

Submissions by the Hunter Thoroughbred Breeders Association, Inc (HTBA)

This submission supplements the oral submissions made to the Independent Planning Commission on 11 November 2020 by Beatty Legal on behalf of the HTBA in relation to the proposed Maxwell Underground Mine Project (SSD-9526).

It addresses the following:

- a. The assessment and nature of key environmental impacts
- b. Uncertainty of asserted economic benefits
- c. The impacts of the mine on existing and preferred land uses
- d. Quantification and relevance of Greenhouse Gas (**GHG**) emissions
- e. Quantification of cumulative impacts
- f. The public interest

The proponent's assessment of key environmental impacts is inadequate and does not provide a reliable basis for decision making. The economic benefits of the mine cannot be conditioned or guaranteed. In any case, they are potentially significantly overstated and the likelihood of these benefits accruing as predicted is extremely low.

Significant risks of serious and/or irreversible environmental harm have been identified. These risks include serious threats to agricultural productivity within and in the vicinity of the mine, threats to water availability and quality, and anticipated destruction of EECs and Aboriginal heritage. These impacts are perpetual and irreversible.

The operations of the mine will further contribute to already adverse air quality impacts both on the Coolmore and Godolphin Studs (**Studs**) (identified as very sensitive receivers) and on the community surrounding the operations at the Maxwell Infrastructure site. The acoustic impacts of the operations at the Maxwell Infrastructure Site will exceed relevant criteria and will be intrusive. Blasting/vibration impacts on the Studs cannot be managed by conditions of consent.

There is a fundamental and irreconcilable incompatibility between this mine in this location and the continued and successful operation of the Studs. These Studs underpin the whole of the thoroughbred breeding industry in the Hunter Valley and NSW. Any risks posed to them are risks to that entire sector.

This mine in this location is not in the public interest. Its impacts, especially its cumulative impacts, are significant and cannot be justified by its uncertain economic benefits. The mine will create a legacy of undesirable environmental impacts for future generations as well as further adding to global GHG emissions.

Applying a precautionary approach, as one must, means that the mine ought not be approved.



Environmental Impacts

1. In determining this development application the Commission is required to take into consideration “*the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality*” (s4.15(b)).

This involves 4 main steps:

- (a) identifying the potential impacts;
- (b) determining whether those impacts are sufficiently understood and described;
- (c) quantifying those impacts (most often in the form of a credible range from reasonable best case to reasonable worst case); and
- (d) then, once it has been established that there is a sufficient understanding of the likely impacts and their consequences, undertaking a balancing exercise to weigh up competing environmental, social and economic factors.

Assessment materials inadequate: critical uncertainties remain

2. The irreversible nature of many of the project’s predicted impacts mandates a high level of confidence in the environmental impact assessments undertaken by the proponent. The Commission must be satisfied that the assessment is based on sufficient, appropriate and current empirical data,¹ has been undertaken in accordance with relevant standards, clearly articulates all underlying assumptions, and makes adequate provisions for areas of uncertainty.
3. The experts engaged by HTBA in the fields of Aboriginal heritage, acoustics, air quality economics, equine behaviour, equine health, groundwater, historic heritage, mine rehabilitation and subsidence, soils, surface water have made oral submissions to, and have prepared written reports for, the Commission (**HTBA Experts**).
4. The HTBA, whose members have wide ranging expertise on matters affecting the thoroughbred breeding industry, has also made oral submissions and prepared written reports.
5. Each of the HTBA and the HTBA Experts has identified significant deficiencies in the scope and adequacy of the assessment materials provided by the proponent. We have set out in **Annexure A** extracts from the HTBA Expert’s presentations which identify, in summary form, these matters.

¹ See SEARs – The assessment is to include: “a description of the existing environment likely to be affected by the development, using sufficient baseline/background data”.



6. In short, the predictive models for environmental impacts provided are overwhelmingly uncalibrated to real world conditions, and are fundamentally incapable of providing meaningful information on impacts. They are (one or more of the following):
- (a) not justified by, or even inconsistent with empirical data;²
 - (b) based on mere “rule of thumb” calculations and assumptions;³
 - (c) siloed;⁴ and/or
 - (d) assume the effectiveness of unproven or impracticable mitigation measures or measures that would generate significant (but unaccounted for) operational constraints.⁵
7. In a complex and large-scale project such as this, social, environmental and economic impacts are often interdependent. For example, to understand impacts on soil productivity, on flora and fauna, on Aboriginal heritage and landscape values, the Commission needs a detailed understanding of the potential range of direct subsidence impacts and how these may consequentially affect water flows and soil properties. The proponent did not undertake this critical assessment.
8. Through the HTBA Experts, however, the Commission now has the benefit of expert technical guidance provided by Messrs Scott (on the potential range of subsidence impacts and the assumptions underlying the subsidence predictions made by the proponent’s experts), and Droop and Murphy on water availability and water quality issues consequent on the removal of over 148 million tonnes of material in multiple overlying coal seams in this location.
9. The Commission has been provided with a large volume of material on potential environmental, social and economic impacts from the proponent, the community and government agencies and their experts. In determining what weight to attribute to expert assessment it is critical to understand:
- (a) the nature of the question put to the expert; and
 - (b) the information provided to that expert; and
 - (c) the relevant qualifications and experience of the expert.

² Eg: water model not appropriately calibrated, background noise assessments inadequate

³ Eg subsidence predictions based on generic assumption regarding the angle of draw

⁴ Eg; surface water and groundwater assessments inconsistent, Aboriginal heritage, historic heritage, biodiversity and water assessments fail to take into account potential range of likely subsidence impacts,

⁵ Eg: acoustic controls propose real time monitoring and instantaneous changes to operations based on weather conditions – this is likely impractical and will affect operations



10. By way of illustration, the IESC, an independent expert scientist, was tasked with identifying matters relevant to the impact of the proposed mine on water resources that ought to be considered in the assessment process. In November 2019 it identified that significant risks were not well understood and that further work was needed. In response, the proponent has asserted that the issues have been adequately addressed in the material that was before the IESC and no further work is needed.⁶ We note that DPIE also raised issues of concern in September 2019. These were also not addressed or followed up by the Department.
11. By contrast, it appears that the DPIE appointed groundwater peer reviewer was simply asked if the model complied with the relevant groundwater guideline. This question is directed at the internal coherence of the theoretical model, not whether it reflects or is capable of reflecting *real world conditions* or whether it is *fit for purpose* by identifying a credible range of impacts of the mine on water resources and users of those resources, having specific regard to the sensitive nature of that resource in that locality.
12. The Commission has been specifically requested by the Minister to have regard to the DPIE Assessment Report (**DPIE Report**). It provides a summary of the assessment materials provided by the proponent and where NSW Government Agency advice has been sought on a specific issue, the advice provided. In that respect it does not, and does not purport to be a critical, comprehensive or expert analysis of the issues.
13. For example, the DPIE Report:
- provides little or no information to support the contention that mining activities will not have an adverse effect on equine health. The terms “Equine Health” or “Horse Health” appear on just a handful of occasions in the both the materials provided by the applicant and the Department's final report. The suggestion by the Department that there will be negligible impact on equine health appears to be based on air quality modelling designed to meet human health criteria.
 - virtually ignores the impact of subsidence on soil properties, especially in relation to waterlogging and drainage.
 - does not recognise the uncertainty in subsidence prediction and in particular the uncertainty associated with predicting subsidence from multiple seam extraction but relies solely on a single report that didn't look at ranges of values.
 - Fails to identify that matters raised by the IESC have not been addressed.

⁶ See groundwater report of Mr S Murphy, extracts below.



Risk of serious environmental impact or irreversible harm identified

14. To assist the Commission understand the significance of the deficiencies in the proponent's environmental assessment we summarise below the views of the HTBA Experts on the likely environmental impacts of this project.

Acoustic (Mr Frank Butera, Arup)

- There is a significant risk that the noise modelling under-predicts operational noise to nearby highly sensitive noise receptors. The limited data and analysis demonstrate that the project will continuously exceed the NSW Noise Policy limits. There is a high risk that the project will continuously exceed the project noise limits.

Air (Mr Peter Stephenson, Environmental Management Australia)

- Transport, storage and handling of 148M tonnes of coal will further diminish already adverse air quality in an environment where background particulate levels currently exceed NEPM health criteria.
- The mine will contribute significant Scope 1, 2 and 3 GHG emissions to the environment.

Ground Water (Mr Sean Murphy)

- The most critical aquifers of the region, in terms of environmental sensitivity, are those of the 'Highly Productive Aquifer of the Hunter River Alluvium' and the alluvial aquifers of Jerry's Plain water source including Saddlers Creek. The modelling approach taken does not allow for impacts on these areas to be effectively differentiated.
- Water levels in Saddlers Creek Alluvium are predicted to fall by 8 metres, Saltwater Creek by 4 metres, the Hunter River Alluvium by just under 2 metres and further induced losses will result in a depleted aquifer with consequential loss of water allocations, Groundwater Dependent Ecosystems and other vegetation. A 2 meter loss in water levels to the Hunter River Alluvium is representative of a long-term loss of baseflow supply to a regionally important, and already stressed water source.
- The proposed mine plan for the deposition of spoil, rejects, tailing and water to open voids presents a future and permanent risk to surrounding water resources.
- The model, as it currently stands, indicates that there are long term impacts to the Permian aquifer, the alluvial aquifers will be impacted by between one and eight meters of long term drawdown and the modelling of the groundwater impacts of Subsidence are optimistic at best. These impacts are on the 'Highly Vulnerable' 'Highly productive' alluvial aquifers of the Hunter River and Jerry's Plain groundwater sources.

- The extent of subsidence is likely to be significant and will adversely affect the suitability of lands for subsequent rural uses, specifically the viability of grazing on improved pasture. This will have long term consequences

Surface Water (Mr O Droop, OD Hydrology)

- The water balance model is not calibrated and is inconsistent with (i.e., not coherent with) the groundwater model. The Commission can have no confidence that the risk of supply shortfall and associated interruption due to mining is recognised or that impacts of the mine on water quality or availability are understood or that the mine would be able to manage high rainfall events.
- Potential subsidence impacts could extend into key surface and groundwater resources - with the greatest potential for intersection with the Hunter River Alluvial and consequent formation of a direct hydraulic connection between the mine workings, the Hunter Alluvial aquifer and therefore the Hunter River.
- The Saddlers Creek Alluvial aquifer is classified as 'highly productive' and a greater than 10% cumulative impact on surface flow will have an adverse impact on that alluvium.
- The proponent's proposed mine plan comprises leaving open mine pits which gather water and become hyper-saline over time - no meaningful assessment has been offered to the Commission of the real risks and impacts of leakage/seepage of this water into the surrounding groundwater and surface water over the years to come.

Subsurface water (N Sutherland, E Rooke, Gilbert & Sutherland)

The project is proposed to be carried out in a landform characterised by its unique water supply, land capability and productive capacity. It is the uninterrupted supply of near-surface relatively fresh groundwater that allows for the production of agricultural fodder in drought. The project potentially puts at risk these shallow groundwaters through permanent degradation of the water supplies.

Subsidence (Mr Peter Scott)

The proponent's modelling is based on a rule of thumb and does not identify or articulate the significant uncertainties with multi-seam extraction. Subsidence impacts will affect a considerably greater area than predicted (including the Golden Highway, private land not owned by the mine, Saddlers Creek and the Hunter River Alluvium if a different and equally plausible angle of draw were adopted). Due to the proposed multi seam extraction (including longwall mining under bord and pillar and in some locations up to 4 layers) subsidence could be even more extensive.

Aboriginal Heritage (Dr Tim Owen)

- There will be complete 'harm' to subsurface physical Aboriginal archaeology through subsidence, the management of subsidence and all actions associated with remediation.
- There is likely to be significantly more subsurface archaeology than surface archaeology.
- There are likely to be unassessed social impacts to Aboriginal people and groups through continued loss of their heritage and failure to recognise and acknowledge their heritage.
- There will be a loss of a large region of cultural landscape – the same loss as per historical heritage.

Historic Heritage and Landscape (Ms Sharon Veale)

- There will be substantial subsidence impacts across parts of the Muswellbrook-Jerrys Plains Landscape Conservation Area which will directly alter its appearance through collapse of ridgelines, slopes and flats, loss of water courses and large scale changes to vegetation.
- There will be permanent and irreparable changes to the aesthetic and historical cultural landscape.

Soils (BSAL & EEC) (Dr Peter Bacon and Dr Pam Hazelton)

- Subsidence and surface cracking will affect soil properties especially in relation to waterlogging and drainage. The proposed mine may also have salinity impacts on soils.
- These impacts will destroy soil productivity of Biophysical Strategic Agricultural Land (**BSAL**) on site (at least 72 ha – most likely significantly more).
- Essential soil habitat conditions for Critically Endangered Ecological Communities (**CEECs**) will be adversely affected by subsidence/surface cracking and any salinity impacts. The most important aspect of ecosystems is that they are interlinked. Any disturbance even appearing to be minor can set in motion the demise of the system and systems which are connected. The CEECs can be affected in a similar fashion.
- It is unclear if the proposed on-site biodiversity offsets will have the necessary soil and habitat conditions to grow the species proposed. The three nominated CEECs grow in different soils. Consequently, putting them together on the same offset site would have a high risk of failure (unless comprehensive surveys establish soil suitability in the designated locations).



Equine Health (Dust Impacts) (Dr Tennant Brown)

The dust burden for grazing horses is almost certainly much higher than suggested by methodologies used to determine air quality for humans. The equine respiratory tract appears to be very sensitive to particulate material with studies confirming that more dust causes more airway inflammation. More coal mining activity in the Hunter Valley (and at this site in such close proximity to studs) will worsen the already poor air quality of the region and increase dust deposition in the paddocks of grazing horses. Horses exposed to high levels of coal dust develop pneumoconiosis similar to human coal miners and silicate pneumoconiosis has been described in pastured horses. Increased dustiness also hampers the normal respiratory defense mechanisms increasing the risk of infectious (bacterial or viral) respiratory disease.

Equine Behaviour (Mr A McLean)

In instances where the information, data and modelling is inadequate, the outcome for the horses at Coolmore and Godolphin Studs is that fear responses could well amount to a significant percentage of horses being injured or harmed mentally through chronic stress, learned helplessness, sensitisation and spontaneous recovery of flight responses. In a worst case scenario, in my expert opinion it may well be that a significant percentage of foals are injured however the deleterious mental effects may be even greater. It is impossible to put an accurate figure on it.

Impact on the Thoroughbred Horse Breeding Industry

The global thoroughbred breeding industry is extremely competitive and investment is highly mobile. Any threat to this environment (perceived or real) will threaten the fundamental basis of the industry's business model. Coolmore's and Godolphin's landscape presentation is immaculate, tranquil and deceptively bucolic. It is intensely managed, with the highest attention paid to every detail – from the presentation of their stud farms to the care of and commitment to their valuable bloodstock – all key components of their business models (to breed elite athletes), client expectations and investment attractiveness to current and future clients. A decision to approve a mine in close proximity to these two international scale studs –that have been acknowledged by previous PACs as the “epi centre” and “central players” of the Hunter's and Australia's breeding industry, would in our client's expert view signal the beginning of the end of the ECIC, sustainable jobs, exports, tourism and future investment potential in this region.⁷

⁷ See HTBA Submission



Relevance of economic assessment

15. In a large scale long term coal mining project such as this, the proper identification and assessment of predicted economic benefits effectively establishes the benchmark against which all the adverse impacts of the project must be weighed up. If the predicted benefits of the project are unrealistic, unachievable or overstated, a decision to approve the project will have fundamental, long term consequences for the pre-project socio-economic and natural environment.
16. Extraction, handling, and loading and transport of 148,000,000 tonnes of coal over 26 years will have profound and irreversible impacts on the environment and the local community and existing local economy. The only reason that a project of this nature is capable of approval is if its economic benefits **to the public**,⁸ clearly, and with certainty materially outweigh its considerable adverse impacts.
17. The cost benefit analysis (**CBA**) is dependent upon assumptions provided by the proponents as to coal quality, coal price, operational costs, capital costs, operating output, and employment figures over a 26 year period and the conclusions (rejected by the HTBA Experts) reached by the proponent's experts that all adverse environmental impacts can and will be consistently avoided or mitigated.
18. These assumptions (and the resulting predicted economic benefit assessment) must be subjected to at least the same rigorous level of scrutiny as is applied to the assessment of environmental impacts.
19. Insufficient information has been provided by the proponent to verify its assumptions. For example, as the Joint Ore Reserves Committee (JORC) Statement has not been made publicly available there is no transparency on the nature of the coal reserves and/or the likelihood of achieving the suggested 75% semi soft coking and 25% thermal coal split. In part, this is because the proponent is a private company and accordingly information that would normally be available for investors is not in this instance.
20. The Division of Resources and Geoscience (**DRG**) has indicated that a 25/75 split is theoretically possible.⁹ However, this is a different question than whether it will in fact be achieved. There is limited readily accessible publicly available information on thermal vs metallurgical coal production rates at a mine specific level. However, from research we have undertaken we have identified
 - a. Three of the four underground coal mines that have identified in their EIS a capacity to generate metallurgical coal (Integra Underground, Austar Underground, Tasman

⁸ At page 1 of the department's *Guidelines for the economic assessment of mining and coal seam gas proposals* (December 2015) the public interest is defined as the "collective public interest of households in NSW."

⁹ DRG letter to DPIE dated 17 September 2020

Underground and Donaldson Abel Underground) are either undeveloped or in care and maintenance.

- b. Most of the 26 currently operating/approved coal mines in the Upper Hunter (8 of which are underground and 2 combined open cut and underground) produce thermal coal. Only three four listed above indicated in the EIS materials an intention to produce a proportion of coking coal.
- c. There are instances in which particular product split was asserted in the EIS but not delivered.¹⁰
- d. That mines make daily adjustments in blending and processing (washing) coal to achieve a particular product outcome. Often this involves balancing waste volumes and product volumes (ie, some coal can be washed harder to create a higher quality product with increased proportions of wastage).

In short, there is considerable uncertainty as to whether the asserted increased benefit of semi soft coal over thermal coal will in fact be delivered as proposed.

21. The proponent's predicted economic benefit depends on the assumption that there will be an export market for coal produced by this mine for at least 26 years into the future and that the assumed coal prices for this period are appropriate. As the Commission is aware recent events and the acknowledged need (locally and internationally) to reduce GHG emissions create significant uncertainties in relation to the demand for and consequent price of coal moving to 2050. Given the critical importance of this issue to purported benefit of this mine it is essential that the Commission obtain **and publish** independent expert advice on this issue. We note that the proponent is seeking to provide advice on this matter to the Commission on a confidential basis. It is inappropriate that information critical to the assessment of the public benefit of the mine is kept confidential.

22. In 2018 in the *Rocky Hill* case, assertions were made by that mine proponent regarding the superior nature of semi-soft coal both in terms of its likely future market and preferred GHG impact. Chief Justice Preston noted the following:

- a. *"Although there was some disagreement between the experts on coal demand, Mr Buckley and Mr Manley, they did agree that there were other coking coal mines, both existing and approved, in Australia that could meet current and likely future demand for coking coal, including coking coal with the properties of the coal from the Project. This would mean that the demand for coking coal would be met by*

¹⁰ For example: The Whitehaven Coal Maules Creek Project EA in 2011 contains the following statement:

"... based on the 21 Year Mine Plan ROM coal production for the Project is anticipated to consist of 57% metallurgical coal and 43% thermal coal". In a 2018 conference presentation Whitehaven stated that for FY2018: *"Full year sales of metallurgical coal is expected to be in the range of 20% to 25% of total Maules Creek product sales."*



Australian coking coal of the highest quality in the world from Australian coal mines operating to the highest environmental standards in the world. There is, therefore, unlikely to be a moving of coal mining abroad or carbon leakage” [at 536].

- b. *“The market substitution argument is also flawed. There is no certainty that there will be market substitution by new coking coal mines in India or Indonesia or any other country supplying the coal that would have been produced by the Project. As both Professor Steffen and Mr Buckley explained, countries around the world are increasingly taking action to reduce greenhouse gas emissions in their countries, not only to meet their nationally determined contributions but also to reduce air pollution” [at 538].*
- c. *“The current and likely future demand for coking coal for use in steel production can be met, however, by other coking coal mines, both existing and approved, in Australia. ... The GHG emissions of the Project cannot therefore be justified on the basis that the Project is needed in order to supply the demand for coking coal for steel production” [at 548-549].*

23. The proponent has provided insufficient detail to verify its assumptions regarding capital costs and operating expenditure. Given the increasing trend towards automation of mining, particularly underground mining, one must doubt the asserted employment figures even if the mine operates at capacity continuously over the next 26 years.

24. There are a host of real world uncertainties affecting the export market, demand for coal, coal prices and increased automation of mining.

25. We set out in **Annexure B** a table which lists current coal mines in the Hunter Valley, their approved maximum annual ROM production and their reported production rate over the last 5 years. As demonstrated in that table:

- a. there are many coal mines in the Upper Hunter which are approved and un-commenced, or in care and maintenance or standby;
- b. operational output varies annually and mines do not operate at their maximum permitted output;
- c. mines will close or reduce operations (be placed on standby or in care and maintenance) if their commercial environment changes. This leaves the community with a lingering and uncertain environmental legacy especially where remediation is delayed.

26. The predicted economic benefits can only eventuate if:

- a. mining commences promptly and within the assumed capex budget; and

- b. the mine produces coal of the quality stated, at the production rate proposed, sold for the price assumed and employing the staffing levels proposed on a continuous and uninterrupted basis for each of the next 26 years.

None of these factors can be regulated or controlled by conditions of consent.

27. If one or more of these variables change so will any justification in favour of the mine proceeding. The review of the economic assessment undertaken by Rod Carr of Marsden Jacobs demonstrates that by making credible (real world) adjustments to the CBA to account for market uncertainties so as to provide a realistic worst case scenario (to counter balance the proponent's best case scenario) a "no net public benefit outcome" is a realistic scenario, even if the mine commences and operates for its proposed life.
28. The Commission is urged to consider the consequences of the project's predicted economic benefits not being achieved and to weigh this against the certainty of harm it will cause, even if only partly progressed, to the surrounding environment and economy.

Preferred Land Uses

29. Clause 12 of the Mining SEPP imposes a mandatory consideration. The Commission must identify existing (actual, physical and lawful), approved and likely preferred land uses of land in the vicinity of the proposed mine, identify the impact of the proposed mine on those uses and then evaluate and compare the respective public benefits of the mine and those of the surrounding existing and preferred land uses.¹¹

Existing, approved, and preferred land uses on site and vicinity

30. This is a proposal for a new mine in a place where there is currently no mining and there has never (despite a number of recent applications) been any coal mining.
31. The Maxwell operations propose to utilise existing coal handling, storage and preparation infrastructure some 12kms from the site. On the site of the proposed underground mine

¹¹ *Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must—*

- (a) *consider—*
- (i) *the existing uses and approved uses of land in the vicinity of the development, and*
 - (ii) *whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and*
 - (iii) *any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and*
- (b) *evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) and (ii), and*
- (c) *evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).*



there is extensive evidence of its occupation by the Wonnarua people. The site has been used for grazing for over 100 years.

32. The Godolphin and Coolmore Studs across the road from the proposed mine have been home to continuous horse breeding operations since the late 1800s.¹² While there is mining in the wider region there has been none in this location. The current land use and surrounding land uses are clearly depicted in Figure 05-1: Equine and Viticulture Enterprises in the Vicinity of the Project (Agricultural Impact Assessment August 2018) a copy of which is at **Annexure C**.
33. The proposed mine is located in the RU1 Primary Production Zone under the Muswellbrook LEP. In this zone underground coal mining in this location is not identified as permitted with or without consent. The objectives for the RU1 zone include:
- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
 - *To encourage diversity in primary industry enterprises and systems appropriate for the area. ...*
 - *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
...
 - *To maintain the rural landscape character of the land in the long term. ...*
 - *To protect or conserve (or both)—*
 - (a) soil stability by controlling development in accordance with land capability, and*
 - (b) trees and other vegetation, and*
 - (c) water resources, water quality and wetland areas, and their catchments and buffer areas, and*
 - (d) valuable deposits of minerals and extractive materials by restricting development that would compromise the efficient extraction of those deposits.*

34. The development site adjoins Equine and viticulture CIC and there is valuable BSAL on and around the site. The Upper Hunter Strategic Agricultural Land Use Plan 2012 and the Hunter Regional Plan 2036 both emphasise the importance of protecting and enhancing agricultural productivity. The 2036 plan specifically identifies the current transition in power generation and mining sector and the importance of the protection of the ECIC and leveraging it and food based agriculture to promote investment and tourism.

35. This site provides a critical buffer between the Thoroughbred Breeding Industry and mining elsewhere.

The impact of the proposed mine on the existing and preferred agricultural/CIC use

36. The proposal will be incompatible with the existing, approved and likely preferred uses. It poses a real risk of causing direct and permanent adverse impacts on the agricultural productivity of the site and potentially adjacent land, primarily due to subsidence and water impacts. There is clear evidence of the likely direct adverse impacts of the mine on water

¹² See HTBA Submission

resources, agricultural productivity, Aboriginal heritage, protected ecology, air quality, acoustic and visual amenity and their adverse consequential social impacts on the public.

37. As identified by Mr Murphy, the legacy impacts from this mine are likely to include:
- Long term depletion of surface water and groundwater adjacent to and down gradient of the mine. In both the alluvial and Permian aquifers.
 - Surficial cracking leading to the reduction in overland and stream flows.
 - Loss of WAL reliability and increased restrictions on the take of water.
 - Potential contamination issues resulting from leakage or overtopping of the voids containing hypersaline water and sludges¹³.

38. The proposal is entirely incompatible with the adjoining, established Coolmore and Goldophin Stud. The SEARs specifically direct the proponent and the Commission to the importance of this issue:

“an assessment of the compatibility of the development with other land uses in the vicinity of the development, in accordance with the requirements of Clause 12 of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, paying particular attention to nearby equine and viticulture critical industry clusters”.

39. The HTBA in its submission, and the submissions of Coolmore and Godolphin, explain why this mine in this location is a threat to their business and reputation. Previous Planning and Assessment Commissions have recognised the extreme sensitivity of this industry (and in particular these two key studs) to the physical impacts of mining. While the direct physical impacts of this proposal may be less obvious than that of an open cut mine, this does not mean that the presence of a large, long term coal mine across the road from these two breeding studs is a suitably “compatible” use of neighbouring land.

40. Evidence has been provided to the Commission and previous Planning and Assessment Commissions of:

- a. the interconnected nature of the Thoroughbred Breeding Industry and the “cornerstone” role played by the Godolphin and Coolmore Studs; and
- b. the critical nature of the pristine scenic landscape to the Godolphin and Coolmore brand and reputation.

41. Each of our clients, Coolmore and Godolphin remain willing to provide further information to assist the Commission understand the strength of the Thoroughbred Breeding Industry in the Hunter Valley and of its vulnerabilities to proximate incompatible land uses. Previous Planning and Assessment Commissions have had the opportunity to gain this understanding through detailed briefings and site tours. This invitation is reiterated.

¹³ See Report of Mr S Murphy



Comparative Public Benefits

42. In addition to the asserted economic benefits of the proposal (the uncertainties of which are discussed above and in the report of Mr Rod Carr), the mine has asserted that the following aspects of the proposal constitute a public benefit:¹⁴

- a. *The disposal of 21 million plus tonnes of reject material in the East Void on the grounds that it improves rehabilitation outcomes for the Drayton Mine.* As noted by the HTBA Experts and the IESC the disposal of this material in the East Void will cause further contamination (heavy metal and saline) of the water in the void, increase the risk of void overflow and generally pose an increased perpetual risk due to the presence of a significantly contaminated body of water adjacent/proximal to alluvial aquifer which has been classified as ‘highly productive.’
- b. *This mine will have a lower initial capital cost because it will use the existing Drayton mine coal handling infrastructure.* This is not a public benefit. Instead it defers the closure of this infrastructure and provides for increased air quality and acoustic impacts for the community.
- c. *The mine will provide for “improved rehabilitation outcomes and post mining land uses” for the Drayton mine.* The Drayton consent requires the rehabilitation of this site. This will be deferred if the mine proceeds.
- d. *The mine will be underground which will “minimise environmental impacts”.* This proposal will have different impacts than an open cut mine. Subsidence and water impacts will be significant due to the larger volume of material to be extracted, the greater footprint of the underground mine and the greater depth of the mining proposed. The fact that the proposal has different environmental impacts than an open cut proposal does not mean that those impacts are of positive public benefit.

43. Relevant factors when evaluating and comparing the respective public benefits of the development and the existing and preferred land uses of the site and land in its vicinity include:

- a. there is significant uncertainty in the quantum of the asserted economic public benefits of this mine;
- b. while the mine may provide some economic benefit to the State in the form of royalties and provide additional employment in the mining sector, this has to be contrasted with the fact that this mine will make this land agriculturally less productive in perpetuity;

¹⁴ See for example paragraph 8.1 of the Ashurst report dated 22 October 2020.



- c. the mine will have significant adverse impacts on water resources, heritage and endangered species;
- d. the mine will make a substantial long term contribution to GHG emissions;
- e. there are many coal mines in the Hunter with many years of extraction already approved – many of these un-commenced or in care and maintenance or on reduced production; and
- f. the two thoroughbred studs that underpin the entire thoroughbred horse breeding industry in the Hunter (and NSW) adjoin the development site and are imperilled by this mine.

Greenhouse Gas Emissions Scope 1, 2 and 3

44. The Mining SEPP identifies two matters the consent authority must consider:

- a. *“whether or not the consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner, including conditions to ensure ... that greenhouse gas emissions are minimised to the greatest extent (clause 14(1)(c)); and*
- b. *“an assessment of the greenhouse gas emissions (including downstream emissions) of the development, ... having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions” (clause 14(2)).*

45. Relevantly, the assessment required under clause 14(2) is an assessment of the GHG emissions of “the development”, being the construction and operation of the proposed mine. This assessment must, accordingly, be on a “whole of life cycle” basis and would therefore include:

- a. scope 1 and 2 GHG emissions arising from the construction and commissioning works, mine operations (including mine venting and waste gas and post mining emissions (being emissions after the coal has come to the surface) and the legacy GHG emissions post decommissioning; and
- b. scope 3 GHG emissions.

46. This interpretation of clause 14(2) as requiring a whole of life cycle assessment of scope 1 and 2 GHG emissions is also consistent with the objects of the EP&A Act and the principles of ecologically sustainable development. Similarly, the SEARs require that the impact assessment be for all stages of the development.

47. The National Greenhouse and Energy Reporting Scheme (NGER) establishes the national framework for reporting company information about GHG emissions¹⁵. While this framework is primarily directed at annual GHG emission reporting obligations (where those GHG emissions exceed threshold targets) the Measurement Determination and associated technical guidelines specify the methods, criteria and measurement standards for calculating greenhouse gas emissions.
48. A 62 page specific technical guideline for estimating emissions and energy from coal mining has been published by the Clean Energy Regulator entitled: *Estimating emissions and energy from coal mining guideline August 2020 (CER Coal Mining GHG Guide)*.¹⁶

The stated purpose of the guideline is:

“to promote better reporting by assisting registered corporations and responsible emitters:

- *estimate and report emissions (including fugitive emissions) from coal mines, and*
- *estimate and report energy production and energy consumption from coal mines.”*

It identifies that good practice NGER reporting in coal mining requires:

- transparency (emissions estimates must be documented and verifiable);
- comparability (emission estimates using a particular method must be comparable with estimates produced by similar entities in that industry sector using the same method);
- accuracy (having regard to the availability of reasonable resources and the requirements of the NGER Measurement Determination, uncertainties in emissions estimates must be minimised and any estimates must neither be over nor under estimates of the true values at a 95% confidence interval); and
- completeness (subject to any applicable reporting thresholds, all emission sources identified in section 1.10 of the NGER Measurement Determination, and production and consumption of all fuels and energy commodities listed in Schedule 1 of the NGER Regulations, must be accounted for).¹⁷

¹⁵ The first object of the *National Greenhouse and Energy Reporting Act 2007* is to “introduce a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations to:

- (b) *inform government policy formulation and the Australian public; and*
- (c) *meet Australia’s international reporting obligations; and*
- (d) *assist Commonwealth, State and Territory government programs and activities; and*
- (e) *avoid the duplication of similar reporting requirements in the States and Territories”.*

¹⁶ See document:

<http://www.cleanenergyregulator.gov.au/DocumentAssets/Documents/Estimating%20emissions%20and%20energy%20from%20coal%20mining%20guideline.pdf>

¹⁷ Page 11 CER Coal Mining Guide

49. The CER Coal Mining Guide identifies and provides a methodology for calculating the various annual GHG emissions data required to be reported under the NGER. Relevantly, methodologies are provided for the calculation of GHG emissions from:
- a. fugitive emissions from extraction of coal (being emissions arising from venting through mine ventilation and surface venting caused by gas drainage) (Chapter 3)
 - b. emissions from coal mine waste gas (chapter 4)
 - c. emissions from post-mining activities from “gassy” mines¹⁸ (Chapter 5) (Post mining emissions are emissions from coal after it has been extracted and brought to the surface)
 - d. fugitive emissions from decommissioned underground mines and from underground mines in care and maintenance (Chapter 6)
 - e. production of saleable coal (chapter 8.1)
 - f. coal mine waste gas captured for combustion where applicable (Chapter 4.1)
 - g. on-site electricity generation where applicable (chapter 8.2)
 - h. on site fuel consumption and emissions from purchased electricity (Chapter 9)

Scope 1 and 2 GHG Emissions

50. The assessment of scope 1 and scope 2 GHG emissions for the Maxwell Underground mine provided by the Proponent:
- a. does not include all relevant construction emissions (such as those associated with vegetation clearing);
 - b. does not include operational emissions from post mining or legacy emissions post decommissioning; and
 - c. provides insufficient details of the assumptions and methodology used to calculate the direct emissions from the mine in the form of venting/waste gas to allow an assessment of whether these forms of fugitive emissions have been appropriately calculated.
51. The scope 1 & 2 estimate provided is significantly different on a per ROM tonne basis to the GHG assessment provided for another underground mine in the Hunter Valley. The proponent has identified 11 Million tonnes scope 1& 2 CO₂e for the project (148Mt ROM extraction). By way of contrast, the GHG Assessment provided in the EA for the modification of the Integra Underground Mine (Mod 8 to permit continued longwall mining

¹⁸ Note a “gassy mine” is specifically defined under the NGER as “an underground mine that has at least 0.1% methane in the mine’s return ventilation”. It is a different threshold than identification of whether a mine is gassy for EH&S or planning purposes. [see Chapter 5]



of the Middle Liddell Seam¹⁹) (approved in April 2018) to permit the extraction of an additional 9.9 Mt ROM coal over 6 years identified that the additional operations only greenhouse gas emissions projected from the Modification will total approximately 4,007,671CO₂-e.

The following table was provided in the Integra Air Quality and GHG Assessment:

8.1.3 Operational Emissions Summary

As production for each year is variable and subject to change, the predicted total volume of emissions for 6-years operation (2018 – 2023) has been presented. Note the projected data represents only the emissions from the additional mining operations.

Table 17 Projected operational and fugitive greenhouse gas emissions for 2018-2023

Emission source	Greenhouse Emissions per ROM t (tCO ₂ e / ROM coal t)	Projected typical annual average greenhouse gas emission (tCO ₂ e)	Total projected greenhouse gases 2018-2023 (tCO ₂ e)
Fugitive emissions from the extraction of coal	0.346	571,275	3,427,650
Combustion of diesel fuel from equipment/plant	0.003	1,686	10,119
Combustion from flares	0.027	44,220	265,320
Fugitive emissions from post mining activities	0.017	28,050	168,300
Purchase of Electricity from grid	14.4 (kWh / t Rom Coal)	22,714	136,282
Total assessed operational sources	-	667,945	4,007,671

52. We note that the CRU letter annexed to the Ashurst Report dated 22 October 2020 indicates that the “*IPCC estimates methane emissions from coal mining are in the range of 0.164-0.410 t CO₂-e / coal tonne (or 10-25 m³/tonne) for underground mining*”²⁰. This would provide a scope 1 (fugitive emissions only) estimate for 148 Mt of 24,272,000 CO₂e – 60,680,000 CO₂e.

53. In summary, the assessment of Scope 1 and 2 emissions:

¹⁹ The activities the subject of the modification were in the Integra GHG Assessment identified to include:

Construction: vegetation clearing, excavation works and the construction of supporting facilities (dewatering Site, additional powerlines, as well as the drilling of boreholes and the re-grading and establishment of existing and new access roads).

Operation: fugitive emissions from the extraction of coal in the new mining area, fugitive emissions from post mining activity, the use of diesel fuels during coal extraction processes, flaring of waste gases, and electricity usage.

https://majorprojects.accelo.com/public/d04487ff9c926614656fae9e1b23340f/App%20H_Integra%20Underground%20Air%20Quality%20and%20GHG%20Assessment.pdf

²⁰ Page 6, CRU letter dated 18 September 2020



- a. was not prepared having regard to the most relevant applicable national policies guidelines concerning greenhouse gas emissions as required by SEPP;
- b. does not represent the emissions “of the development” on a whole of life cycle basis
- c. does not identify and estimate all the sources of scope 1 and 2 for the development
- d. is likely to significant underestimate the development’s scope 1 and 2 GHG emissions.

Scope 3 GHG Emissions

54. The consent authority is specifically required by the Mining SEPP to consider scope 3 emissions and the magnitude of scope 3 emissions is relevant in the consideration of the public benefit of the mine.

55. In *Rocky Hill* the Land and Environment Court held that:

- a. consideration of the impacts of the mining project on the environment and the public interest justify considering not only the scope 1 and scope 2 emissions but also the scope 3 emissions of the proposed mine;²¹ and
- b. the GHG emissions associated with the project and their likely contribution to adverse impacts on the climate system, environment and people adds a further reason for refusal of the development.²²

56. In reaching this conclusion, Chief Justice Preston identified that:

- a. All of the direct and indirect GHG emissions of the mining project will impact on the environment. All anthropogenic GHG emissions contribute to climate change.²³
- b. There is a causal link between the proposed mine’s cumulative GHG emissions and climate change and its consequences. The Project’s cumulative GHG emissions will contribute to the global total of GHG concentrations in the atmosphere.²⁴
- c. It matters not that this aggregate of the Project’s GHG emissions may represent a small fraction of the global total of GHG emissions. The global problem of climate change needs to be addressed by multiple local actions to mitigate emissions by sources and remove GHGs by sinks.²⁵

²¹ *Rocky Hill* at 513

²² *Rocky Hill* at 556

²³ *Rocky Hill* at 514

²⁴ *Rocky Hill* at 525

²⁵ *Rocky Hill* at 515



- d. In absolute terms, a particular fossil fuel development may itself be a sufficiently large source of GHG emissions that refusal of the development could be seen to make a meaningful contribution to remaining within the carbon budget and achieving the long term temperature goal.²⁶

57. The mine the subject of *Rocky Hill* was a proposal for an open cut mine to extract 21 million tonnes ROM coal over 16 years with estimated scope 3 emissions of 36Mt CO₂e. This mine is **seven times** that size at 148Mt ROM and 326 Mt CO₂e over 26 years.

Cumulative Impacts

58. The identification and assessment of cumulative impacts is a necessary element in understanding the environmental impacts of a proposed development. The proponent is specifically required by the SEARs to include: “*an assessment of the likely impacts of the development on the environment, ... including: an assessment of the likely impacts for all stages of the development, including any cumulative impacts, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice*”.

59. This is a very different exercise than considering if the predicted impacts of the project will meet Voluntary Land Acquisition and Mitigation Policy criteria or the non-discretionary standards in the Mining SEPP.

60. As the Court found in *Gray v Minister for Planning and Ors* (2006) 152 LGERA 258 (**Gray**):

- a. *Cumulative impact is a necessary element of an environmental assessment which takes into account the principle of intergenerational equity.*²⁷
- b. *Failure to consider cumulative impact will not adequately address the environmental impact of a particular development where often no single event can be said to have such a significant impact that it will irretrievably harm a particular environment but cumulatively activities will harm the environment.*²⁸
- c. It also informs the precautionary approach in that knowledge of impacts which are cumulative, ongoing and long term the cumulative impacts of a project are relevant in assessing the seriousness or irreversibility of environmental damage²⁹.

61. The community is currently experiencing significant cumulative impacts from mining: landscape, social, heritage (and sense of place), air quality and noise. The majority of mines now operating in region were originally approved 20-30 years ago. Many of these

²⁶ *Rocky Hill* at 554

²⁷ *Gray* at 122

²⁸ *Gray* at 122

²⁹ see for eg *Gray* at 131 and 134



have years to run. In the Hunter Valley there has been a steady encroachment of mining on what has been traditionally agricultural land with specialised equine and viticulture uses.

62. The critical cumulative impacts of this proposal include its contribution to:

- a. Air quality – air quality indicators in the region, and particularly in the Muswellbrook area near the coal storage and handling facilities at Maxwell Infrastructure, already exceed relevant health criteria (see report of Peter Stephenson)
- b. Water:
 - As identified by DPIE: *the project would result in some depressurisation of the Permian aquifers, ... these aquifers have already – already been substantially modified in this area by historic mining operations in the broader region and are generally typically identified as highly saline water that has limited use for primary production and agriculture*³⁰;
 - Saddlers Creek is already significantly degraded due to existing mining
 - For its operations and anticipated perpetual water inflows the mine has acquired (from agricultural users) significant water licences. Some of this allocation may need to be permanently “retired” from the system. Mines now hold a significant portion of the region’s water licences.³¹
 - The cumulative impacts of mining on water quality (salinity and legacy voids) is not understood. This impact is predicted to peak until after the cessation of mining (see reports of Mr Droop, Mr Murphy and Dr Bacon)
- c. Heritage
 - Aboriginal heritage (see oral submission of Scott Franks and submission and report by Dr Tim Owen)
 - Historic heritage and landscape values (see report of Sharon Veale GML Heritage)
- d. Agricultural productivity
 - Further loss of valuable BSAL land and agricultural productivity (see report of Dr Peter Bacon and Gilbert & Sutherland)

³⁰ Transcript Day 1, Page 8, 11-22.

³¹ A study by Hydrocology Consulting dated July 2014 identified that at the time of the study mines held 23% of available Hunter regulated River WALs (excluding utilities) and 55% of high security licences

- Water impacts on soil productivity (see report of Gilbert & Sutherland and report of Dr Peter Bacon)
- e. Ecology: Potential destruction of habitat conditions for endangered species and native vegetation (see report of Dr Pam Hazelton)

Current data may not represent true cumulative impact.

63. An assessment of cumulative impacts requires: *“consideration of not just the development the subject of the application, but the development in combination with other development in the locality and the effect that the accumulation of such development and successive development of a similar type, will have on the community or locality. Thus it imports concepts of precedent as well as consideration of the effect of past approvals and developments. ...There is also judicial support for this interpretation to include not only the effect of the subject development, but to include other developments of a similar type that might take place in the future and developments already approved”*...³²
64. Assessment of cumulative impacts necessarily requires consideration of the impacts of other approved projects that affect the area. In identifying the impacts of other approved projects, it is foreseeable (and prudent to assume) that approved land uses would be undertaken to the limits authorised under their respective planning consents. That is to say the quantification of impact must assume that the surrounding development is undertaken at its approved extent.
65. The true cumulative impact of current operations and already approved projects may be significantly higher than currently experienced or detailed in monitoring data. This is because there are many mines in the Hunter Valley that are either approved but un-commenced or operating below their approved production rate. The table at Annexure B identifies coal mines in the Hunter Valley, the date of approval (as identified on the major projects register), the maximum permitted ROM production and reported ROM coal production over the past 5 years. Information on the current status of the project (ie on stand by, not commenced, or in care and maintenance has been provided by the HTBA).
66. For example, extracted below is information from Annexure B relevant to the Bengalla, Hunter Valley Operations, Mangoola, Mt Arthur and Mt Pleasant coal mines, being the 5 mines geographically most proximate to the proposal.
67. The table identifies the maximum ROM tonnes permitted to be extracted from the mine under the development consent and the actual ROM tonnes produces each year (expressed in million tonnes per annum (Mtpa)). The annual ROM tonne figures have been rounded.

³² *Hastings Point Progress Association Inc v Tweed Shire Council* [2008] NSWLEC 180 at [77–8], see also see for example *BT Goldsmith Planning Services Pty Limited v Blacktown City Council* [2005] NSWLEC 210, *Dames and Moore Pty Ltd v Byron Council* [2000] NSWLEC 46.

Mine	Max ROM	2015	2016	2017	2018	2019
Bengalla Mine (Open Cut 1995-2039)	15	10.5	10.67	10.9	11.3	12.5
Hunter Valley Operations North (Open Cut 2004-2025) & South (Open Cut 1980-2030)	42	17.16	17.97	19.48	18.99	19.19
Mangoola (Open Cut 2007-2029)	13.5	11.56	13.5	11.3	13.31	12.9
Mount Arthur Coal (Open Cut 2001-2026)	32	25.18	21.9	23.41	23.68	24.97
Mount Pleasant (Open Cut 1999-2026)	10.5	0	0	0	0.15	5.97
Total	113Mtpa	2079.4	2080.04	2082.09	2085.43	2094.53

68. The recorded air quality monitoring results for 2019 in Muswellbrook (for example) include the impacts of extraction, storage, handling and transport of 75.53Mt ROM coal from these five mines (as well as other sources). If each of these 5 currently approved mines were simultaneously operating at their maximum approved extraction rate, the region would be experiencing air quality impacts associated with 113Mt ROM coal being extracted, stored, handled and transported (i.e. 1.5times the 2019 volume).
69. Air quality in the Hunter Valley (and especially in Muswellbrook) is increasingly of concern. The airshed in the Hunter reaches the limit of, and often exceeds, health criteria. This is even when the existing approved mines are not operating at their approved capacity.
70. This proposal will, if approved, only exacerbate already poor air quality. On cumulative air impacts alone therefore, this proposal should not be approved.

Context of Cumulative Impacts

71. The environmental implications of the existing approved mines in the region and their associated cumulative impacts will (in the case of air quality and noise) be experienced for decades to come and/or will create permanent changes in landform and the availability and quality of water resources. Similarly, any approval of this mine will have implications long into the future. In this context, it is important to also consider how these cumulative impacts will be experienced in the future – for instance if climate patterns change, impacts affecting water resources and soil productivity may have an increased significance.

Conditions

72. If a project warrants refusal it cannot be made otherwise by the promise of conditions whether labelled as “strict” or otherwise. This application warrants refusal because it is not in the public interest, critical assumptions underpinning it are unsustainable and key predicted impacts have been ignored or remain unassessed.
73. The DPIE has asserted that all adverse impacts of this mine can be overcome by conditions of consent. The HTBA Experts have in their reports commented on the extent to which conditions of consent can address their issues of concern. In summary, the most serious issues of concern cannot be addressed by conditions of consent and there is insufficient information to determine practical and enforceable conditions of consent.
74. Setting meaningful and enforceable conditions cannot be done without a detailed understanding of baseline pre-mining conditions. This information is not, for example, available in respect of groundwater, air quality and acoustic impacts. The Mining SEPP requires specific consideration of whether impacts on water resources and ecology can be avoided or minimised by conditions. Many of the adverse impacts on water resources, Aboriginal heritage and ecology are consequential on inevitable subsidence impacts – which are under predicted and un-specifically assessed.
75. The impacts of this mine on water, agricultural productivity, ecology, Aboriginal heritage, equine health or the thoroughbred industry, human health) are:
- a. irreversible;
 - b. may not be perceived for some time afterwards; and
 - c. cannot be “made good”.
76. The purported economic benefits of this project are dependent on matters which are not (and cannot be) the subject of conditions of consent. The Commission cannot condition that the economic benefits will in fact occur as predicted by the proponent.
77. The proposed mine adjoins two extremely sensitive receivers. The sensitivity of the Coolmore and Goldolphin Studs to the impacts of mine have been acknowledged by the 3 previous assessments of mining in this location by the PACs and by the designation of the land adjoining the site as an ECIC.
78. The Mining SEPP effectively prohibits the Commission from conditioning the blasting and vibration impacts from the mine in a manner which could even theoretically make it an acceptable adjoining land use to a thoroughbred horse stud.
79. For clarity we note that in *Rocky Hill* Preston CJ clearly identified that the development standard in the Mining SEPP does not prevent a consent authority from refusing consent on grounds relating to, or imposing conditions to regulate, project-related air quality or

noise impacts that are not the subject of the development standard or social impacts resulting from project-related environmental impacts.

The public interest

80. The public interest is a mandatory consideration (s4.15). In the case of this project it is submitted that it is the most critical matter for consideration.

81. *“The phrase “the public interest” needs to be construed having regard to the subject matter, scope and purpose of the Act.”³³ ... The phrase “the public interest” has been construed by the Land and Environment Court of New South Wales to embrace ecologically sustainable development³⁴.*

82. The objects of the EP&A Act include *“to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment”*.³⁵ The term “ecologically sustainable development” is defined by reference to s 6(2) of the *Protection of the Environment Administration Act 1991* (NSW) as follows:

“ecologically sustainable development requires the effective integration of social, economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:

(a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

³³ See for eg (as referenced in Preston *ibid*): *Carstens v Pittwater Council* (1999) 111 LGERA 1 at 25; *BGP Properties Pty Limited v Lake Macquarie City Council* (2004) 138 LGERA 237 at [117]; *Port Stephens Pearls Pty Limited v Minister for Infrastructure and Planning* [2005] NSWLEC 426 at [54] and *Telstra Corp. Ltd v Hornsby Shire Council* (2006) 67 NSWLR 256 at 268 [121]-[124]; 146 LGERA 10 (15 August 2005) at 38 [121]-[124].

³⁴ Hon. Justice Brian J Preston “The Role of Courts In Relation To Adaptation To Climate Change”, A paper presented to: Adapting To Climate Change Law and Policy Conference June 2008 at page 10

³⁵ s1.3(b) EP&A Act

(d) *improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:*

(i) *polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*

(ii) *the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,*

(iii) *environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

83. Thus the requirement in s4.15 of the EP&A Act to have regard to the public interest, “obliges the consent authority to have regard to the principles of ecologically sustainable development in cases where issues relevant to those principles arise”.³⁶

84. *Ecologically sustainable development, in its most basic formulation, is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.*³⁷

85. There is no “need” for this mine. There are many mines in this region that are approved (and commenced) or that have decades to run. This mine in this location is in conflict with the key players in an industry that is critical to the long term sustainable future of the region. It will permanently degrade the agricultural productivity of the area and it will make a substantial contribution to GHG emission-induced climate change.

86. The economic benefits of this mine are aspirational and cannot to be secured by the imposition of planning consent conditions. These asserted benefits depend on the market constraints faced by the operator including the prevailing price for coal, the mine operator’s appetite for risk, future technological innovation in automation and export demand for this coal.

87. The adverse environmental and social impacts of this mine in this location are inevitable once work on this mine commences. Subsidence will occur, soil productivity will be lost, Aboriginal heritage and protected ecological species will be destroyed, the community will experience increased air quality impacts on their health and intrusive noise, substantial scope direct and indirect GHG emissions will occur during and well after mining ceases, ground water will be lost to the system and the contaminated mine void water will pose an ongoing risk.

³⁶ Preston Ibid at p11.

³⁷ *Telstra v Hornsby Shire Council* (2006) 67 NSWLR 256 (**Telstra**) at 108, referencing World Commission on Environment and Development, *Our Common Future*, 1987 at p. 44 (also known as the Brundtland Report after the Chairperson of the Commission, Gro Harlem Brundtland).



Precautionary principle

88. This is an instance where, consistent with the precautionary principle, “a cautious approach should be adopted in evaluating the various relevant factors in determining whether or not to grant consent”.³⁸

89. The precautionary principle mandates a cautious approach to decision making once two conditions are met: a threat of serious or irreversible environmental damage and scientific uncertainty as to the environmental damage. “These conditions or thresholds are cumulative. Once both of these conditions or thresholds are satisfied, a precautionary measure may be taken to avert the anticipated threat of environmental damage, but it should be proportionate”.³⁹

90. As identified in in *Telstra* “threats to the environment that should be addressed include direct and indirect threats, secondary and long-term threats and the incremental or cumulative impacts of multiple or repeated actions or decisions. Where threats may interact or be interrelated (for example where action against one threat may exacerbate another threat) they should not be addressed in isolation: threat of serious”⁴⁰. *Telstra* also identifies the factors to be applied in assessing the seriousness or irreversibility of environmental damage. These factors include:

- (a) the spatial scale of the threat (eg local, regional, statewide, national, international);
- (b) the magnitude of possible impacts, on both natural and human systems;
- (c) the perceived value of the threatened environment;
- (d) the temporal scale of possible impacts, in terms of both the timing and the longevity (or persistence) of the impacts;
- (e) the complexity and connectivity of the possible impacts;
- (f) the manageability of possible impacts, having regard to the availability of means and the acceptability of means;
- (g) the level of public concern, and the rationality of and scientific or other evidentiary basis for the public concern; and
- (h) the reversibility of the possible impacts and, if reversible, the time frame for reversing the impacts, and the difficulty and expense of reversing the impacts.

91. In this instance there is clear scientific evidence of threats of serious or irreversible environmental damage to water resources, Aboriginal heritage and threatened and endangered ecological communities. There is scientific evidence of the threats to equine health and the thoroughbred breeding operation conducted on Coolmore and Godolphin if

³⁸ *Greenpeace Australia Ltd v Redbank Power Company Pty Ltd and Singleton Council* (1994) 86 LGERA 143 per Pearlman J at 154.

³⁹ *Telstra* at 128

⁴⁰ *Telstra* 130



the mine operations cause dust, noise or blasting impacts to be experienced at these locations. These threats are complex and interconnected. If they eventuate, their impacts are irreversible.

92. There is uncertainty as to the nature and scope of the threat of environmental damage. There is an inadequate understanding of the impacts of the mine on subsurface soils and on local water availability and quality, the subsidence impacts of the mine which inform the assessment of impacts on soil, ecology and heritage are poorly understood.
93. Once the two preconditions are established the precautionary principle requires that the Commission must assume that there will be serious or irreversible environmental damage.
94. The precautionary principle mandates that where there is scientific uncertainty and there is a threat of serious or irreversible environmental damage, the proponent bears the burden of proving that the threat does not exist or is negligible. Absent that proof the decision-maker must assume that the threat of serious or irreversible environmental damage is no longer uncertain but is a reality.⁴¹

Intergenerational Equity

95. As stated by Preston CJ in *Rocky Hill*: “The principle of intra-generational equity provides that people within the present generation have equal rights to benefit from the exploitation of natural resources as well as from the enjoyment of a clean and healthy environment: *Telstra v Hornsby Shire Council* at [117]. The principle of inter-generational equity provides that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for future generations (see s 6(2)(b) of the *Protection of the Environment Administration Act 1991*): *Bulga Milbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited* (2013) 194 LGERA 347; [2013] NSWLEC 48 at [486], [492]”⁴².
96. The benefits and burdens of the project are unevenly distributed both within and across generations. The asserted benefits of the Proposal (which are solely economic and short term) benefit the proponent and, to a lesser extent, the broader community of NSW (via tax or royalty payments) whereas the direct burdens or costs of the Proposal (such as the environmental, social and economic costs) fall squarely on the local and regional community.
97. The project’s adverse environmental and social consequences (such as water impacts, climate change contributions, social and health impacts) may persist for generations.

⁴¹ See *Telstra Corporation Limited v Hornsby Shire Council* (2006) 146 LGERA 10 at [150]) and its application in *SHCAG Pty Ltd v Minister for Planning and Infrastructure and Boral Cement Limited* [2013] NSWLEC 1032.

⁴² *Rocky Hill* at 399



98. This mine in this location is not in the public interest and it ought not be approved.

**Beatty Legal Pty Limited
Sydney
25 November 2020**



Extracts from HTBA Experts Presentations regarding the Adequacy of Impact Assessment

1. Peter Scott – Rehabilitation Presentation

Slide 5: Provision for Rehabilitation of Maxwell Infrastructure is inadequate.

Slide 6: Rehabilitation of Maxwell underground hasn't been considered.

Slide 10: Uncertainty of Subsidence impacts not acknowledged.

Slide 10: There appears from information reported in the EIS and supporting documents that use of local geological and geotechnical data was limited.

Slide 10: Averages, rules of thumb and single values for key parameters were used and no sensitivity analysis of data was provided.

Slide 11: Maxwell Underground Subsidence is significant and potentially underestimated

Slide 14: Angle of Draw underestimated and not tested.

Slide 15: Significant Subsidence impacts are underestimated.

Slide 15: The EIS should have included a range of angles not just a single rule of thumb value for AoD, and should have included a sensitivity analysis based on representative data, but this wasn't done.

Slide 17: Rehabilitation bond likely to be inadequate for the full project area \$49.5M provisioned but an estimated \$105.7M + is likely to be required.

Slide 17: Uncertainty in Maxwell Infrastructure rehabilitation plan.

Slide 17: Significant consequential impacts from mine subsidence underestimated.

Slide 17: EIS is conceptual with minimal detail; uses averages rather than ranges of values, and did not identify and test for impacts adequately.

2. Sean Murphy – Groundwater Presentation

Slide 2 Comments: *In short, our review finds that the EIS predictions cannot be relied upon, either by the Proponent, the Department, or by a review body such as this Commission.*

Slide 3: Insufficient data and assessment of the alluvial systems and associated agricultural lands to the south and east of the project.

Slide 3: Inadequate analysis of the effects of subsidence on the groundwater - the current modelling approach does not adequately assess the effects of subsidence on groundwater and cannot be relied upon as a predictive analysis.

Slide 5: Inadequate Analysis of the effects of Subsidence on the Groundwater.

Slide 7: No accounting for Climate Change, an increasing trend to highly variable weather makes the possibility of high rainfall events likely. This realistically could lead to a water level rise in the voids above current levels leading to over topping and groundwater flow out of the voids.

ANNEXURE A

Slide 9: How does the assessment match with required confidence? It doesn't, there remains significant doubt in what the potential Impacts will be. The following issues remain unresolved...

Slide 9: The groundwater assessment does not provide any confidence in the predictive outcomes.

Slide 9: The effect of Subsidence on groundwater is insufficiently determined and potentially significantly greater than predicted.

3. Andrew McLean – Animal Cognition Presentation

Slide 6: Too many unknowns regarding blast characteristics and timing

Slide 6: The risks to thoroughbred breeding have been overlooked in the DPIE Maxwell project consent, in particular:

- The extreme flight response of thoroughbred horses
- The deleterious effects of unpredictable stimuli
- Fear reactions learned in a single episode
- Fear reactions are indelible
- Sensitisation leading to neophobia

4. Peter Bacon – Loss of Productive Land and Soil Presentation

Slide 9: Insufficient soil / landform investigations to identify BSAL

Slide 13: Extent of BSAL and Industry clusters are understated

5. Pam Hazelton – Impacts on Biodiversity Presentation

Slide 11: There is a lack of detailed information of the soil site characteristics in the areas of CEECs and the proposed offset site.

Slide 14: There is a lack of detailed information of the site characteristics of the areas of CEECs and the proposed offset sites and therefore difficult to determine whether the offset area would provide the same ecological value

6. Owen Droop – Surface Water Presentation

Slide 3: Lack of coherence between surface water and groundwater assessments - undertaken in 'Silos' with key interactions between assessments poorly developed, applied and justified.

Slide 3: Incomplete analysis of the effect of subsidence on surface hydrology Assessment of impact on local watercourses is rudimentary and does not take into account all factors which will impact on flows in reality.

Slide 4: There is no valid demonstration that the model does what it needs to which is to provide confidence in its predictive capability for both water quality and water quantity over the 26-year life of the project and beyond.

ANNEXURE A

Slide 4 Comments: *For the Maxwell Project, the reported calibration: -*

- *Was based on very limited real data – a maximum of 2 years which really gives no indication of potential behaviour over any meaningful range of conditions*
- *showed very poor reproduction of that recorded data*
- *And subsequently required an effectively arbitrary addition of some 2,200 ML/a to the model to match the recorded behaviours – noting that if adopted this arbitrary input turns into approximately 60,000 ML of water over the life of the Project*

Slide 7 Comments: *Project reporting effectively assumes away the impact of subsidence on surface flows and provides no meaningful analysis of the potential impact on the environmentally important low flow portion of the flow regime.*

Slide 8 Comments: *A key example of the incompleteness of analysis is the treatment of the extent to which subsidence could be expected to occur.*

Slide 10 Comments: *The legacy this leaves is the potential for, perhaps sooner perhaps later, flow of salt and other toxicants from the pits at rates and/or levels which have not been recognised, considered or assessed.*

Slide 11: This irreversible nature of Project impacts requires a high level of confidence in assessment – which is not provided by the assessments undertaken.

Slide 12: We can't rely on critical parts of the analysis.

Slide 12 Comments: *Lack of a justifiable water balance model and incomplete subsidence analyses means we can't trust critical parts of the work which has been used to draw conclusions about the likely impacts.*

7. Frank Butera – Background Noise Presentation

Slide 2: WM did not complete any background noise measurements and it is unclear if WM visited site. WM adopts data that has not been verified.

Slide 3: The WM approach is similar to a desktop assessment which is inconsistent with verifying, measuring existing conditions and completing site noise measurements.

Slide 4: It is inappropriate to accept the noise limits presented in Table 1, due to:

- Continuous exceedance of the NSW noise policy limits.
- Misrepresentation and misleading use of not reliable background noise data conducted between 2003 and 2006 at four (4) locations
- WM have not verified the existing noise conditions

Slide 11: Acknowledging that background noise levels are required to address Social Impact and noting that the WM report omits the data, the presented Social Impact Assessment remains incomplete and inaccurate.

Slide 13: There is no assessment with regards to human or animal comfort from ground borne vibration, blast overpressure or noise impacts associated with the proposed blasting.

Slide 17: The noise assessment is incomplete and fails to provide an intrusiveness assessment with regards to true and current background noise levels.

ANNEXURE A

8. Marsden Jacob Associates – Economic and Social Impact Assessment Presentation

Slide 3: The economic analysis does not factor in legacy or cumulative impacts of the mine, which would further increase the costs associated with the mine and cumulative impacts have not been valued in the economic analysis.

Slide 14: Marsden Jacob's review has identified the assumed costs and benefit are biased in favour of the project, so the current assessment cannot be relied upon as a reliable prediction of future outcomes.

9. Peter Stephenson – Air Quality and Greenhouse Gas Emissions Presentation.

Slide 6: Emission controls are generic or not included, for combined mining & coal handling operations.

Slide 9: ...cumulative impacts are underestimated.

Slide 18: Scope 1 & 2 GHG emission data presented for 26 year life of project show significant fugitive annual variations. However, only the 26 year average has been reported to DPIE. This understates emissions on an annual basis.

Slide 20: Scope 3 global GHG emissions from transport & end use of Maxwell coal are NOT addressed by DPIE.

Slide 20: DPIE Assessment dismissed Air Quality matters in favour of social & economic factors.

10. Brett Tennent-Brown – Effects of Coal Mining on Equine Health Presentation

Slide 3: Department's final report ignores equine health.

Slide 3: Report provides limited information to support contention that mining activities will not adversely affect equine health.

Slide 3: Ignores known effects of dust derived from coal mining and ignores effects of increased dustiness on the lung's normal defence mechanisms

Slide 3: Cites outdated and irrelevant material to support contention that equine health will be unaffected.

Slide 5: Methods used to determine air quality are almost certainly insufficient.

Slide 6: Insufficient information has been provided to determine that a risk to equine health does not exist.

Slide 6: Air quality methodologies used are inadequate to assess risks to horses.

Slide 6: Lack of evidence on the adverse effects of dust arising from coal mining on equine health does not indicate that there is no effect.

Annexure B: Current Coal Mines in Upper Hunter

November 2020

Mine	Max ROM (tpa) ¹	2015 ROM (t) ²	2016 ROM (t)	2017 ROM (t)	2018 ROM (t)	2019 ROM (t)	Status ³
Ashton Coal Complex (Open Cut 2001-2024)	8,600,000	3,001,216	2,378,739	2,790,532	1,947,167	2,035,229	Currently operating, mining at NEOC ceased in 2012.
Austar Coal Project (Underground 1996-2030)	3,600,000	2,097,195	272,018	2,015,187	1,413,065	705,352	In care and maintenance since 2018.
Bengalla Mine (Open Cut 1995-2039)	15,000,000	10,500,000	10,670,000	10,900,000	11,300,000	12,500,000	Currently operating.
Bloomfield (Open Cut 2009-2030)	1,300,000	1,220,000	1,245,000	978,000	1,083,000	853,000	Currently operating.
Bulga Open Cut (Open Cut 1999-2039)	12,200,000	9,458,505	8,954,709	8,807,000	12,092,025	12,200,000	Currently operating.
Bulga Underground (Underground 2004-2031)	14,000,000	4,626,318	4,733,655	6,145,750	1,281,682	0	Mining ceased in 2018. Blakefield North site approved but undeveloped.
Dartbrook Thermal (Underground 1991-2027)	6,000,000	0	0	0	0	0	In care and maintenance since 2006.
Donaldson Abel (Underground 2007-2030)	6,100,000	1,807,933	265,425	0	0	0	In care and maintenance since May 2016.
Glendell (Open Cut 1983-2024)	4,500,000	4,380,000	4,470,000	3,960,000	4,010,000	4,240,000	Currently operating.

¹ Taken from current development consent

² Taken from latest publicly available Annual Environmental Management Report

³ Information provided by HTBA/members

Annexure B: Current Coal Mines in Upper Hunter

November 2020

Mine	Max ROM (tpa) ¹	2015 ROM (t) ²	2016 ROM (t)	2017 ROM (t)	2018 ROM (t)	2019 ROM (t)	Status ³
Hunter Valley Operations North (Open Cut 2004-2025) & South (Open Cut 1980-2030)	42,000,000	17,160,000	17,970,000	19,480,000	18,990,000	19,190,000	North and South currently operating. Carrington Pit (Nth) no longer used as of 2019.
Integra Open Cut (Open Cut 1990-2040)	4,500,000	0	3,577,233	3,818,138	2,979,572	1,213,920	Currently operating.
Integra Underground (Underground 2010-2035)	4,500,000	0	0	1,266,000	2,219,076	2,629,615	Care and maintenance from 2014-17. Currently operational.
Liddell Coal Operations (Open Cut 2002-2028)	8,000,000	6,192,227	5,940,742	4,259,086	5,933,351	5,863,647	Currently operating.
Mangoola (Open Cut 2007-2029)	13,500,000	11,563,144	13,499,455	11,302,377	13,310,870	12,920,522	Currently operating.
Mount Arthur Coal (Open Cut 2001-2026)	32,000,000	25,184,055	21,904,000	23,407,000	23,679,000	24,969,000	Currently operating. Underground section is approved but undeveloped.
Mount Arthur Underground (Underground 2008-2030)	8,000,000	0	0	0	0	0	Approved in 2008 and remains undeveloped.
Mount Pleasant (Open Cut 1999-2026)	10,500,000	0	0	0	150,000	5,970,000	Commenced coal extraction in 2018. Currently operating.
Muswellbrook (Open Cut 2003-2022)	2,000,000	0	1,652,181	1,784,386	1,711,271	1,358,987	Currently operating.
Mount Owen (Open Cut 2016-2037)	10,000,000	8,040,000	8,640,000	8,650,000	8,820,000	8,930,000	Currently operating.

Annexure B: Current Coal Mines in Upper Hunter

November 2020

Mine	Max ROM (tpa) ¹	2015 ROM (t) ²	2016 ROM (t)	2017 ROM (t)	2018 ROM (t)	2019 ROM (t)	Status ³
Newstan (Underground 1999-2021)	4,500,000	1,433,000	888,000	1,732,000	1,354,000	1,423,000	Currently operating.
Ravensworth East (Open Cut 2016-2037)	4,000,000	1,330,000	1,280,000	1,350,000	1,310,000	1,490,000	Currently operating.
Ravensworth North (Open Cut 1991-2039)	16,000,000	9,470,000	10,300,000	11,285,000	13,898,000	14,922,000	Currently operating.
Ravensworth Underground (Underground 1996-2024)	7,000,000	0	0	0	0	0	In care and maintenance since 2014.
Tasman Underground (Underground 2004-2029)	1,500,000	0	0	0	0	0	Approved in 2013 and remains undeveloped.
Mount Thorley Warkworth (Open Cut and Underground 2003-2036)	28,000,000	17,060,000	18,050,000	17,690,000	17,610,000	17,610,000	Currently operating.
United Wambo (Open Cut and Underground 2004-2042)	14,700,000	9,200,000	9,400,000	8,300,000	7,710,000	7,980,000	Mining operations suspended since 2010 at United Collieries. Merged with Wambo Coal Mine in 2019. Temporary shutdown in September 2020 and half of workforce furloughed.
Total	282,000,000	143,723,593	146,091,157	149,920,456	152,802,079	159,004,272	

ANNEXURE C - Figure 04-8 Land and Soil Capability diagram (extracted from Maxwell Project Agricultural Impact Assessment, August 2018)

