'saturation principle' whereby it attempts to drown opposition beneath expert-sounding reports, without in many cases actually dealing with the issues raised by PAC1 and by special interest groups, individuals and government departments in previous submissions to PAC1.

Coalpac was apparently allowed considerable latitude in responding to the PAC review. No doubt this enabled the company to produce the latest version of its consolidation proposal, inevitably accompanied by the numerous consultants' appendices. Were the special interest groups to have equivalent access to funds, they would assuredly be able to engage equally professional consultants who would present opposing opinion using the 'he-who-pays-the-piper' principle. This would unfortunately degenerate into a 'my-consultant-is-better-than-yours' confrontation. At least 'our' largely unpaid volunteers do not end up lining their pockets.

The overall way in which Coalpac has operated raises the question of just how many 'bites of the cherry' Coalpac is it allowed.

Coalpac's first attempt at an Environmental Assessment was rejected by Planning but was refined using input from a range of government departments and special interest groups. The second attempt was massive and was presumably meant to be a professional final document. It too was intensely criticised for deficiencies by government departments, special interest groups and concerned individuals. Coalpac had the opportunity to respond to these aspects and again benefitted by making more (but only slight) adjustments to its proposal. Coalpac gained further benefit by having access to responses to its response to the previous concerns.

All of the above went to PAC1, together with additional submissions presented during the public hearings and subsequently to other issues raised by the PAC. Coalpac has now responded to the PAC1 Review with further refinements of its Project and another load of focused consultant's reports. The Society sees this entire process as one in which Coalpac has engaged in protracted 'trial and error'; or, putting it differently, Coalpac

[1] *This applies but is not restricted to submissions by the Colong Foundation, Lithgow Environment Group, Dr Haydn Washington, Dr Richard Stiles, Mr Ian Brown, Mr Yuri Bolotin, and Ms Eva Rizana.*

and its consultants have seemingly demonstrated a cavalier disregard for environmental, social and heritage issues until forced to respond to detailed criticisms and make marginal concessions.

Surely the aim of the whole process is not and should not be for Coalpac to use government departments, special interest groups and concerned individuals as unpaid advisors, while the company uses its deep pockets to pay professional consultants to attempt to provide focused counter-argument? Conversely, should this whole process reflect government's intentions, it is truly stacked in favour of the company. In real life, David rarely beats Goliath!

In the remainder of the BMCS response to Coalpac's evaluation of the PAC1 Review, reference to the evaluation documents will be as MRP1 or MRP2 (Main Report Part 1 or 2) followed by the page number. Appendices to the Main Report will be referenced as AppA to AppJ (Appendix A through to AppendixJ) again with pagination as necessary.

2. Coalpac's categorization of the 83 PAC1 recommendations

2.1 The immediate context

In relation to the 83 recommendations, it is important to reiterate three points from PAC1:

(a) The project should not be approved because its benefits are substantially outweighed by the breadth and magnitude of its impacts.

(b) The 83 recommendations were prepared as each individual issue was considered and before the decision in item (a) was reached.

(c) The 83 recommendations are minimum requirements prepared in response to the Minister's request for appropriate measures to avoid, minimise and/or offset the identified impacts.

Coalpac's response in MRP1 and 2, and also in AppJ effectively disregards the recommendation in item (a). The whole focus of the response is to deal with the discrete recommendations to a sufficient degree to enable the company to just scrape over the bar. In effect, the company remains unmoved by the very real impacts of its proposal on the residents of Cullen Bullen and on the environment and heritage embodied in Ben Bullen State Forest. It is solely concerned with how it can obtain its profits, thereby happily consigning the region to cumulative irreversible destruction.

2.2 The analysis of recommendations (AppJ)

This is tabulated in AppJ. Categories comprise 'adopted', 'adopted with qualification', 'not adopted' and 'assessment policy issues'. Excluding the 'assessment policy issues', the majority of the recommendations in the other categories are keyed into the Statement of Commitments (SoC) (AppA). This section will mainly consider 'adopted' and 'adopted with qualification' recommendations not covered within the SoC, but will comment on the implications of the other two ('not adopted' and 'assessment policy issues') categories.

2.2.1 'Adopted'

Of the 83 recommendations, approximately 71% are 'adopted' or made redundant by changes to the proposal. This appears to be an impressive level of compliance, but it effectively comprises the 'low-hanging fruit', which are amenable to small changes to the SoC (AppA). Only recommendations 1, 15, 42 and 79 are not dealt with in this way and will be briefly considered.

Recommendation 1: as previously stated in *"BMCS Response to the Planning Assessment Commission's Review (PAC1) of the Coalpac Consolidation Project (CCP): Main Report"* [2] dated February 3, 2013, compliance with Rec 1 is just the starting point, as the whole issue of air-quality impacts would need to be reviewed. Dispersion modelling predictions constitute a static analysis based on the movement of dust. They take no account of individuals differing in their responses to dust as a function of age, general health and 'perception'; that is human variability.

[2] *Henceforth this document will be identified in this submission as BRPACR.*

The Society again sees Coalpac playing the traditional company game. A rigid system dictates how a body of impacted people **should react** to dust-affected air; those whose health is affected must then **prove** that reduced air quality caused their problems. And who has the money to employ consultants to reject the sick person's claim? The company of course!

Recommendation 15: contrary to AppJ which states that this is adopted but not dealt with through a revision of the SoC, it turns out that SoC3 (AppA) has a revision relating to Rec 15. Unfortunately, all it stipulates is that subsidence from highwall mining will be restricted to 20 mm or less. The Society has previously asked why 20 mm of subsidence has no capacity to destabilise a cliff-face or pagoda? **No sensible response has yet been received.**

Recommendation 79: this deals with the new aboriginal cave. Coalpac commits to looking at the cave's significance and stability. The Society believes that this should be done **by consultants nominated by OEH**, rather than by a consultant who has profited handsomely from subcontracting through Hansen Bailey.

2.2.2 'Adopted with qualification'

Of the 83 recommendations, approximately 11% (9 recommendations) are 'adopted with qualification' and only three of the nine are not covered by SoC revisions (AppA); they will be briefly considered

Recommendation 14: this is about keeping cumulative noise below a certain level, particularly in relation to Cullen Bullen School, yet SoC27 (AppA), the commitment to do this, is deleted. Why? BRPACRp3 noted that Coalpac did not address cumulative noise in relation to the School or households. Coalpac's consultant (AppCp10) curiously argues that any noise other than that ascribed to the Project is the responsibility of 'others' and no concern of Coalpac. The lack of logic is mind-boggling. Coalpac wishes to add noise to a pre-existing level of noise; as the 'newcomer' it is Coalpac's contribution which may take the cumulative result over the limiting value. Regardless, PAC1 recommendation 14 is rejected rather than 'adopted with qualification'.

Recommendation 48: the Commissioners were concerned about the uncertainties and caveats in the analysis related to potential damage to pagodas and recommended that they be resolved. BRPACRp6 emphasised that this was not practicable in that *"…with the full cooperation of its expert consultants, the CCP has failed to provide satisfactory information regarding the consequences of its proposed actions."* This assessment is supported by AppHPart1Section2p24, *"…these results and design parameters should be further refined once actual operating experience is gained and geotechnical performance feedback can be achieved"*, and AppHPart1Section3p25 *"This is a very complex geotechnical environment that cannot be fully defined by a generic set of designs and risk assessments…it can only be assessed on a section by section analysis of each mining operation relative to the actual nature of the slopes and rock formations present"*. The consultant considers that it is appropriate to proceed by monitoring and careful risk-management practices, but this disregards the importance of the pagodas and the need to avoid slope instability. BMCS reiterates its position on this matter based on the Precautionary Principle: if the safety of the pagodas and supporting sloped cannot be assured, then the conclusion must surely be that the plans for extraction are unacceptable (see BRPACRp6).

It would again appear that 'adopted with qualification' effectively means 'continue as before' because a consultant has said that this is the only practicable way to exploit the coal; the end justifies the means! Recommendation 48 is effectively rejected.

Recommendation 51: the concern is that edge effects should be determined to the satisfaction of OEH. If 'adopt with qualification' runs true to form, this means that Coalpac has found a consultant who disputes the data provided by OEH. The Society places more faith in a government department, than in a highly rewarded consultant.

2.2.3 'Assessment policy issues'

Of the 83 recommendations, approximately 13% (11 recommendations) are 'assessment policy issues'; unsurprisingly, none are covered by SoC revisions (AppA).

The issues embodied in these 11 recommendations are ones Coalpac has elected to avoid because they deal with cumulative aspects, or because the pertinent consultant says that the methodology complies with 'best practice', in some cases this being as stipulated by government. Nevertheless, PAC1 determined that they do

have pertinence to any approval of the project and clearly believes that, in relation to certain matters, current assessment methodology is deficient.

BMCS believes that society's values are changing and what was once permitted is no longer acceptable. In the context of Coalpac's proposal, in which short-term profits are set against more sustainable alternatives from environmental, social and economic viewpoints, Coalpac is prepared to apply methodologies (despite deficiencies) which achieves the 'right' outcome. A social conscience is not a major component of this company's thinking!

Recommendations 2, 3 and 12: these relate to air quality aspects. BRPACRSection2.2pp2-3 expressed concern about: (i) the lack of consideration of cumulative factors, (ii) neglecting the health warnings relating to PM_{10} and $PM_{2.5}$ particles (*"…there is no 'safe' level of PM_{10} and there is a linear relationship between the increase in PM_{10} exposure and increases in mortality and morbidity"*), and (iii) the dubious value of Real Time Air Quality Management Systems (RTAQMS) in controlling emissions from open-cut mines, particularly as applied to Cullen Bullen School. BMCS again notes that the approach whereby labour and small communities were exploited and then abandoned when too sick to work is a left-over from the Victorian period, even though prevalent in more recent times.

Recommendations 13, 27, 31 and 40: these are a continuation of the PAC's concern over procedures for evaluating noise (including blasting) and air quality impacts. BRPACRSection3.1p3 noted that it was irrational for the noise-level amenity of a rural community to be set significantly higher than the existing (so-called background) noise profile. It was also noted that procedures adopted to evaluate air quality and noise impacts were devised by government departments usually in consultation with companies and their consultants, typically with little input from the affected communities or environmental groups.

***Recommendations* 52-55:**
Rec 52 introduces the cumulative biodiversity impacts of existing and proposed open-cut developments. BMCS stated (BRPACRSection5.2p7) *"…the impacts of open-cut coal developments along the western escarpment of the Blue Mountains should be treated as a cumulative issue. The alternative whereby each development is treated as a discrete project comprises environmental desecration by a 'thousand cuts'."* BMCS also pointed out that cumulative impacts are synergistic in that the addition of a new mine or expansion of an existing mine disproportionately enhances adverse impacts; the cumulative effect exceeds the sum of its parts. **None of this has been addressed by Coalpac** beyond the implication that this is not the company's concern; **it most certainly should be for the company and for Planning!**

Recs 53 and 54 deal with the role of rehabilitation as a mitigation strategy and emphasise its lack of credibility**. Coalpac lacks evidence to dispute these recommendations** and therefore deems them assessment issues.

2.2.4 'Not adopted'

Of the 83 recommendations, approximately 4% (3 recommendations) are 'not adopted'; two of the three are covered by SoC revisions (AppA). The very low 'not adopted' percentage presents a misleading impression of Coalpac's level of compliance. Even allowing that the 'adopted' category is correctly portrayed, the remaining three categories effectively mean Coalpac is rejecting (or 'disowning') approximately 29% of the PAC1 recommendations.

As recommendations 36, 38 and 47 involve highly contentious issues, they will be covered elsewhere.

2.3 Conclusions

(a) Coalpac clearly rejects the PAC1 recommendation that the proposal not be approved [see 2.1(a) above], as testified by the amount of money paid to consultants to respond to the PAC1 Review.

(b) Coalpac seemingly rejects a significant percentage of the 83 minimum requirements prepared in response to the Minister's request for appropriate measures to avoid, minimise and/or offset the identified impacts [see 2.1(c) above].

(c) In the face of such intransigence, it would surely be inappropriate for either the Department of Planning to recommend approval of this intensely destructive proposal, or PAC2 to grant approval.

3. Coalpac's contracted proposal

As may be deduced from Section 2 (above), the changes in the contracted project, which actually constitutes an amended proposal, are singularly unimpressive. The enormous scale of the impacts is little diminished; the impacts on biodiversity remain; the capacity to rehabilitate damage continues to be ill-founded; the rejection of responsibility for contributing to and furthering the possibility of cumulative regional impacts is unacceptable; the principal reasons for disregarding the biodiversity offset strategy (BOS) remain; the protection of pagodas and cliff lines is inadequate; and the residents of Cullen Bullen will have their health and overall amenity sacrificed on the altar of Coalpac's profits.

3.1 'Project' background – MRP1Section1.1pp2-5

Coalpac recognises that its current operations principally impact on Ben Bullen State Forest and emphasises its role in progressive rehabilitation, even though the latter is a travesty of what was once there. Some of the environmental costs arising from current exploitation and future-development workings are said (p2) to reduce the environmental cost of the Coalpac proposal, as compared with an entirely new development. This is amusingly specious: we've commenced trashing the area, so please let us continue because the proposal will now have a lower environmental cost!

On p4, Coalpac emphasises the importance of a local coal supply to the development of power stations in the region. This is correct, but it is also true that **underground** (not open-cut) mining at Angus Place and Springvale Collieries supplied virtually all of Delta's needs once Wallerawang Units 7 & 8 and Mt Piper Power Station started up; Cullen Valley and Enhance Place Mines only started supplying Delta in 1998, while supply from Pine Dale began around 2006[3]. Coalpac's open-cut coal supply is less important (other than to Coalpac!) than it apparently believes.

It is also claimed (p4) that the closure of several mines (including Airly Mine which is on care and maintenance) increases the importance of Coalpac. While this is a truism, Airly Mine could meet some of Delta's needs and, more importantly, Centennial states that *"…its existing operations at Springvale and angus place, with a currently approved capacity of 6.4 MTpa, is well positioned to supply coal to both Wallerawang and Mount Piper power Stations."*[4] Again, Coalpac's coal is less important (other than to Coalpac!) than it apparently believes.

The statement (p4) that other proposed coal mining developments in the vicinity of Coalpac's existing operations may not proceed is correct. However, Pine Dale is now owned by Energy Australia (previously known as TruEnergy)[5], which suggests that, if Coalpac is approved, every effort will be made to gain approval for the Yarraboldy Stage 2 Extension.

Treasury is entitled to its views (p4) that Centennial *"…could push up offer prices for coal supply to the Mt Piper and Wallerawang stations and reduce the volumes on offer"*, and that consumers *"…will benefit from any reduction in electricity prices that is a consequence of Coalpac's supplying Delta Electricity."* BMCS is very conscious of the use of 'could' and the corollary that it 'need not'. BMCS also notes that any benefit from Coalpac's cheap coal will be minute and unlikely to reach the consumer.

Delays in the determination of the Coalpac proposal are said to be responsible for job losses (p5); this is milked for all it is worth! BMCS notes that Coalpac's inadequate Preliminary EA resulted in a rejection by Planning – this is Coalpac's fault. Likewise, the protracted preparation of the 'final' EA and the additional modifications in the response to the PAC1 Review, have all resulted in delays which are of Coalpac's doing. Furthermore, the scaling back of production and closing of Cullen Valley Mine, surely reflects the miscalculations made by Coalpac's owners and consultants. Government controls such things as exhibition

[3] *Details provided by Chris Jonkers of the Lithgow Environment Group by email dated 08/11/2012.*
[4] *Letter dated 25 January 2013 to DoPI (David Kitto) from Steve Burgess, General Manager-Projects and Engineering, Centennial Coal*
[5] *This took place on June 1, 2012; reported in the Draft minutes, Pine Dale CCC Meeting, 7 August 2012.pdf*

periods allocated for response by community and special interest groups; it does not control the time taken for Coalpac to come back with substantially modified documents.

3.2 Context of the contracted proposal – MRP1Section2.1pp9-10

The response by Coalpac is stipulated as (p9): (i) a positive response to PAC1's findings through a 'Contracted Project'; (ii) rejection of PAC1's decision that the Project 'not be approved' because PAC1 was misguided over how it should have conducted the review under the EP&A Act; and (iii) the PAC's [incorrect?] assessment of geological and ecological conservation values (particularly in the pagoda areas), apparently coupled with Coalpac's contention that no NSW Government policy or decision has been adopted or proposed to conserve the BBSF as a State Conservation Area (SCA).

The above will be more fully evaluated in other sections of the present submission. BMCS now emphasises the following:

(a) This is neither the first review by the Planning Assessment Commission, nor the first one undertaken by the particular Commissioners. It beggars belief that the process was inadequately conducted and so misguided as to invalidate its overriding conclusion.

(b) The Contracted Project is far from a positive response; Coalpac either had to abandon the proposal entirely, or make token modifications and discredit the PAC1 review and its recommendations; the latter strategy has obviously been selected.

(c) Coalpac's actual response (see Section 2 above) has been to adopt ~71% of the PAC1 recommended **minimum** requirements (largely embracing the 'low-hanging fruit'), and to varying degrees reject the remaining 29% which involve most of the contentious high-impact issues.

(d) A long term commitment to the reservation of the Ben Bullen State Forest as an SCA by DECC, OEH and Environment Ministers past and present is provided below[6]:

- *"Underground coal mining…will continue under these forests* [Ben Bullen and Wolgan SF] *making the SCA category the appropriate reserve category…"* and *"DEC will explore the possibility of reservation of Ben Bullen and Wolgan State Forests with State Forests and DPI (Minerals) in the medium term."*[7]
- *"Since 2006, the NSW Department of Environment, Climate Change and Water is exploring the possibility of reservation of Ben Bullen State Forest with the Department of Industry and Investment"*[8,9]
- *"Following the reservation of Mount Airly, the next priority will be the Ben Bullen/Wolgan State Forests"*[10]
- *"…the Department has demonstrated its conservation commitment to this area, while recognising existing mining interests. The planning process applied to Mugii Murum-ban SCA will provide a model for further cooperation with the Department of Trade and Investment, Regional Infrastructure and Services, colliery owners, and relevant stakeholders, for reservation of Ben Bullen/Wolgan State Forests, which includes the northern part of the Baal Bone Colliery lease."*[11]
- *"I have asked the Office of Environment and Heritage to actively investigate the Gardens of Stone Stage 2 Proposal and to examine options for maximising conservation outcomes. To this end, OEH*

[6] *Information from Keith Muir, Director of The Colong Foundation , by email 14 March 2013*
[7] *Assessment Report, Gardens of Stone Stage Two Proposal – State Conservation Areas and Park Extensions, August 2006, DEC, 30 pp.*
[8] *The Hon Bob Debus in Ministerial correspondence to the Colong Foundation, 24 Aug 2006 .*
[9] *Frank Sartor's office in Ministerial correspondence with the Nature Conservation Council of NSW, 13 Aug, 2010.*
[10] *Minister Frank Sartor in correspondence to the Colong Foundation,16 February 2011.*
[11] *A Henchman, Director, Metropolitan Parks and Wildlife in correspondence to the Colong Foundation, 7 May 2011.*

will initiate discussions with other Government land use agencies over the Ben Bullen and Wolgan State Forests section of the proposal."[12]

3.3 The contracted proposal – MRP2Section2pp21-26

Much of what is summarised in MRP2Section2 is condensed from MRP2Section3 and in turn condensed from the work of the consultants', all of whom have obediently carried out the bidding of Hansen-Bailey on behalf of Coalpac. To avoid becoming bogged down in this incestuous repetition which, in objective terms, could learn much from the even-handed approach of the PAC1 Review, the Society will summarise what is claimed and make summary comments. Any debate will be restricted to the consideration of MRP2Section3 and its various appendices.

3.3.1 Removal of Hillcroft mining area – MRP2Section2.2.1p21

Claimed: the removal of Hillcroft reduces the total area of disturbance by approximately 107 ha and thereby reduces dust generation, noise emissions and ecological impacts. Deletion of associated access works eliminates the anticipated traffic problems. Seventy-four ha of habitat for the Capertee Stringybark (Vulnerable under the EPBC Act and TSC Act) are avoided

The amount of coal is reduced by 2.9 ROM Mt and there is a further highwall mining reserve loss of approximately 0.8 ROM Mt

Comment: the area reduction inevitably has some bearing on dust, noise and ecological impacts. However, it is meaningless to look at this as a linear function of area reduction.

The area is isolated to the west of the Wallerawang-Gwabegar Railway and in the order of 3+ km north-west of Cullen Bullen. As the prevailing winds are from the north-east and southwest at different times of the year, there is likely to be negligible benefit to Cullen Bullen and its school in respect of both reduced dust and noise. BMCS would welcome at least a 3 km buffer zone all around Cullen Bullen.

Preserving any amount of Capertee Stringybark is welcomed because so much has already been destroyed for open-cut purposes!

The loss of coal may be of concern to Coalpac but not to the Society. The dimension of Coalpac's 'sacrifice' is minuscule in terms of the total proposed tonnage and the damage to be inflicted on the people of Cullen Bullen and the BBSF.

As BMCS considers the whole BOS an amoral strategy, changes to it have no relevance.

3.3.2 Removal of sand extraction – MRP2Section2.2.2pp21-22

Claimed: removal of truck movements on the GWH, noise and air quality improvements linked to infrastructure and haulage, avoidance of the associated AMD and reduction (up to 3 ML/yr) of water usage during sand extraction, and reduction of Scope 1 GHG emissions linked to the sand extraction.

Comment: this was a ludicrous sub-economic proposition which should never have been included in the Preliminary EA, let alone the 'final' EA. It was, and still is, a testimony to the company's endeavour to add some attraction to exploiting poor quality coal resources in an environmentally sensitive area in the least bit attractive to a potential buyer.

BMCS contends that, other than as window dressing, the proposal only had 'relinquishment value'. Claims made about air quality and noise are small and inconsequential; this is particularly so when the location of the activity is separated from Cullen Bullen by Tyldesley Hill .

3.3.3 Reduction of the CV mining area– MRP2Section2.2.3p22

Claimed: avoiding 3.28 ha of Clandulla Geebung habitat containing 320 known plants and thereby sacrificing 0.6 Mt ROM coal

[12] *Minister Robyn Parker, in correspondence to the Colong Foundation, 2 August 2011.*

Comment: this is a superficially positive outcome because it leaves this ecologically valuable area as an isolated remnant. From BMCS' viewpoint, the 'lost' coal is a very small price to pay for a less than satisfactory result.

3.3.4 Modification to Open-cut footprint for SPL – MRP2Section2.2.4pp22-24

The pagoda habitat is re-defined as a Significant Pagoda Landform (SPL); pagoda habitat not conforming to the restrictive definition is called 'Sandstone Outcrops'. This approach is rejected by Dr Washington[13] and Mr Keith Muir[14], both of whom have extensive knowledge of these landforms. Furthermore, as a geologist with over 50 years of experience, I [BM] reject attempts to place artificial size-constraints on a landform and its associated ecology evolved through the long-term interaction of rock-types and changing climates at significant elevations.

The revised definition facilitates rejection of two PAC1 recommendations (p23) and is the basis for a less than satisfactory protection of pagoda habitat.

Claimed: the so-called "*pagoda-dependent*" flora and fauna are not restricted to pagoda landform habitats, while species with such a distribution are generally found outside the areas proposed for mining.

The predicted effects of mining on three threatened fauna species (the Broad-headed Snake – BHS, Brush-tailed Rock Wallaby – BRW, Cave Roosting Bats – CRB) are negligible. A 300 m buffer would not provide effective protection as the BHS and BRW (as well as suitable habitat) do not occur within the Project Boundary, while habitat for CRB is widespread within the Gardens of Stone and Blue Mountains National Parks.

Some Potential foraging habitat of pagoda-associated animal species will be excluded from open-cut mining adjacent to the SPLs. This reduces the open cut by 9 ha and also reduces edge effects. It sacrifices 2.1 Mt of ROM coal.

Comment: the SPL categorization is rejected *per se*. The above claim about pagoda-dependent flora and fauna is ridiculous for four reasons: (i) 'dependent' does not mean species are totally restricted, but it does mean that the habitat is preferred; (ii) flora are more likely to be restricted than mobile fauna, so referring to them conjointly is effectively dealing with 'chalk' and 'cheese'; (iii) although some of the species may 'generally' exist outside the areas proposed for mining, this does not, of course, preclude more mobile species from 'transgressing'; (iv) having re-defined 'pagoda habitat', it is less than clear why the terms you elected to use have been avoided – could it be because the pagoda habitat and its associated species extend well beyond the SPLs?

The statement about the BHS distribution is rejected by Keith Muir (footnote 14) and Mr Ian Brown in his personal submission to Planning.

The snippets of open-cut loss shown in MRP1Fig.5 and MRP2Fig.8 are welcome but are far too conservative. The minimal coal-loss of 2.1 Mt is fully justified.

3.3.5 Modification to highwall mining footprint – MRP2Section2.2.5p25

Claimed: the highwall mining has been removed from under the SPL; there are no scientific grounds for this relating to geotechnical or ecological impact.

Changes to highwall mining design and methods to protect sensitive features are not warranted in the remaining areas. There will be no noticeable impact to any surface feature. This applies to the extended highwall-mining footprint for the contracted proposal.

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[13] *Washington H, Comments on the Hansen Bailey report for Coalpac 'Response to PAC Review Report', with a special focus on the 'Significant Pagoda Landform', submitted to the Department of Planning and Infrastructure, 20 March, 2013.*

[14] *Muir K, Colong Foundation response to the Coalpac submission in reply to the PAC review report and recommended refusal of the proposed Consolidation Project for an open-cut coal mine in Ben Bullen State Forest, submitted to the Department of Planning and Infrastructure, 26 March, 2013.*

Comment: the total removal of highwall mining in the SPL is welcomed. However, BMCS disputes the statement that there are no scientific grounds for an adverse impact. Up to 20 mm of subsidence is anticipated by Coalpac's consultants, provided that the particular seam has a constant thickness, the orientation and distribution of the rock structures are consistent, and the degree of saturation is known, and the highwall miner in no way deviates such that the pillar-widths are constant. Such a movement is perfectly able to induce toppling and other forms of failure within relatively unstable parts of the pagodas and associated cliff lines. The heterogeneity of the system must be factored in[15].

MRP1Figs.4 and 6 show the distribution of the Contracted Project (CP) highwall mining. There are clear examples of 'highwalling' being close to (<310 m) and even crossing substantial sandstone cliff lines capped with pagodas. This is unacceptable; the claim that changes are not warranted is rejected. Likewise, the claim that there will be no noticeable impact is not worth the paper it is printed on. Oops! There goes another one; I am sure a consultant can be found to ascribe the failure to natural processes.

3.3.6 Blast Management for SPLs & Sandstone Outcrops – MRP2Section2.2.6p25

Claimed: a carefully managed staged progression of open cut mining can be implemented **within** the blasting buffer zone recommended in PAC1 without causing problems.

Comment: the consequences of allowing this will be unreported damage which will be deemed 'negligible'. As has been found elsewhere in the coalfield, something has to be catastrophic before it is reported and finally acknowledged. Muir[16] summarises the problems associated with monitoring and risk management systems. Also, as recently remarked[17]: *"Big business pushes ahead with over-confident assurances, while the onus is on inadequately-funded research organizations and negligibly-funded environmental and community groups to prove otherwise."*

3.3.7 Revision to the BOS – MRP2Section2.2.7pp25-26

Claimed: further discussions with OEH have produced an improved BOS, but little detail beyond an indication of what is being attempted is provided other than in section 3.5 and the supersized Appendix E.
Comment: BMCS is totally opposed to this system as previously stated[18]:
"The CCP relies heavily on its potential dollar-value to sway the determinations of government and…invokes the practice of a biodiversity offsets package to enhance its case for approval. The Society insists that such a package is ethically, morally and scientifically unconscionable. Species and communities are listed as threatened (critically endangered, endangered, vulnerable) to prevent further declines in the populations and/or the type of habitat. Destroying threatened species and communities in exchange for other areas which may/may not have those species or communities, may/may not require rehabilitation, and may/may not be available would be a farce. In simple terms, if you have 10 occurrences and destroy 2 you have only 8 left!"

4. Critical assessment of the contracted proposal

This will focus on MRP2Section3 and relevant appendices.

The Society notes that much will be repetitious because the consultants continue to use programs which draw noise and air quality contours on map, or show that the FOS is more than adequate, or show that there will be no damage inflicted. Yet they fail to recognise that humans are not sessile and differ in their responses to imposed stresses, and that natural rock systems have heterogeneous mechanical properties.

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[15] *Dr Marshall bases this assessment on an extensive experience of rock-system behaviour. He has a PhD in Structural and Metamorphic Geology with over 50 years' professional employment in industry and university. This has included lecturing and consulting in Engineering Geology, and Rock and Soil Mechanics (now collectively termed Geotechnics).*
[16] *Muir K, Colong Foundation response to the Coalpac submission in reply to the PAC review report and recommended refusal of the proposed Consolidation Project for an open-cut coal mine in Ben Bullen State Forest, submitted to the Department of Planning and Infrastructure, 26 March, 2013.*
[17] *Marshall B, Time for a gas, BMCS Hut News, No 301, March 2013, pp6-7.*
[18] *Marshall B, CoalpacResponseToSubm'ns_BMCSComments_120820.pdf; submitted to Department of Planning and Infrastructure, 20 August, 2012.*

4.1 Air Quality – MRP2Section3pp28-33 and AppB

Without wishing to be too derogatory, Pacific Environment Limited (PEL) has been asked to affirm that the previous work done for the EA by PAEHolmes which became part of PEL in 2012 (see AppBSection2). PEL is hardly likely to be critical!

4.1.1 Assessment methodology – MRP2Section3.2.1 and AppBSection3-4

PEL is preeminent in its field and lists over 40 consulting jobs for the mining industry. It looks impressive and clearly demonstrates that the work uses the methodology and forms of presentation which satisfy the coal-mining industry and as, in theory, dictated by government. However, the Society suggests that this stems from the methodology being driven by companies in conjunction with government, without sufficient input from community and special interest groups. This leads to 'best practice' becoming what is acceptable to the mining companies, rather than what is best for the affected communities.

BMCS continues to have concerns as follows:

- The criteria accepted for the coal industry are set down in AppBSection3p5. They exclude $PM_{2.5}$ data. Although the conventional wisdom suggests that $PM_{2.5}$ is less critical for coal-mining, understanding the significance of the $PM_{2.5}$ fraction is increasing and this alone justifies its inclusion. Why is it omitted? Because it is **not current practice**! Why isn't the practice being changed? Why should people suffer because companies and governments wish to exploit a resource without adequately safeguarding the affected residents and workers? The usual answer is that the research hasn't been done and/or the jury is still out. But isn't that why the Precautionary Principle should be applied?
- Despite all the assurances that best practice has been used in accordance with DGRs and regulatory guidelines, there remains no recognition in the interpretation **that isopleths are not carved in stone**. They are simply lines drawn on a map representing average values for various time-frames at certain stages during the proposed evolution of the mine. They represent the predictions of an atmospheric dispersion model which happens to be the best that can be done with a range of input-assumptions. No-one can measure the reality of the mine when it is in full swing at the height of summer on a windy day, because it doesn't yet exist (and hopefully never will); but the company and its consultant treat the results as if they are fire-proof[19].
- Much is said about PAC1's misunderstanding about relying on the predictive dust management system to achieve the predicted ground level concentrations. There is no doubt that the predictive and reactive measures play no **direct** part in the predicted concentrations, or that their failure might **directly** result in exceedances. Nevertheless, PAC1 correctly recognises that predictions based on computer modelling are not absolute – they are only numbers. Should those predictions be less than perfect over the mine-life, the other measures would most certainly be (MRP2p30) *"…an additional safeguard that may be applied to operational dust management…and will act to further compliment and augment dust controls and reduce potential off site effects."*
- Much is said about NSW Health and the WHO guideline of an annual average PM_{10} of $20\mu g/m^3$ as applied to populations with social and health disabilities (MRP2p31). The interpretation provided is that every $10\mu g/m^3$ increase in annual average PM_{10} is equivalent to a 3% increase in the long-term mortality risk. However, NSW Health also indicated that there is no such thing as a safe level of PM_{10} inhalation. In this respect it is like asbestos. Regardless of this, Coalpac proudly claims that under its CP Cullen Bullen will experience less than $20\mu g/m^3$. Doesn't Coalpac understand what 'no safe level' means? Doesn't Coalpac understand what average means?
- The obsession with numerical values, isopleths and guidelines in relation to predictive models only benefits companies. BMCS again asks what is magical about $30\mu g/m^3$ or $20\mu g/m^3$? Is $19\mu g/m^3$ healthy whereas at $21\mu g/m^3$ one makes a will? And despite averaging $30\mu g/m^3$, just how many times is one allowed to experience $40\mu g/m^3$, in that the frequency of exposure must surely be important? None of this

[19] *The society appreciates that this is what an AQMP is about and why there is emphasis on Real Time Air Quality Management Systems, Pollution Reduction Programs and the like.*

is really addressed because it is not specified. This is despite the fact that humans do vary in terms of susceptibility and some will leave their sub-30μg/m^3 homes in Cullen Bullen to work in the supra-30μg/m^3 mine environment.

- As above in Section 2.2.3 'Assessment policy issues', Rec 52-55, the cumulative effects of 'future developments' are avoided. Specific mine plans for Pine Dale Stage 2 Extension and Neubeck Coal Project are not publically available, so an assessment of their impacts is not practicable. Also (MRP2p28): *"…consistent with current Government Policy, the acceptability of the cumulative impacts from these developments (if progressed) would be assessed…at that time."* In adopting this approach, Coalpac is totally rejecting the concerns in PAC1Executive Summary piv and on pp34-35.

4.1.2 Air quality assessment of the contracted proposal – MRP2Section3.2.2 and AppBSections5-6

AppBSection5.1pp7-8: when site-specific data are not available a level of conservatism is adopted. The EPA drew attention to this and asked that site specific data be employed. Measurements were taken at the current mining operations at Cullen Valley Mine and Invincible Colliery. These new data, together with the changes to the EA embodied in the contracted proposal (AppBp10), showed that the original EA was conservative. AppBSection6Tables 7-10 and Figures 2-4 confirm the substantially lower impacts from the contracted proposal, at least as presented for year 2 of the mining operation.

Only air quality impacts for year 2 were remodelled. This is said to represent the worst-case impacts and best reflect the changes in the contracted proposal (CP) mine plan. This would seem to imply that the degree of conservatism arising from the CP changes will be less marked in the other 19 years of operation than is revealed for year 2. **This matter requires clarification**.

BMCS has several other concerns:

- The matters outlined in the square-points in Section 4.2.1 above are generally applicable. It is too easy to produce reams of numerical data and isopleths and treat them as absolute. Were all people equally affected by pollen, all or none would experience hay-fever when surrounded by flowering mimosa in a given area. It isn't that simple!
- It is not possible to determine from the information provided, how much of the reduced impact is attributable to the site-specific data as opposed to the contract-proposal changes (see AppBp10). This information should be clearly stated in the reports.
- Beyond the site-specific data being acquired at the two operating coal mines, no additional information is provided. As with all modelling, the nature of the inputs have vast bearing on the outputs – or more simply 'gi-go' (garbage in-garbage out).
- It is clear from Figures 2 and 3 (AppBSection6) that the EA and CP isopleths respectively pass through or close to (within 200-250 m) Cullen Bullen. The threat to Cullen Bullen may be reduced, taking the data at face value, but it still very much exists.

In summary, the consultants have done their jobs and Coalpac is confident, but the real question BMCS would put to the consultants is would you be happy to live for the next 20 years in or close to Cullen Bullen and send your children to the local school?

4.2 Noise – MRP2Section3.3pp33-38 and AppC

4.2.1 Assessment methodology review – MRP2pp33-35

The consultant believes that the previous study in the EA was carried out according to the relevant NSW Industrial Noise Policy (INP).

BMCS feels that it is irrational for the noise-level amenity of a rural community to be set higher than the existing (so-called background) noise profile. PAC1 (p44) similarly found that for a population in rural residential settings the current practice of setting the minimum background level at 30dBA is inequitable.

It seems that the INP has a general principle of setting noise criteria 5 dBA above the background. This is considered a **reasonable compromise** between the needs of an industrial development and the amenity of the

surrounding community. In very quiet areas with low background noise levels, the INP recommends a minimum background noise level of 30 dBA which results in a minimum noise criterion of 35 dBA outside a residence**. T**he recommended minimum background noise level of 30 dBA adopted in the EA and the contracted proposal is consistent with the relevant Australian Standard and NSW Government policy.

BMCS again emphasises that many of the policies and procedures adopted to evaluate noise impacts were devised by government departments usually in consultation with companies and their consultants; and where these 'standards' are consistent with practices in other states and overseas, it is probable that they too reflect similar levels of 'consultation'. Input was not usually sought from the affected communities or from environmental groups. This is why the focus is typically on modelling rather than behavioural science and human variability. The system suits the mining companies.

Matters still of concern to BMCS and not apparently answered by Coalpac are:

- PAC1 Rec 29 is concerned with exceedances (see AppCp17). The response from Coalpac in terms of its Statement of Commitments would be to report exceedances in the Annual Environmental Management Report. This is not satisfactory. BMCS believes that exceedances have already adversely impacted residents and others: (i) annual reporting is totally inadequate – by the time the report comes out and anyone has the chance to evaluate it, the lag time could be as much as 18 months, so if adequate remedial steps have not been taken, the company gets away with 'murder'; (ii) why did the exceedances take place and what action is being implemented to ensure that there is no repetition – this effectively refers back to item(i); and (iii) what penalties will be applied? Small financial penalties have negligible deterrence value, so the Society believes that for each exceedance the company must directly compensate those affected, and an equivalent total sum be committed to pertinent research.
- The acoustic report makes no mention of infrasound. There is anecdotal evidence and some scientific support for the health and structural implications of very low frequency noise/subsonic vibrations. In view of the size and complexity of mining machinery and transport options associated with the original CCP and now the CP. BMCS believes that this matter should be addressed.

4.2.2 Assessment of the CP – MRP2pp35-39

The CP mainly differs from the EA in year 2, so changes in calculated noise levels would occur primarily in year 2 with little change to noise levels in the other 19 years of operation. When examined in the Tables 1and 2 (AppCpp6-8), there seems to a few less properties affected by the CP, but the differences are really quite small. This differs considerably from the claims made in MRP2p39 of reductions of **up to 25%** for the Significant impact category and **up to 33%** for the Moderate and Mild impact categories. BMCS has placed emphasis on **'up to'** because the vast majority of the differences are of lesser magnitude.

The overall result is not particularly surprising because the main noise from Hillcroft and the sand workings would have been separated from Cullen Bullen by Tyldesley Hill. What sound wasn't reaching Cullen Bullen when Hillcroft and the sand mining were meant to be operational, certainly wouldn't change under the CP.

4.3 Blasting – MRP2Section3.4pp39-43 and AppD1-2

4.3.1 Summary of claims and Terrock's proposal.

The report by Terrock (AppD1-2) is a classical response by and engineer to a blast-related problem. It effectively ignores the concept of applying the Precautionary Principle by using a substantial buffer, and places all the risk on the pagoda landform systems (the SPL and Sandstone Outcrops).

Terrock considers that (AppD1Executive Summary and AppD2Section6.1):

- blasting closer than 100m to Sandstone Outcrops can occur without detrimental impacts;
- a PPV limit is preferred to a stand-off distance for protecting the SPL and Sandstone Outcrops;
- ground vibration can be controlled to a specified target level by using environmental blast design techniques;
- at least two substantial field investigations of rock-mass behaviour, and one field and laboratory investigation of rock-substance and rock-mass behaviour are needed to determine the behaviour of the

various coal and inter-burden layers and to ascertain the appropriateness of a 100 mm/s non-damaging limit for SPL and Sandstone Outcrops;
- because the investigations will be progressive and concurrent with mining an interim vibration limit at the base of the Sandstone Outcrop of, say 50 mm/s, could be employed.

Hansen Bailey indicates that (MRP2Section3.4.2pp42-43):
- until the investigations of rock-mass and -substance behaviour have been completed mining will not approach within 200 m of the SPL and Sandstone Outcrops – that is a 200 m stand-off will be observed;
- hazard mapping will establish the condition of the SPL and Sandstone Outcrops;
- before approaching the SPL, geophones will be installed at the nearest point to the blasting face at the top and bottom of the pagodas and photogrammetric techniques will be employed;

In relation to housing in Cullen Bullen, Terrock states (AppD1Executive Summary):
- currently approved overpressure limits can be complied with at all houses in the Cullen Bullen township without any additional control measures (AppD1Figs.6b and Fig.7c and MRPD1Table1p6);
- the ANZEC guidelines (AppD2p27) can be complied with at the houses within the Cullen Bullen township (AppD1Fig.6a and AppD2Fig.8c) – blasts from other sites within the planned extraction will result in similar or lower vibration levels, but further north at the proposed Cullen Valley open cut, it may be necessary to reduce the charge mass to achieve the 5 mm/s limits at the residences close to the highway.

4.3.2 BMCS' concerns

Past blasting

(a) Railway cutting – Terrock states that in relation to blasting near (~45 m) a railway cutting in softer Permian strata, a maximum vibration (93 mm/s) caused no structural damage to the rail line or cutting walls, although a small number of loose shale were displaced and fell to the cutting floor (AppD1Section3.1pp11-12).

BMCS notes that examples exist in which the PPVs for railway lines and rail cuttings and embankments are 100 mm/s and 200 m/s respectively (AppD1Section2.2Table5), although the NSW DP&I adopts a blast vibration criterion of 50 mm/s for all public infrastructure. The lack of serious damage in the cutting is perhaps not surprising.

BMCS finds it difficult to further assess this because there is no report of the condition either before or after the blast, the state of weathering is unknown, and the cutting (about 9 m deep on the high side – also the blast side) has a 70^{o} batter and lacks signs of instability in the photo graph.

(b) Near the SPL and Sandstone Outcrops (AppD1Section3.1pp12) – in Cullen Valley sites at a distance of 57 m the predicted PPV of 185-213 mm/s had no discernible impact – in Invincible over 203-245 m the predicted PPV was only 16.4-24.3 mm/s.

These are relatively young blasts (2009- 2012), but before and after data are not provided or not known; 'no discernible impact' could be taken as nothing large and obvious.

(c) Near the Invincible Colliery office – the effects of close-order blasts in 2012 on the Invincible Colliery administration block (30 year old, brick-veneered and glazed structure)were investigated (AppD1Section3.3pp16-17). Blasting to within 43m of the Invincible Colliery office resulted in a PPV of 17.7 mm/s. The highest PPV was 32.3 mm/s recorded at 66m from a blast. There was no discernible damage to occurring to the office complex, furniture or electronic equipment.

Terrock sees implications in this for blasting near the SPL and Sandstone Outcrops. The Society does not! The mass and substance properties of the office block bear little relationship pagoda systems.

BMCS is unable to evaluate the data in terms of their implications, because none of the blasting seemed to have been designed as a proper field investigation in which there was careful before and after mapping and a photographic record. Furthermore, little effort has been made to show that the properties of the systems in which there was 'discernible impact' are equivalent to those forming the SPL. BMCS believes that this body of work is a poor basis for rejecting a formal stand-off.

Ground vibration limits for avoiding damage

Terrock (AppD2Section6.1.2) implies that a non-damaging limit of 100 mm/s might be appropriate for SPL and Sandstone Outcrops, although recognising that further work is needed to ascertain the actual non-damaging limit.

If the above is to apply to partially weathered pagoda tables and unstable joint-bound blocks, there is cause for concern. AppD1Section2.1Table2 (from AS 2187.2) shows that 100 mm/s is the non-damaging limit for *"Unoccupied structures of reinforced concrete or steel construction"*. However, for unreinforced or light-framed structures 15-20 mm/s are suggested (Table 3). BMCS considers it most unlikely that the heterogeneity of a pagoda's rock-mass behaves closer to a reinforced concrete or steel structure, than to a light-framed building. This is presumably why Terrock opts for an 'interim' non-damaging limit of 50 mm/s.

BMCS notes that in AppD2Fig.8c, the distance between the old Cullen Valley open cut and the 'sandstone escarpments and pagodas' map unit varies from about 150 to 300 m. This would seem to be a buffer (or stand-off) intentional or otherwise! It contrasts strongly with the 'mini-buffer' of <100 m between the proposed open cut and the sandstone-pagoda unit (other than in the SPL).

Limiting ground vibrations versus a stand-off buffer

There would be some logic in using the limiting ground vibrations in place of a stand-off, were the destructive capacity of blasting the only significant factor, but it isn't!

Other considerations:

(a) a stand-off of sufficient size will provide a far better factor of safety than a 'non-damaging ground vibrations' limit given the heterogeneous nature of the rock-mass – it will also be known from the outset rather the involving a series of investigations concurrent with mining;

(b) the evidence of a buffer ranging from 150-300 m around the existing CV open cut, as per AppD2Fig.8c (above);

(c) the need to have a 300 m-buffer for the pagoda-dependent flora and fauna as recommended in the PAC1 Review[20] – OEH actually suggested 500 m[21];

(d) the need for a minimum stand-off of 300 m if highwall mining is proposed off the back wall of the open cut – and other than in the SPL region it most certainly is.

Damage to houses in Cullen Bullen

The Society accepts the limits referred to in Section 4.3.1 above. Nevertheless, BMCS reiterates that the state of repair of some houses could make them susceptible to PPVs of < 5 mm/s and overpressures of <115 dBL.

BMCS also emphasises that houses along the highway to the west of the Cullen Valley mine are very likely to receive ground vibrations and overpressures higher than the 'non-damaging' standard limits.

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[20] PAC1 Executive Summary piii states (as abridged): *"Biodiversity impacts are divided into those affecting the pagoda landform and those affecting other aspects of the ecology of the project area…No mining induced damage should be permitted to these features. The Commission recommends that highwall mining in the vicinity of the pagodas be prohibited and that the minimum setback for mitigating blasting risk to the pagodas be increased significantly from the proposed 50m… a setback of* ***300m*** *would provide 70-75% of the foraging area required and should be adopted as an absolute minimum."*

[21] *Also see Marshall B, CoalpacResponseToSubm'ns_BMCSComments_120820.pdf; submitted to Department of Planning and Infrastructure, 20 August, 2012; in section 4.2 (b) the PAC1Recommendation 47 is cited as follows:*
"Recommendation 47 states that a minimum setback-distance of 300m be maintained from the open-cut highwall to the pagodas and the escarpments to provide adequate protection for threatened species and other fauna using the pagoda habitat.
BMCS notes that OEH recommends a 500m setback as best practice [PAC1 pp88-89] and that at ~300m only 75% of the desired habitat is retained. In such circumstances, the Society believes that a 500m setback should be applied, irrespective of the implications this has for any additional mining envisaged in the CCP. The Society contends that it is pointless legislating at both state and federal levels for the protection of threatened species, and then effectively compromising in the face of expert OEH advice."

4.4 Ecology – MRP2Section3.5pp43-61

The Society's understands that this section will be addressed by the Lithgow Environment Group. It has also been commented upon by Keith Muir on behalf of the Colong Foundation[22].

BMCS has indirectly referred to issues such as the need for a 300 m stand-off to protect the pagoda-dependent biodiversity (see footnotes 20 and 21), and expressed its aversion to the Biodiversity Offset Strategy (Section 3.3.7 above).

BMCS has previously expressed its strong disbelief regarding the efficacy of rehabilitation[23] and will not repeat them here. Those feelings are in no way diminished by anything in MRP1-2.

4.5 Mining method stability – MRP2Section3.6pp61-65 and AppH1-2

4.5.1 Open cut mining – MRP2Section3.6.1pp61-62 and AppH2Geotek

Geotek concludes that the *"…minimum global factor of safety for the selected profile is 1.36… the normally accepted FOS for a short-term mining slope under which people will work is 1.2, and for a slope carrying critical infrastructure required for the life of mine the design FOS would be about 1.3."* Geotek affirms that the temporary highwall, which will be fully exposed for periods in the order of 8 to 12 weeks before backfilling begins, *"…will not cause a failure of the overlying cliffs."*

BMCS accepts the assurance but draws attention to 'global factor of safety'. This effectively relates to a catastrophic collapse of the cliff-forming Narrabeen sandstone unit. This does not preclude the possibility of local failures linked to other factors. For example, the geometry of the subvertical joint systems in relation to undercut layers can generate downward tapering unstable blocks which can topple[24] and cause rock-falls and -slides. An examination of the scree and talus on the shallow slope below the cliff will give some idea of the dimensions of the blocks in these gravity driven processes.

BMCS emphasises that subsidence[25] linked to highwall mining, which in relation to AppH2GeotekFig.3 could extend up to 260 m beneath the Narrabeen sandstone unit, remains a concern.

4.5.2 Highwall mining – MRP2Section3.6.2pp63-65, AppH2Geonet and AppH1Hebb

AppH2Geonetp1 satisfactorily explains why FOS determinations based solely on barrier-pillar dimensions and span-width yield lower-bound limiting values (see GeonetTable1).

More realistic 'actual' values of the FOS data which take 'web' pillars (that is, the narrower pillars between the principal barrier pillars) into account yield FOS data (~5) as in GeonetTable2. Based on these data, it is concluded that the proposed barrier pillar designs for each of the coal seams will provide more than adequate long term stability.

The lower bound limiting values for the FOS in Table 1 show that the barrier pillars provide sufficient stability to arrest any instability arising from web pillar variations. Geonetp2 states that the design layout will accommodate lateral deviations of 10% of the pillar width and vertical offsets up to 30% of the height of the opening.

BMCS notes that the only aspects which might cause instability are:

- Sudden topographic variations of sufficient magnitude to affect the vertical maximum principal stress (σ_1) at coal-seam level – this will decrease in significance as a function of increasing depth, such that the upper seams will be more affected than those lower down the stratigraphy.

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[22] *Muir K, Colong Foundation response to the Coalpac submission in reply to the PAC review report and recommended refusal of the proposed Consolidation Project for an open-cut coal mine in Ben Bullen State Forest, submitted to the Department of Planning and Infrastructure, 26 March, 2013.*

[23] *E.g. Marshall B, CoalpacCCP10_0178A_BMCSSubmission_120526.pdf, Section 1.2 square-point 6, and Appendix I; also Marshall B, CoalpacResponseToSubm'ns_BMCSComments_120820.pdf, Section 5.3.*

[24] *Toppling can reflect wedging by the roots of trees or shrubs and/or water pressure. It may also reflect lubrication by water of thin underlying clay-rich layers.*

[25] *This may only be in the order of 10-20 mm, but it can be a sufficient trigger for toppling.*

- Atypical variations from the bearing or azimuth (pitch) of the highwall miner's assigned vector. Based on the Manufacturer's field tests[26] the machine is steerable within a tolerance of ±10 cm of the bearing and azimuth of the target vector. This means that the web pillar dimensions should be achievable within 20 cm of design-width, allowing opposing deviations on each side of the pillar.
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AppH1HebbExecSummary is enthusiastic about the quality of the Australian Mining Industry:

"A major area of advance in the Australian underground mining industry has been in mining operating systems and management practices. Mining companies now are far more proactive in identifying inherent risks, be they geotechnical or other, and adopting a proactive risk management approach to the mining operation. Australia leads the world in the adoption of modern risk management approaches to mine management.

The result of many technical, scientific and management advances across the Australian underground mining industry is that a modern mining operation can be successfully conducted in an environment containing a range of complex hazards; where inter-related performance measures are put in place to ensure that all appropriate stakeholder considerations are linked into the management systems and the mine performs according to agreed compliance measures."

BMCS would love to receive a pair of Professor Hebblewhite's rose-coloured spectacles. From his role in academia and now as a consultant, he must see the best side of the industry in terms of its wish to embrace policies (even to the extent of having a social conscience) and procedures which are reflected in a company's bottom line. In contrast, BMCS sees an industrial Goliath with very deep pockets confronting small often-disadvantaged communities which treasure their qualities-of-life, and volunteer-based environmental organizations which make their money from the annual lamington stall.

The disparity of wealth and human resources is never more apparent than when dealing with the risk management approach embodied in such things as the Subsidence Management Plan and various Environmental Management Plans. The application of such plans involving risk management has resulted in much environmental damage over the past 10-15 years. Why this period? Simply, because prior to that time the ravages imposed on the environment resulted in government and the industry recognising the need to have more rigorous controls. The controls have largely failed due to the risk management processes which ensure a protracted process of communicating with government. Even when massive damage is so obvious that the company and its consultants can't ignore it, the mining continues unabated until some two-plus years later an investigation yields ambiguous results and the company rejects the damaging parts of the findings.

BMCS is concerned about current abuse of regulatory policies and procedures by companies, consultants and government departments. Much of the concern is focused by risk management and mining practices based on an adaptive management approach: the company makes a 'mistake' and the environment suffers! The views expressed in AppH1Hebb are over-enthusiastic, could perhaps be tainted by conflict of interest, and certainly encourage a 'cowboy' attitude because, when the damage is done, it's usually the environment and the amenity of small communities which suffers.

Highwall mining does not have the spotless record seen by AppH1Hebb. There have been adverse impacts which have been mentioned in previous submissions by BMCS (e.g., please refer to footnote 23) and, even though understanding is improving, things can go wrong. Perhaps the major problem is not the machine, but the 'accidents' which are the hallmark of human nature and the heterogeneous mechanical properties of rocks.

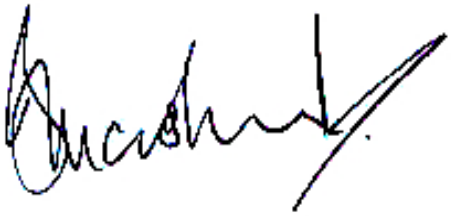
BMCS' final points are that, despite what is said in AppH1Hebb, highwalling is very different from other forms of underground mining. This is the only form of shallow mining which will gouge out the remnants of thin seams of poor quality coal, and mine beneath the edge of highly valued pagodas. Unsurprisingly, it is akin to open-cut mining which destroys large tracts of valued land and makes the nonsensical claim of being able to rehabilitate it.

[26] Caterpillar Highwall Mining Systems – 31 January, 2013

5. Conclusion

The Society has fought long and hard to save this world class region from the depredations of a company which is solely there to exploit the last vestiges of poor quality coal and then walk away. If approved, the region will then be invaded by other open cut proposals currently sitting in the wings. The lives of residents will be destroyed, as has already happened at Blackmans Flat, the potential for a tourism-based future will be compromised, and a magnificent environmentally sensitive region will be lost forever.

The PAC1 Review has seen the conflicting arguments and realised that it is time to draw a line in the black sand. I sincerely hope that this appreciation of things other than the dollar will be catching!



Dr Brian Marshall,
For the Management Committee ***26 March 2013***