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Supplementary expert report of Greg Houston

A report for Clayton Utz on behalf of Anglo American
Metallurgical Coal Ptd Ltd

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Contact Us

Sydney

Level 40
161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800

Singapore

8 Marina View
#15-10 Asia Square Tower 1
Singapore 018960

Phone: +65 6817 5010

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Executive summary

I have been asked by Clayton Utz to prepare this report on behalf of Anglo American Metallurgical Coal (Anglo), for submission to the Planning Assessment Commission (PAC) that is to determine (the determining PAC) Anglo's application for approval of the Drayton South Coal Project (the project).

This is the second report I have prepared in relation to the project, and should be read in conjunction with my first report, dated 29 March 2016.

Analysis does not depend on whether stallions follow broodmares

Much of the material put before the determining PAC in relation to my first report focuses on why a particular assumption that is said to underpin my analysis is wrong, and so the conclusions that I draw are similarly compromised. The critical assumption I am said to have made is that, in relation to location decisions, stallions follow broodmares when, in fact, many submitters with thoroughbred breeding interests and knowledge state that the correct location dynamic is for broodmares to follow stallions.

The analysis in my first report assumed that all of the covers presently being provided by stallions standing at Coolmore and Darley stud farms would instead be undertaken at those studs' new location. This analysis was not based on any assumption as to whether stallion or broodmare owners instigate the process of moving their thoroughbreds from one location to another, or as to the dynamics of which party would make what decision first, etc. Rather, my results are consistent with adopting the assumption preferred by Dr Stowe and many others that 'broodmares follow stallions'.

In my opinion, the change in the number of covers is a good approximation for the effect of a change to the functioning of the equine cluster, because the number of covers is highly correlated with the number of thoroughbreds and broodmares in the region. Stallions standing at Darley and Coolmore accounted for [REDACTED] and [REDACTED] per cent of the covers in the Upper Hunter region in the 2014 breeding season, and so mares that were covered by those stallions can be assumed to account for approximately these same proportions of the total spending in the Upper Hunter on agistment-related services for thoroughbreds.

Although the equine critical industry cluster (CIC) may reduce in size if Coolmore and Darley left the Upper Hunter, the equine CIC would not collapse even if all of the stallions currently standing at Coolmore and Darley left as well as the broodmares they cover. The equine CIC would still be approximately double the size of any other, successful thoroughbred breeding cluster in Australia or New Zealand. This does not account for the likely expansion by other, competing studs in the Upper Hunter cluster as they take advantage of the gap left by Coolmore and Darley. Such an assumption represents the worst case scenario for the equine CIC since, for the reasons I describe in my first report and on which I elaborate below, it is much more likely that not all of these stallions and broodmares would leave the Upper Hunter.

Dynamic effects of the studs relocating lessen impact on the cluster

My assessment of the decisions that each party will need to take in the event that Coolmore decides to relocate its operations away from the Upper Hunter as a result of the project being approved shows that:

- on its own estimates, it would take up to eight years for Coolmore to develop a new stud farm in, say, Goulburn, Victoria – if Coolmore was instead to purchase an existing stud facility, this could displace (most likely to the Upper Hunter) some of the stallions already standing in Victoria, reducing the effect on the Upper Hunter equine CIC;
- to the extent that the owners of stallions presently standing at Coolmore were sufficiently concerned at the perceived impact of the project, they would most likely move their thoroughbreds to another stud in the Upper Hunter before mining began – in that event, those owners may have no reason to follow Coolmore once, up to eight years later, it was finally able to relocate away from the Upper Hunter;

- alternatively, to the extent that the owners of stallions presently standing at Coolmore were not concerned at the perceived impact of the project, they may not move their stallions at all, in which case Coolmore would also have no reason to move;
- broodmare owners have no reason to leave the Upper Hunter until or unless some of the Coolmore stallions relocate away – this means that each stallion owner would (after up to eight years, when Coolmore had established its new property) face the choice of either:
 - > moving to Goulburn with Coolmore, on the assumption that all of its broodmare owning customers would follow; or
 - > leaving Coolmore and moving to a new location in the Upper Hunter, where it need not make any assumption as to the likelihood that its broodmare owning customers will all follow;
- the stallion services business is dynamic, with over two thirds of the premium stallions in any one year no longer remaining in that group eight years later – it follows that, by the time Coolmore had developed its new stud farm in Goulburn, there is no basis on which to assume it will have retained its current share of premium stallions; rather, Coolmore can be expected to have lost two thirds of its premium stallions through natural attrition, and would need to compete with all other studs to identify and arrange to stand at its property a substantially new crop of premium stallions;
- if Coolmore were to move to Goulburn, there would need to be a [REDACTED] per cent increase in the number of covers undertaken in that location, unless Coolmore was to accept a reduction from the number its stallions presently undertake – however, it is improbable that there is a sufficient number of broodmare farms maintaining, unused, such tracts of land and facilities at the appropriate standard, in order to accept such an increase in the number of broodmares; rather, it is more likely that:
 - > the number of broodmares able to relocate would need to increase gradually over a number of years after the first stallions moved to that region; and
 - > consequently, only a few stallions could move to Goulburn each year without there being a shortage of broodmares;
- setting aside the constant change in composition of those stallions regarded as being in the premium category, the lengthy timeline for these contemplated changes to occur means that:
 - > there is ample time for shuttle and other stallions to enter and stand in the Upper Hunter if any of the existing stallions were to leave; and
 - > in any case, the project would be in the latter stages of its life before it would be practicable for a significant number of stallions to leave the Upper Hunter – since, in the interim, there would be shortages of suitable, fully developed farms at which those stallions could stand.

Similarly, my assessment of the decisions that each party would need to take in the event that, if the project was to be approved, Darley decided to relocate its Woodlands broodmare operation away from the Upper Hunter shows that:

- to the extent that it was sufficiently concerned at the perceived impact of the project, Darley would need to move its broodmares before mining began – however, given the integrated nature of its Woodlands and Kelvinside facilities, the only way to achieve this whilst keeping its stallions and broodmares in close proximity would be to move its broodmares to another location in the Upper Hunter while maintaining its Kelvinside stud farm; and
- since Darley's Kelvinside stud farm is unaffected by the proposed mine, it must be significantly less costly and much easier in terms of operational practicalities for Darley to move its broodmare facility to another location in the Upper Hunter, rather than move both its broodmare and stud farms to Victoria.

In my opinion, there is sufficient evidence as to the relative magnitudes of the costs and benefits to draw safely the conclusion that it is not in Coolmore or Darley's economic interests to relocate away from the Upper Hunter.

Further, my analysis shows that, even if Coolmore and Darley were to relocate their operations away from the Upper Hunter:

- constraints as to the availability of suitable land and facilities that the studs themselves have emphasised mean that such a decision could only be given effect over an extended period of time;
- decisions by the principal customers of Coolmore and Darley as to whether and when they may decide to relocate outside the Upper Hunter would generally not be required for many years; and
- the extended period of time over which it would be practicable for the full complement of stallions and broodmares served by Coolmore and Darley's existing facilities to relocate outside the Upper Hunter would present a long period over which rival breeding operations could respond to the gap in the market left by Coolmore and Darley.

It follows that the structural threat to the equine CIC from the project is minimal or non-existent. There is no reasonable basis to conclude that the Upper Hunter equine CIC would be under threat or at risk of collapse from the project.

Owners would move their stallions into the Upper Hunter

Stallion owners from elsewhere in Australia as well as the northern hemisphere would have both the ability and a strong incentive to bring their stallions to the Upper Hunter in the event that any Coolmore or Darley stallions were to leave the region. In this report, I address each of the potential barriers to entry raised by Dr Stowe and/or Dr Williams, that seek to refute this earlier finding.

First, the limited number of prospective premium stallions would not prevent stud farms from expanding in response to Coolmore and/or Darley leaving the Upper Hunter because:

- owners of existing stallions can easily move their stallions to the Upper Hunter;
- the supply of stallions is dynamic, and so a large proportion of the current group of top stallions will no longer be in that bracket by the time Coolmore and/or Darley leave, if at all; and
- the owners of shuttle stallions can quickly respond by choosing to stand them in the Upper Hunter for one or more seasons, as market opportunities arise.

Second, the large capital cost of a stallion is not a barrier to entry – it is a standard principle of competition economics that a fixed cost is not a barrier to entry if it can be recouped on exit. The cost of purchasing a stallion can largely be recouped by selling the stallion, and so the capital sum involved cannot properly be regarded as a barrier to entry.

Third, although stallions are individually differentiated, this does not prevent other stallions from replacing any that leave the Upper Hunter. On the contrary, the existence of differentiation among broodmares (and so the preference of their owners) implies that stallion owners will benefit from being located in close proximity to a large pool of differentiated broodmares (and vice versa). Such differentiation serves to strengthen the motivation of owners to stand their stallions in the Upper Hunter if other stallions were to leave.

Fourth, if Coolmore and Darley were to relocate and all of their stallions were to follow, there is no risk that an 'excess supply' of stallions in the Upper Hunter could deter entry. On the contrary, the exodus of stallions would cause a shortage in the Upper Hunter, attracting other stallion owners.

In my opinion, the only notable barrier to entry and expansion in thoroughbred breeding is the availability of appropriate land for stallions/broodmares which, as emphasised by Coolmore and Darley, can take many years to develop. This requirement places a constraint on the rate at which any locational cluster can expand and, further, during the time that new land suitable for a breeding operation is being developed in Victoria, land suitable to support entry or expansion in the Upper Hunter would be already available.

Finally, following its own, independent assessment in 2008, the Australian Competition and Consumer Commission (ACCC) concluded that there were low barriers to entry in thoroughbred breeding. The ACCC is the pre-eminent, expert government body on competition matters, and routinely assesses the nature and extent of barriers to entry in particular industries for the purpose of its merger clearance and competition law enforcement activities. The ACCC is impartial and could not have foreseen the potential significance of the question of barriers to entry in the present context. In my opinion, its views should be given substantial weight.

Perceptions are not crucial to stud or broodmare farms

In my first report I concluded that perceptions of Coolmore's stud and Darley's Woodlands broodmare farm would not be substantially affected by the proposed Drayton South mine. In this report, I provide further evidence to support this proposition and address some of the claims made by Dr Stowe, Dr Bell and Dr Williams in relation to my earlier conclusion and the analysis that supports it.

Dr Stowe contends that the perceptions of the customer are of 'utmost importance to Coolmore and Darley' and are 'critical to farm profits', although she does not offer any substantive evidence or reasoning for this claim. However, these claims conflict with the explanation given elsewhere in Dr Stowe's report that:

...stud fees for U.S. sires do not depend on their location; rather, it depends [sic] racing performance of their progeny, the commercial viability of a sire's progeny, and external economic factors. Therefore, stallions should command the same stud fee regardless of where they stand.

Dr Stowe's conflicting explanation of the factors that do determine stallion fees is supported by her own empirical research, which examined the main determinants of cover fees for stallions at the beginning of their careers. Dr Stowe found that a number of variables affect cover fees, including the stallion's earning from races, whether the stallion had won the Kentucky Derby and the cover fee for the stallion's sire.

The location and characteristics of the farm or stud at which a stallion is standing within a cluster (and so the perceptions of customers about its location and characteristics) were found by Dr Stowe not to affect the cover fee. It follows that there is no reasonable basis on which to claim that the perceptions of customers (being broodmare owners, deciding which stallion to have cover their mare) as to the location and characteristics of the stud at which a stallion stands are important in determining customers' choices or farm profits.

Dr Bell makes a similar claim that perception is important, but without providing any empirical or other significant evidence beyond his reference to the results of a survey conducted by Coolmore. I explain that this survey is not robust and, as such, no weight should be given to it.

Dr Williams claims that the loss of amenity/reputation to Coolmore and Darley is clearly material because they have spent so much time and resources opposing the proposed mine. However, Anglo has spent many times the resources mobilised by the studs and so, by Dr Williams' rationale, the benefit of the project to Anglo must be greater than the cost of the project to the studs.

Finally, the vast majority of stud and broodmare farms operating in the Upper Hunter cluster have not made submissions to the determining PAC. Were it to be the case that the proposed mine was expected to have a significant, detrimental effect on the equine CIC, I would have expected that virtually all of the broodmare and stud farms in the Upper Hunter would have made strong representations opposing the project. I hold this expectation because the prospect of significant detriment to the cluster would severely diminish the value of those other farms' most valuable asset – their land.

Rather, if one was to draw an inference on a similar basis to that of Dr Williams, the appropriate conclusion would be that the silent majority of studs and broodmare farms perceive that the project will cause either no detriment to their individual interests or a degree of upside in terms of potential competitive advantage.

1. Introduction and context

I have been asked by Clayton Utz to prepare this report on behalf of Anglo American Metallurgical Coal (Anglo), for submission to the Planning Assessment Commission (PAC) that is to determine (the determining PAC) Anglo's application for approval of the Drayton South Coal Project (the project). This supplementary report should be read in conjunction with my first report, dated 29 March 2016.

I am a founding Partner of the firm of expert economists, HoustonKemp. I set out my expertise in my first report.¹ Of particular relevance to matters the subject of my first and this supplementary report is a separate report I prepared in 2011 on economic characteristics of the thoroughbred racing and breeding industry. The client for my 2011 report was a group representing the governing bodies of the Australian thoroughbred racing industry, ie, the Australian Jockey Club, the Victoria Racing Club, the Australian Racing Board and the Australian Turf Club.

The context for my 2011 report was Federal Court proceedings that sought to challenge the natural cover requirements that govern the breeding of thoroughbreds – on the basis that they breached the competition provisions of section 45 of the *Competition and Consumer Act 2010*. Among its various implications, the natural cover requirement is fundamental to the existence and sustainability of the equine cluster in the Upper Hunter, because it creates strong forces for stallions and mares to be proximately located during each breeding season.

In the course of preparing my 2011 report, I undertook detailed analysis of the structure and essential economic characteristics of the thoroughbred breeding industry, including the markets in which stallion services are provided to the owners of broodmares. My analysis and conclusions in relation to the operation of those markets and, in particular, the competitive effects of the natural cover provisions, were accepted by the Court.

In the current context, my first report in relation to the effect of the project on the Upper Hunter equine industry cluster addressed two principal questions arising in relation to the November 2015 review report of the PAC² (the review PAC) on the project, which I summarise further below.

The context for the questions the subject of my first report was particular aspects of the findings of the review PAC in relation to the project. These can be summarised as, notwithstanding that:

'the impacts [of the project] would generally be considered acceptable in another location in the Hunter Valley',³

...the indirect and dynamic visual impacts of the project represent a risk to the image and reputation of the studs,⁴

In light of these indirect and visual impacts, if the project was to proceed:⁵

...the studs may leave the Hunter Valley rather than put up with the impacts of the mine, regardless of their severity.

¹ Houston, G, *Expert report of Greg Houston*, 29 March 2016 (hereinafter: 'my first report'). pp 7-8.

² Planning Assessment Commission, *Drayton South Open Cut Coal Project, Review Report*, November 2015 (hereinafter: 'PAC review report').

³ PAC review report, p 51.

⁴ PAC review report, p iii.

⁵ PAC review report, p ii.

The review PAC then observed that:

...the scenario of the studs leaving the Hunter is the critical issue for the decision maker to weigh up in considering whether to approve the project.⁶

In evaluating that risk, the review PAC found that the particular affected properties, being Coolmore's stud farm and Darley's Woodlands broodmare farm, were:

...key to the sustainability of the Equine Critical Industry Cluster in the Upper Hunter and to NSW.⁷

On this basis, the review PAC found that:

The likely effects of the studs relocating would be that the cluster would suffer to a significant extent and enter a potentially terminal decline.⁸

Summarising, the review PAC stated that:⁹

The proposal does not just threaten the viability of two neighbouring horse studs, but by virtue of the significance of those studs, it places the wider Equine Critical Industry Cluster under threat. Further the reputational damage to the region's other sectors must also be considered, as collapse of one sector, on account of the impacts of mining have the potential to damage both the region and NSW's reputation for quality agricultural production and a clean health environment, with implications for both the Hunter's viticulture and tourism industries.

In light of these findings of the review PAC, my first report addressed two questions, ie:

- is it likely that to be in the economic interests of either Coolmore and/or Darley to leave the Upper Hunter critical industry cluster (the equine CIC)?
- if these two operations were to leave, to what extent might this place the future of the Upper Hunter CIC at risk of collapse?

My first report drew on extensive empirical evidence as to the various characteristics, size and essential economic features of the equine CIC, from which I concluded that:

1. It was not in either Darley or Coolmore's interests to leave the Upper Hunter CIC – for the principal reason that there is no alternative locational cluster of thoroughbred horse breeding operations anywhere in the southern hemisphere that has the same locational attributes of the Upper Hunter – these locational attributes include its ideal climatic conditions, its extensive supporting infrastructure and workforce, and the continuing strong advantage of having a substantial stock of both stallions and broodmares that are proximately located, thereby ensuring that the owners of both stallions and broodmares have the deepest pool from which to choose in buying and selling stallion cover services;¹⁰ and
2. If either or both of Darley or Coolmore were nevertheless to leave the area, the Upper Hunter CIC would still be approximately double the current size of the next largest thoroughbred breeding areas in the southern hemisphere, even before allowing for the potential expansion of existing, rival breeding operations or the likelihood that new entrants would take advantage of the gap in the market created by Darley or Coolmore's departure.¹¹

The Department of Planning and Environment sought a peer review of my report from Professor Jeff Bennett, of the Australian National University,¹² and then a further review¹³ of the implications of material

⁶ PAC review report, p iii.

⁷ PAC review report, p iii.

⁸ PAC review report, p 51.

⁹ PAC review report, p iii.

¹⁰ My first report, p 5.

¹¹ My first report, pp 5-6.

¹² Bennett, J, *Peer review of the Expert Report of Greg Houston*, 22 June 2016.

submitted by various parties on behalf of the thoroughbred industry. Both of those peer reviews found that the analysis set out in my initial report was sound, and the conclusions I drew were reasonable. To the extent that Professor Bennet made a constructive criticism of my analysis, it was to observe that I had most likely underestimated the extent of the response of competing studs, seeking to take advantage of the opportunity created by the departure of either Darley or Coolmore from the Upper Hunter.¹⁴

Both prior to and following the preparation of my report and the two peer reviews undertaken by Professor Bennett, considerable material has been prepared by parties associated with the studs or thoroughbred breeding interests, commenting on aspects of my first report.

The purpose of this supplementary report is to identify and summarise the principal observations drawn in that material and, where appropriate, to address those points that seek to call into question the findings in my first report.

I have organised this supplementary report as follows:

- first, I summarise the principal observations made in relation to my first report in the subsequent material that has been put before the determining PAC;
- second, I explain why an assumption that is widely contended as both having been made by me and as critical for the conclusions in my first report is neither part of, nor relevant for, my earlier analysis and conclusions;
- third, using information provided by the studs themselves in combination with industry data, I describe in some detail the dynamics of the process that would need to follow a decision by Coolmore and/or Darley to leave the Upper Hunter, through to them actually departing for another location outside the region;
- fourth, I present a range of industry data that shows the basis for my earlier observation that, to the extent the owners of any stallions standing at either Coolmore or Darley also decided – in conjunction with these stud owners – to relocate their thoroughbreds away from the Upper Hunter region, other stallion owners would be likely to take the opportunity to fill the gap in premium stallions that may emerge in the equine CIC; and
- fifth, I show that the available empirical evidence is that perceptions held by the broodmare customers of stud farms either do not affect or are not important in the decision as to which stallion to choose for the covering of a broodmare.

¹³ Bennett, J, *Review of the Supplementary Submission by the Hunter Thoroughbred Breeders Association, Coolmore Australia and Darley Australia on the Drayton South Coal Project*, 21 August 2016.

¹⁴ Bennett, J, *Peer review of the Expert Report of Greg Houston*, 22 June 2016, p 8.

2. Principal observations in relation to my report

In this section I identify and synthesise the main observations made in the material that has been put before the determining PAC in relation to the analysis and conclusions in my first report.

It is convenient to organise these observations by reference to four assumptions that Dr Jill Stowe¹⁵ contends are either made by me or underpin the analysis in my first report, and the two main additional matters raised by Dr Philip Williams.¹⁶ I refer to these as contentions since, as I explain subsequently, some of the assumptions that are said by Dr Stowe and others to underpin my first report are, in fact, neither present nor necessary for the conclusions I draw.

The four assumptions that Dr Stowe identifies as underpinning my report but for which she contends that a different view is appropriate are that:¹⁷

1. The thoroughbred breeding industry is characterised by low barriers to entry and so the gap in the market left by the departure of Darley and Coolmore could be filled either easily or in a timely manner.

Material submitted by Dr Stowe and others, including that of Tom Reilly¹⁸ and Darley (otherwise known as Godolphin),¹⁹ contends that barriers to entry are high.

2. The perception of the stud farms held by their customers is inconsequential to farm profits.

Dr Stowe contends that customers' perception of stud farms is critical to their profits. Customers' experiences on the farm may determine which farm they partner with for the covering of their broodmare, and every detail matters whenever they visit a farm. Material provided by Dr Lance Bell makes a similar point.²⁰

3. Stallions follow the broodmares in the thoroughbred breeding industry.

When it comes to location decisions, Dr Stowe assumes that broodmares follow stallions and so, if either Coolmore or Darley were to leave the Upper Hunter, broodmare owners seeking to have their thoroughbreds covered by a stallion standing at either Darley or Coolmore would also move to that location.

Many other submitters provide material seeking to emphasise the point that broodmares follow stallions, and not the other way around.²¹

4. The equine CIC in the Upper Hunter region would not be affected by the departure of Coolmore and Darley if they chose to leave.

Dr Stowe argues that, in the event that Darley and Coolmore were to leave the Upper Hunter, and on the assumption that Upper Hunter broodmares will or must follow the Coolmore/Darley stallions, the regional economy characterised by the Upper Hunter equine cluster could face a significant negative impact.²²

Two additional observations made by Dr Williams are that:²³

¹⁵ Stowe, J, *Comments at Public Meeting*, 21 November 2016, available at <http://www.pac.nsw.gov.au/resources/pac/media/files/pac/projects/2016/09/draxton-south-coal-project/public-meeting-presentations-and-comments/1-jill-stowe.pdf>, accessed 5 December 2016.

¹⁶ Williams, P, *Draxton South Coal Project*, 24 November 2016.

¹⁷ Stowe, J, *Comments at Public Meeting*, 21 November 2016.

¹⁸ Reilly, T, *PAC Presentation*, 21 November 2016, p 8.

¹⁹ Godolphin, *Letter to Mr Paul Forward RE: Draxton South Coal Project – D431/16*, 30 November 2016, pp 8-9.

²⁰ Dr Bell argues that the entire brand promise of Coolmore becomes a lie if there is an open cut coal mine that can be seen, heard or smelt from its property. Bell, L, *Review of "Expert Report of Greg Houston" of 29 March 2016*, November 2016, p 5.

²¹ For example: Guihot, D, *Presentation to PAC by Long-Term Horse Breeder and Corporate Finance Expert Darryl Guihot*, 17 November 2016, p 25; Godolphin, *Letter to Mr Paul Forward RE: Draxton South Coal Project – D431/16*, 30 November 2016, p 7.

²² Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 13.

- the significant time and resources being expended by Coolmore and Darley in opposing the project means that the loss to them of amenity/reputation is clearly material;²⁴ and
- Professor Bennett and myself are making a judgment as to the magnitude of the loss of amenity and the costs of Coolmore and/or Darley relocating without any data or business experience to support judgements of this kind,²⁵ and that no economist can say whether or to which alternative location Coolmore and/or Darley would choose without access to the magnitude of the costs and benefits of the various alternatives.²⁶

A number of other submitters associated with the Upper Hunter thoroughbred breeding industry make the same points as Dr Stowe. For example, the presentation given by Mr Darryl Guihot emphasised that:²⁷

- broodmares are mobile, since their owners can decide to switch the agistment services they obtain from one broodmare farm to another, virtually overnight, and so the departure of the Coolmore and Darley stallions would be expected to be followed by the departure of approximately 3,000 broodmares in the first wave;
- the three most important factors for a buyer of a yearling all involve the identity of the sire; and
- Coolmore/Darley stallions cannot be used if the project goes ahead unless they move.

The material submitted by Mr Tom Reilly emphasises that:²⁸

- the Hunter Valley is the epicentre of the breeding industry in Australia, and any mining project which could damage the reputation of the equine CIC needs to be treated as a significant risk;
- the idea that stallions follow mares is untrue – Coolmore and Darley’s stallions would attract the same number and standard of mares if they were in South Australia;
- the barriers to entry, in terms of capital outlay are ‘enormous’;
- stallions have been shuttled for three decades and it was farms in the Hunter Valley that drove this development – but the demand for these stallions has fallen recently; and
- recent investors in thoroughbred breeding in Australia have been outside of New South Wales.

Finally, the material submitted by Rod Carr of Marsden Jacobs and Associates argues that the market impact assessment by myself and Professor Bennett are based on assumptions that do not reflect the fundamentals of the industry, eg, broodmare farms are service providers to broodmare owners, who in turn are the buyers of stallion services, while premium stallions are very rare and expensive.²⁹

²³ Dr Williams also proposed that the studs be granted rights to block the mine and allow the mine to pay the studs to give up that right. This is not relevant to the questions I have been asked to address in my first report, or to my answers to those questions. See: Williams, P, *Drayton South Coal Project*, 24 November 2016, p 4.

²⁴ Williams, P, *Drayton South Coal Project*, 24 November 2016, pp 13-14.

²⁵ Williams, P, *Drayton South Coal Project*, 24 November 2016, pp 13-14.

²⁶ Williams, P, *Drayton South Coal Project*, 24 November 2016, pp 13-14.

²⁷ Guihot, D, *Presentation to PAC by Long-Term Horse Breeder and Corporate Finance Expert Darryl Guihot*, 17 November 2016.

²⁸ Reilly, T, *Speaking notes from PAC Presentation*, 21 November 2011.

²⁹ Carr, R, *Economic impact of the proposed Drayton South Open-cut Coal Mine*, November 2016.

3. Stallion and broodmare location decisions

Much of the material put before the determining PAC in relation to my first report focuses on why a particular assumption that is said to underpin my analysis is wrong, and so the conclusions that I draw are similarly compromised. The critical assumption I am said to have made is that,³⁰ in relation to location decisions, stallions follow broodmares when, in fact, many submitters with thoroughbred breeding interests and knowledge state that the correct location dynamic is for broodmares to follow stallions.³¹

In this section I correct the record by drawing attention to the underlying assumption in relation to this question that I made in my first report. I also explain that my earlier analysis and conclusions are unaffected by whether broodmares follow stallions or vice versa.

3.1 Analysis assumed that *both* stallions and broodmares move

In my first report I used data on the number of covers in different, cluster-sized breeding locations to show that, if Coolmore and Darley were both to leave the Upper Hunter, the remaining cluster participants would still be approximately double the current size – as measured by the number of covers – of the next largest thoroughbred breeding clusters in Australia and New Zealand, being Goulburn and Auckland/Waikato, respectively.³²

I made this finding even before – in the face of the departure of two substantial competitors – the likely expansion of services offered by stallions standing at other stud farms in the Upper Hunter is taken into account. On this analysis, I concluded that the Upper Hunter would remain a substantial and viable equine cluster if the Drayton South mine was to proceed.

Importantly, my analysis assumed that all of the covers presently being provided by stallions standing at Coolmore and Darley would instead be undertaken at those studs' new location. The implication is that:

- all of the stallions currently standing at Coolmore and Darley would move to the new region;
- a sufficient number of broodmares needed for these covers to be undertaken must also move to the new location – because the number of covers in the new location would increase substantially and spare broodmares cannot be assumed to be already present; and
- similarly, consistent with my assumptions as to the reduction in the number of covers in the Upper Hunter, about the same number of broodmares will have left the Upper Hunter cluster.

The conclusion in my first report was not therefore based on any assumption as to whether stallion or broodmare owners instigate the process of moving their thoroughbreds from one location to another, or as to the dynamics of which party would make what decision first, etc. Rather, my results are consistent with adopting the assumption preferred by Dr Stowe and many others that 'broodmares follow stallions'.³³

3.2 No assumption that stallions follow mares

The analysis I undertook calculated the number of covers that would be performed in the Upper Hunter, Goulburn and Auckland/Waikato (the next two largest thoroughbred economic clusters) if Coolmore, Darley

³⁰ Stowe, J, *Comments at Public Meeting*, 21 November 2016, p 1.

³¹ For example, Mr Guihot and Godolphin argue that broodmares follow stallions. See: Guihot, D, *Presentation to PAC by Long-Term Horse Breeder and Corporate Finance Expert Darryl Guihot*, 17 November 2016, p 25 and Godolphin, *Letter to Mr Paul Forward RE: Drayton South Coal Project – D431/16*, 30 November 2016, p 7.

³² My first report, pp 38-47.

³³ Stowe, J, *Comments at Public Meeting*, 21 November 2016, p 1.

or both of them left the Upper Hunter. I assumed the covers that currently take place in the Upper Hunter at Coolmore and Darley's stud farms:³⁴

- would no longer take place in the Upper Hunter; and
- would instead take place at Coolmore and/or Darley's new location, in addition to the covers that already take place there.

In other words, I assumed that the stallions standing at Coolmore and/or Darley move with the stud farms, and that a sufficient number of broodmares will have moved to the new location for the covers at that location to increase by the number that currently take place at Coolmore and/or Darley.

On these assumptions, my analysis showed that:

- the Upper Hunter would still be much larger than any other thoroughbred breeding cluster in the southern hemisphere if Coolmore or Darley were both to leave the Upper Hunter cluster;³⁵ and
- the Upper Hunter cluster would still be approximately:
 - > the same size as the next largest thoroughbred breeding cluster in the southern hemisphere if both Coolmore and Darley were to relocate to the same new cluster; and
 - > twice the current size of next largest thoroughbred breeding cluster.³⁶

In my opinion, the change in the number of covers is a good approximation for the effect of a change to the functioning of the equine cluster, because the number of covers is highly correlated with the number of thoroughbreds and broodmares in the region.³⁷ Consistent with the material put forward by the thoroughbred breeding expert, Mr Guihot, this parameter is, in turn, the principal driver of employment and spending on supplies and other services in the Upper Hunter region.³⁸

By contrast, there is very little to distinguish the economic effect on the cluster of a stallion with a service fee of \$100,000, as compared with a stallion that performs the same number of covers for a lower fee of, say, \$50,000 or \$20,000. This is because the principal economic effect of the higher service fee is the size of the transfer of funds between different owners of the thoroughbreds, rather than on the economic resources being deployed to the Upper Hunter region.

Stallions standing at Darley and Coolmore accounted for ■ and ■ per cent of the covers in the Upper Hunter region in the 2014 breeding season.³⁹ It follows that mares that were covered by those stallions can be assumed to account for approximately these same proportions of the total spending in the Upper Hunter on agistment-related services for thoroughbreds.

3.3 Conclusions do not depend on mares following stallions

I concluded from the analysis set out in my first report that, although the equine CIC may reduce in size if Coolmore and Darley left the Upper Hunter, the equine CIC would not collapse even if all of the stallions currently standing at Coolmore and Darley left in addition to the broodmares they cover. The equine CIC would still be approximately double the size of any other, successful thoroughbred breeding clusters in Australia or New Zealand. I drew these conclusions even before taking account of the likely expansion by

³⁴ My first report, p 38.

³⁵ My first report pp 39, 45.

³⁶ My first report, p 47.

³⁷ This is because there is a large number of broodmares, and very few stallions.

³⁸ Guihot, D, *Presentation to PAC by Long-Term Horse Breeder and Corporate Finance Expert Darryl Guihot*, 17 November 2016, p 29.

³⁹ My first report, p 15.

other, competing studs in the Upper Hunter cluster that can take advantage of the gap left by Coolmore and Darley.⁴⁰

My conclusion is that the equine CIC is not 'under threat' and would not 'collapse' under the assumption preferred by Dr Stowe and many others that, if Darley and Coolmore leave the Upper Hunter with their stallions, the broodmares covered by those stallions will follow.⁴¹ Such an assumption represents the worst case scenario for the equine CIC since, for the reasons I describe in my first report and on which I elaborate in section 4 below, it is much more likely that not all of these stallions and broodmares would leave the Upper Hunter (even if Coolmore and Darley were to leave).

Finally, I note that my conclusions would be yet further strengthened if – contrary to the contentions of Dr Stowe and others – one was to assume that the location of stallions is influenced by the location of broodmares. This assumption would mean that the stallions presently standing at Darley and Coolmore would, in their new location, perform fewer covers than now.

⁴⁰ My first report, p 6.

⁴¹ In this supplementary report, I use as my reference point the question as to whether the equine CIC is 'under threat' or would 'collapse' in light of the findings of the review PAC. See: PAC review report, p 51; Stowe, J, *Comments at Public Meeting*, 21 November 2016, p 1.

4. Dynamic effects of the studs relocating

The contention that broodmares would quickly follow Coolmore and Darley stallions to any new location has encouraged me to consider carefully the process by which the equine CIC would be affected if Coolmore and/or Darley were indeed to relocate their operations outside the Upper Hunter. In this section I draw on information provided by the studs themselves to set out in detail how the economic considerations governing each of the relevant decision-making parties would affect this process.

4.1 Summary

My assessment of the decisions that each party will need to take in the event that, if the project was to be approved, Coolmore decided to relocate its operations away from the Upper Hunter shows that:

- on its own estimates, it would take up to eight years for Coolmore to develop a new stud farm in, say, Goulburn, Victoria – if Coolmore was instead to purchase an existing stud facility, this could displace (most likely to the Upper Hunter) some of the stallions already standing in Victoria, reducing the effect on the equine CIC;
- to the extent that the owners of stallions presently standing at Coolmore were sufficiently concerned at the perceived impact of the project, they would most likely move their thoroughbreds to another stud in the Upper Hunter before mining began – in that event, those owners may have no reason to follow Coolmore once, up to eight years later, it was finally able to relocate away from the Upper Hunter;
- alternatively, to the extent that the owners of stallions presently standing at Coolmore were not concerned at the perceived impact of the project, they may not move their stallions at all, in which case Coolmore would also have no reason to move;
- broodmare owners have no reason to leave the Upper Hunter until or unless some of the Coolmore stallions relocate away – this means that each stallion owner would (after up to eight years, when Coolmore had established its new property) face the choice of either:
 - > moving to Goulburn with Coolmore, on the assumption that all of its broodmare owning customers would follow; or
 - > leaving Coolmore and moving to a new location in the Upper Hunter, where it need not make any assumption as to the likelihood that its broodmare owning customers will all follow;
- the stallion services business is dynamic, with over two thirds of the premium stallions (being the top 30, by cover fee) in any one year no longer remaining in that group eight years later – it follows that, by the time Coolmore had developed its new stud farm in Goulburn, there is no basis on which to assume it will have retained its current share of premium stallions; rather Coolmore can be expected to have lost two thirds of its premium stallions through natural attrition, and would need to compete with all other studs to identify and arrange to stand at its property a substantially new crop of premium stallions;
- if Coolmore were to move to Goulburn, there would need to be a ■ per cent increase in the number of covers undertaken in that location, unless Coolmore was to accept a reduction from the number its stallions presently undertake – however, it is improbable that there is a sufficient number of broodmare farms maintaining, unused, such tracts of land and facilities at the appropriate standard, in order to accept such an increase in the number of broodmares; rather, it is more likely that:
 - > the number of broodmares able to relocate would need to increase gradually over a number of years after the first stallions moved to that region; and
 - > consequently, only a few stallions could move to Goulburn each year without there being a shortage of broodmares;
- setting aside the constant change in composition of those stallions regarded as being in the premium category, the lengthy timeline for these contemplated changes to occur means that:

- > there is ample time for shuttle and other stallions to enter and stand in the Upper Hunter if any of the existing stallions were to leave; and
- > in any case, the project would be in the latter stages of its life before it would be practicable for a significant number of stallions to leave the Upper Hunter – since, in the interim, there would be shortages of suitable, fully developed farms at which those stallions could stand.

Similarly, my assessment of the decisions that each party would need to take in the event that, if the project was to be approved, Darley decided to relocate its Woodlands broodmare operation away from the Upper Hunter shows that:

- to the extent that it was sufficiently concerned at the perceived impact of the project, Darley would need to move its broodmares before mining began – however, given the integrated nature of its Woodlands and Kelvinside facilities, the only way to achieve this whilst keeping its stallions and broodmares in close proximity would be to move its broodmares to another location in the Upper Hunter while maintaining its Kelvinside stud farm; and
- since Darley's Kelvinside stud farm is unaffected by the proposed mine, it must be significantly less costly and much easier in terms of operational practicalities for Darley to move its broodmare facility to another location in the Upper Hunter, rather than move both its broodmare and stud farms to Victoria.

In my opinion, there is sufficient evidence as to the relative magnitudes of the costs and benefits to draw safely the conclusion that it is not in Coolmore or Darley's economic interests to relocate away from the Upper Hunter.

Further, my analysis in this section shows that, even if Coolmore and Darley were to relocate their operations away from the Upper Hunter:

- constraints as to the availability of suitable land and facilities that the studs themselves have emphasised mean that such a decision could only be given effect over an extended period of time;
- decisions by the principal customers of Coolmore and Darley as to whether and when they may decide to relocate outside the Upper Hunter would generally not be required for many years; and
- the extended period of time over which it would be practicable for the full complement of stallions and broodmares served by Coolmore and Darley's existing facilities to relocate outside the Upper Hunter would present a long period over which rival breeding operations could respond to the gap in the market left by Coolmore and Darley.

It follows that the structural threat to the equine CIC from the project is minimal or non-existent. There is no reasonable basis to conclude that the Upper Hunter equine CIC would be under threat or at risk of collapse from the project.

4.2 Critical decision makers in the equine CIC

The equine CIC is made up of a large number of thoroughbred owners and businesses providing services to them. I assume that each owner or service provider makes decisions in its own financial self-interest, ie, maximising profits whilst making efforts to reduce the economic and other risks they face.

The critical decision makers in the equine CIC can be grouped into:

- stallion owners, who choose at which stud farm their stallions will stand and which broodmares their stallions will cover (from those that apply), and primarily aim to maximise the cover fees they can earn over the expected lifespan of their stallions;⁴²

⁴² Coolmore, *Submission to PAC*, 28 November 2016, p 25.

- broodmare owners, who choose which stallions their broodmares should be covered by, and primarily aim to maximise the quality of the foals produced by their broodmares, whilst minimising costs such as agistment and cover fees;
- stud farms, which primarily aim to have as many of the top stallions as possible stand at their properties;
- broodmare farms, which primarily aim to house as many broodmares as possible at the highest feasible agistment fees; and
- other service providers, such as veterinarians, farriers, fodder producers and equine transport companies, all of whom want to be located near to a large number of thoroughbreds.

The natural cover provisions, the desire to move broodmares only a limited distance whilst they are in foal, and the need for some of the other participants to visit the thoroughbred they are tending, means that each participant in the cluster is reliant on the proximity of others, ie:⁴³

- the broodmare owners want their mares to be in a location with many good quality stallions nearby, so the owner can choose from a wide range of stallions and the broodmare can be moved only a short distance when in foal and after covering;
- the stallion owners want their stallions to be in a location in which there are many good quality broodmares so as to maximise the number of covers they can perform with high quality broodmares in a season, while stallions also need the other participants for the various services they provide; and
- the other service providers need thoroughbreds to be nearby so as to reduce the cost of travelling to provide their services.

4.3 Dynamic considerations if Coolmore was to relocate

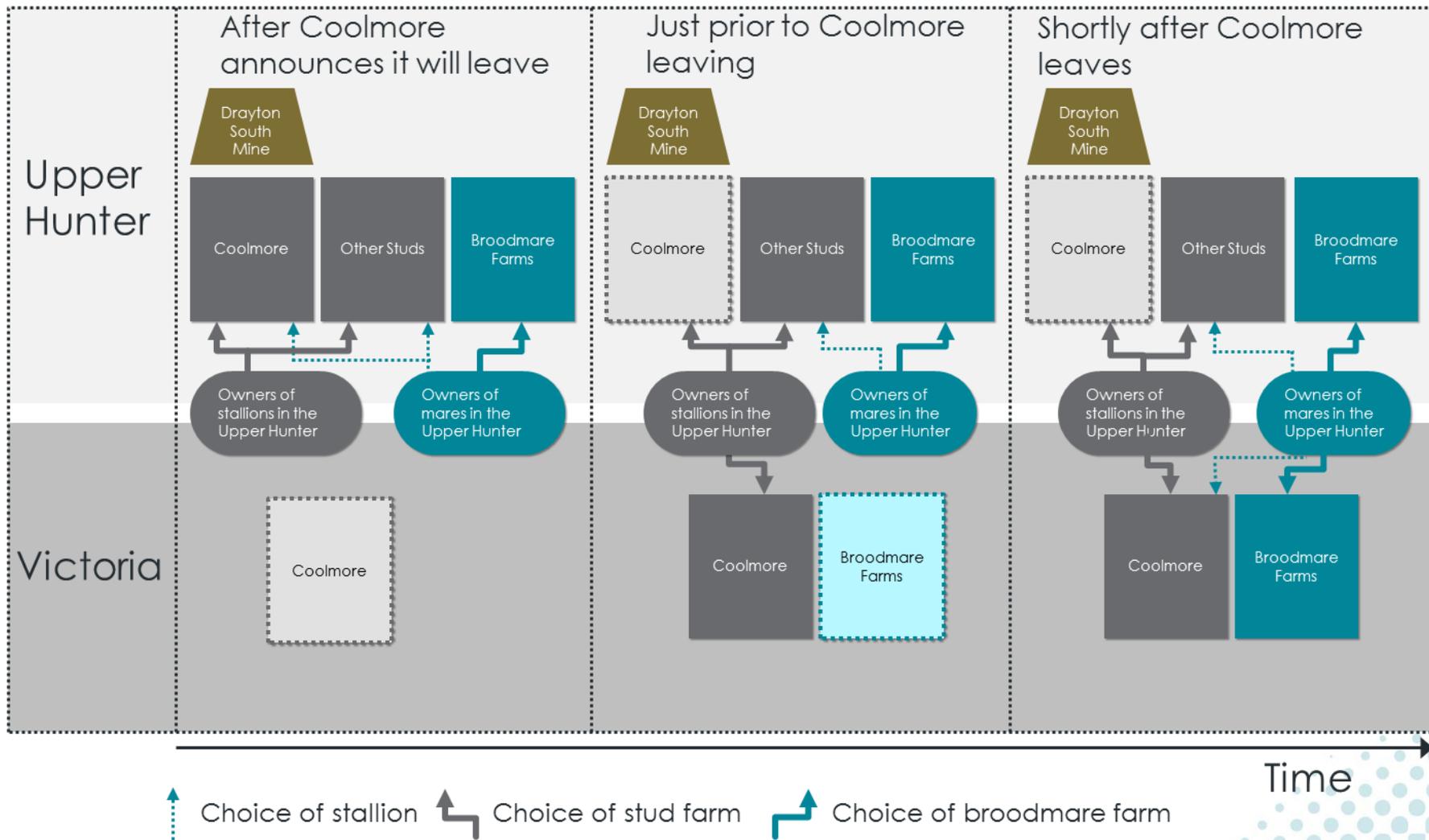
Coolmore has said that it would leave New South Wales if the Drayton South mine goes ahead, probably to Victoria.⁴⁴ For the purpose of this section, I assume that the Drayton South mine is approved and that Coolmore makes an immediate decision to leave the Upper Hunter, with the aim of moving to Victoria.

Figure 4.1 shows that there are three distinct time periods for the key decision makers to take action in light of such a decision and its announcement by Coolmore.

⁴³ Coolmore has recognised the agglomeration benefits that the Upper Hunter brings. See: Coolmore, *Submission to PAC*, 28 November 2016, p 29. Dr Stowe also recognises this when she says that ‘...there are certainly economies of scale to be taken advantage of to have stallions and broodmares in close geographical proximity...’. See: Stowe, J, *Peer Review of “Expert report of Greg Houston” and Dr Jeff Bennett’s “Peer review of expert report of Greg Houston”*, 22 November 2016, p 7.

⁴⁴ Coolmore, *Submission to PAC*, 28 November 2016, p 31.

Figure 4.1: Decision making process if Coolmore leaves the Upper Hunter



4.3.1 After Coolmore decides it will leave the Upper Hunter

I assume that Coolmore would begin to look for a suitable property immediately. It has put considerable time into assessing alternative locations in New South Wales, but it claims that no alternative location in this state offers the required scale, variety and quality of soil types, water and topography.⁴⁵ Presumably, this means it would also take a considerable amount of time to find a suitable property in Victoria, assuming it exists.

Once suitable land is purchased, it would take up to eight years to get the property up to the required standard and a very significant investment in facilities – Coolmore has stated that:⁴⁶

Furthermore, from our experience, even for land of the quality of the current farm, it takes as long as eight years to bring pasture up to Coolmore's required standard for paddocks, fencing and improvements. Coolmore has invested more than \$100 million in infrastructure on the farm over the past 20 years.

Alternatively, Coolmore may seek to purchase an existing stud farm in Victoria, assuming there is a willing seller. This would allow a more rapid relocation than purchasing a greenfield site, although Coolmore may be unlikely to find a stud farm large enough for its current stallions.⁴⁷ Further, if it were to contemplate purchasing an existing stud farm, it would make more sense for Coolmore to acquire another stud in the Upper Hunter and so avoid the risk of its clients leaving for another farm in the same region.

If Coolmore was to acquire an existing stud farm in Victoria with the intention of persuading all of its stallion owners to relocate as well, the question arises as to what would become of those stallions already standing at the acquired property. Some previous stud farm sales (such as the 2008 sale of Woodlands to Darley) have included all of the existing bloodstock, while others (eg, Patinack)⁴⁸ have not included the existing stallions. If Coolmore's purchase of an existing Victorian stud was not to involve maintaining the existing arrangements for the stallions in residence, then its relocation by this means would displace those stallions. In that event, many of the Victorian-standing stallions could be presumed to relocate to the Upper Hunter, particularly in light of the Coolmore-standing stallions having just moved away from that location.

Consistent with my presumption above, the total number of stallions standing in the Upper Hunter has been relatively stable over the past ten years, despite a number of studs in both Upper Hunter and Victoria having transferred ownership during this same period. For example, Darley purchased Woodlands in 2008 and in 2015 the Yallabee Stud in Victoria was sold to Spendthrift, a large Kentucky-based stud farm.⁴⁹ Despite these changes, the number of stallions and covers in the Hunter Valley has remained reasonably stable over time, as shown in figure 4.2. This suggests that the Upper Hunter CIC is relatively impervious to the sale and purchase of existing stud farms – and any associated changes to the arrangements for the stallions standing at those properties – both in the Upper Hunter and in Victoria.

Figure 4.2: Number of stallions and covers in the Upper Hunter

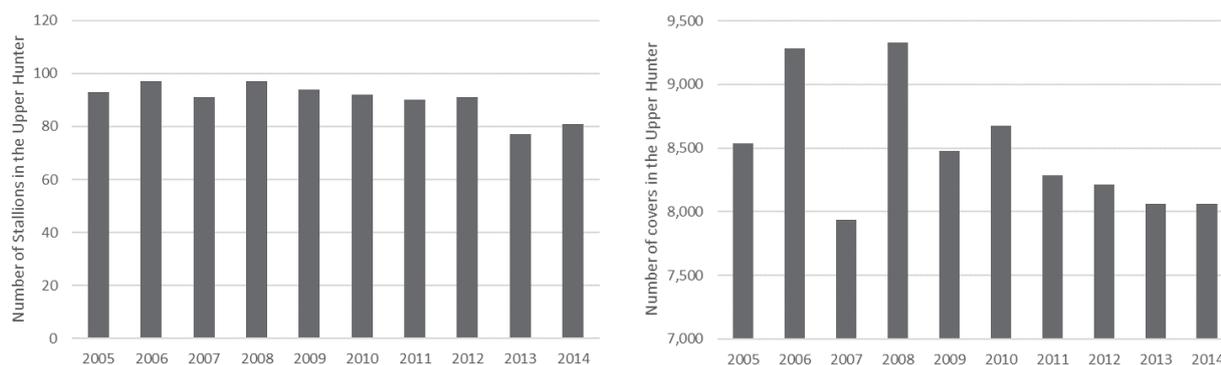
⁴⁵ Coolmore, *Submission to PAC*, 29 June 2016, p 26.

⁴⁶ Coolmore, *Submission to PAC*, 29 June 2016, p 26.

⁴⁷ I understand that Coolmore also has some broodmares on its property, but this does not affect my analysis.

⁴⁸ See Darley, Media release: Darley's purchase of Woodlands approved, 13 May 2008, <http://www.darley.com.au/news/darleys-purchase-woodlands-approved>; Darley, Media release: Darley Australia to relocate its stallions in 2009, 1 January 2009, <http://www.darley.com.au/news/press-release-1-January-2009>; and Magic Millions, 21 August, 2014, <http://www.magicmillions.com.au/patinack-farm-unreserved-dispersal-sale/>.

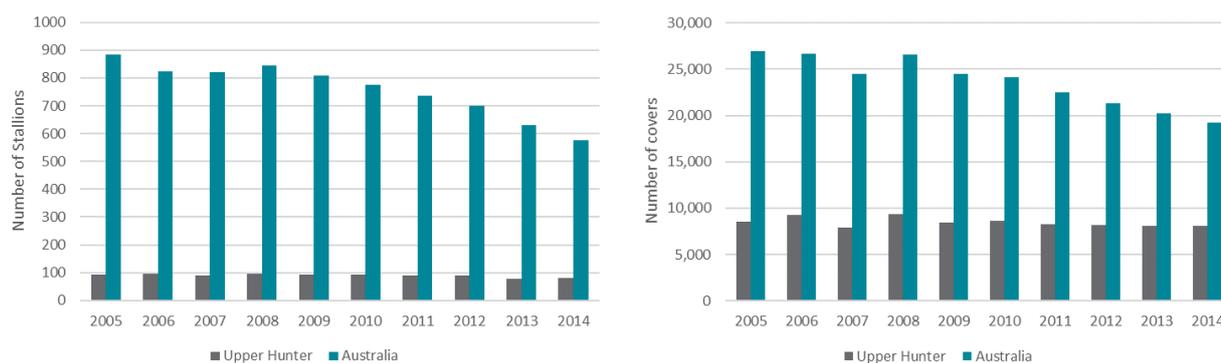
⁴⁹ See Darley, Media release: Darley's purchase of Woodlands approved, 13 May 2008, <http://www.darley.com.au/news/darleys-purchase-woodlands-approved>; See Spendthrift: Media release: Spendthrift purchases Yallabee Stud in Australia, 7 April 2015, <http://www.spendthrift.com.au/articles/spendthrift-purchases-yallabee-stud-in-australia.html>.



Source: Racing Australia Annual Report 2015, available at <http://publishingservices.risa.com.au/otherpublications/AnnualReport2015/files/assets/common/downloads/publication.pdf>

The relative stability – in terms of numbers of stallions and covers – of the Upper Hunter equine CIC in particular is reinforced by the marked decline in both the number of stallions and covers undertaken across the country as a whole, as shown in figure 4.3. These data confirm that the Upper Hunter equine CIC's role as the pre-eminent location within Australia for thoroughbred breeding has strengthened over time, and that it is reasonable to assume that any displaced Victorian-standing stallions could reasonably be expected to relocate so as to become part of the Upper Hunter equine cluster.

Figure 4.3: Number of stallions and covers in Australia and the Upper Hunter



Source: Racing Australia Annual Report 2015, available at <http://publishingservices.risa.com.au/otherpublications/AnnualReport2015/files/assets/common/downloads/publication.pdf>

From the perspective of the owners of stallions standing at Coolmore, there are two possible reactions to the mine being approved:

- first, on the assumption that Coolmore is correct in stating that owners and clients will want to move their stallions and broodmares if the project proceeds,⁵⁰ it follows that the stallions and broodmares at Coolmore would be moved as soon as practicable after the project is approved, even though Coolmore would not have an available alternative property at this point in time. Given that the owners had previously chosen to stand their stallions in the Upper Hunter, I presume that they would make the same decision again. Reinforcing this, other stud farms in the cluster can be presumed to compete as hard as they can to attract the premium stallions relocating away from Coolmore. Some stallions and broodmares may have to be moved outside of the Upper Hunter if there is insufficient spare capacity at the existing stud and broodmare farms; and
- second, on the alternative assumption that Coolmore is incorrect and owners and clients do not consider there is any perceived risk and those clients will not want their stallions and broodmares to leave its property, Coolmore has no reason to leave, and the equine CIC is unlikely to be affected by the project.

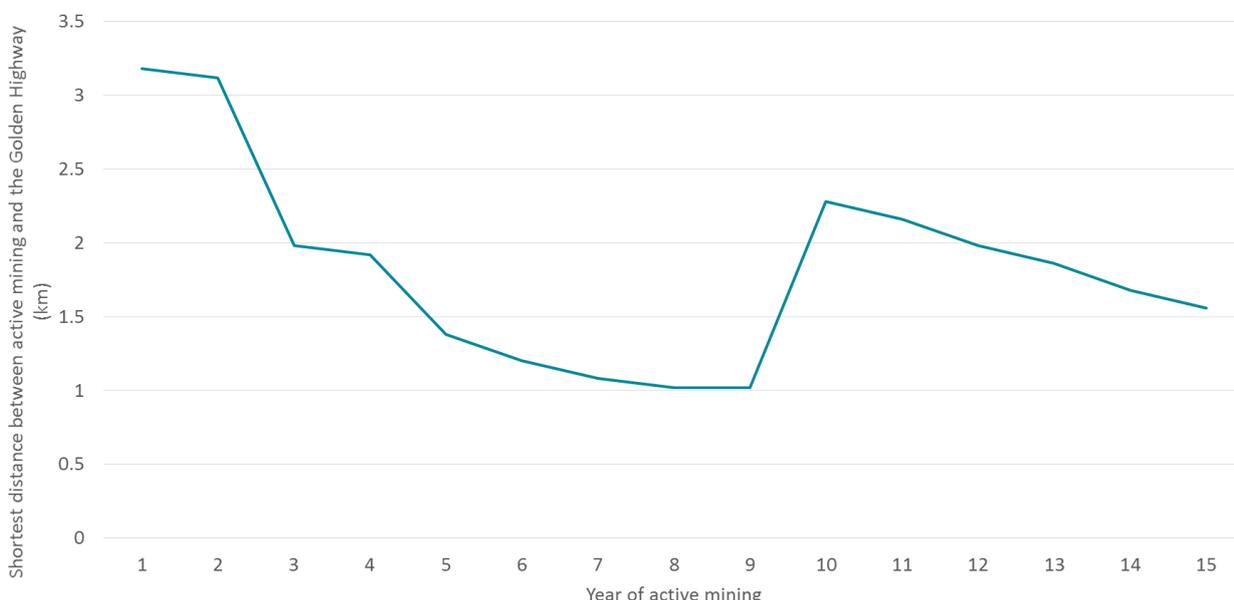
⁵⁰ Coolmore, *Submission to PAC*, 29 June 2016, pp 27-30.

The vast majority of broodmare owners that keep their mares at properties outside Coolmore would not be affected by the changes I describe above, because the stallions they use will still be in the Upper Hunter. It follows that broodmare farms are also not affected.

4.3.2 Just prior to Coolmore leaving the Upper Hunter

Coolmore would no doubt seek to encourage stallion and broodmare owners to move to its new property in Victoria immediately prior to it becoming ready for use, ie, up to eight years after the Drayton South mine goes ahead. The mine will be in the seventh year of active mining at this stage, on the assumption that it takes around a year to begin mining once approval is given. Figure 4.4 shows that, at this time, operations at the Drayton South mine will be just over one kilometre away from Coolmore’s boundary and it will be just three years until active mining moves a substantial distance away from the studs and a further five years before mining ceases altogether.

Figure 4.4: Distance between Coolmore's boundary and active mining



Source: measurements taken between active mining and Golden Highway next to Coolmore’s property from Figures 3-6 to 3-10 of Drayton South Coal Project – EIS main report, and Figure B-12 of Drayton South Coal Project – EIS Appendix B available at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6875. Anglo has committed to keeping mining operations at least 1km from the Golden Highway, see: Hansen Bailey, Drayton South Coal Project Response to Submissions, July 2015, p 96.

By this time, most of the premium stallions that were standing at Coolmore’s Upper Hunter property at the time mining began would have left many years ago. Many will no longer be top stallions. For example, Figure 4.5 shows that eight years after 2005, only nine of the top 30 stallions in Australia (by cover fee) remained in that group. It follows that there would be little reason for those stallions that were standing at Coolmore eight years earlier to move to Victoria.

Figure 4.5: Top stallions in Australia by cover fee



Source: analysis of information in the Australian Stud Book. Notes: The 'Top 30' Stallions in a given year were identified by ranking the stallions by cover fee and selecting the 30 stallions with the largest fee. When the cover fee of the 30th stallion was a draw, the winner was determined by number of covers in that year.

Figure 4.5 also highlights that, whilst there were seven stallions that remained in the top 30 for the entire ten year period 2005 to 2014, the remainder was very dynamic. For example:

- there were 83 different stallions in the top 30 for at least one year from 2005 to 2014; and
- around five new stallions entered the top 30 in each year, with typically only one or two of them remaining five years later.

The situation would not be much different if Coolmore was able to move more quickly by purchasing an existing stud farm. Stallion owners would then need to choose between moving with Coolmore to Victoria, or staying in the Upper Hunter. Each stallion owner would still face the choice between:⁵¹

- moving to a smaller and less premium cluster, with fewer broodmares, few or no existing clients (the broodmare owners have no reason to move their mares before the stallions), lower revenue and, presumably, lower quality facilities; and
- keeping the same customers and suppliers in the premium cluster of the Upper Hunter.

In choosing between these options, the lack of spare broodmare facilities would most likely constrain the ability of broodmare owners to move their thoroughbreds to Victoria, and hence restrict the ability of stallion owners to access their usual clients. In 2014 there were approximately 2,365 covers in the biggest thoroughbred breeding area of Victoria, ie, Goulburn.⁵² It follows that there would need to be a [redacted] per cent expansion in the number of covers in Goulburn if all those that were undertaken by Coolmore in 2014 were added to Goulburn.⁵³

In my opinion, it is highly unlikely that suitable, spare facilities already exist in Goulburn to house the [redacted] per cent increase in broodmare farm capacity that would be necessary for these covers to be undertaken. It follows that, presented with the choice I identify above, each individual stallion owner is much more likely to choose to move to another stud farm in the Upper Hunter.

Broodmare owners face a more straightforward choice. Owners are unlikely to move their broodmares to Victoria until the stallions by which they seek to be covered are also committed to move, and so few broodmares can be expected to move well in advance of Coolmore leaving its stud farm in the Upper Hunter.

Further, I expect that both stallion owners and Coolmore would signal well in advance (at least, well prior to the commencement of the breeding season) if a stallion is to be moved to Victoria, in order to encourage broodmare owners to move their mares at the same time. However, such information would allow other stallion owners, including those overseas, ample time to commit their stallions to the Upper Hunter, in order to take advantage of the expected stallion shortage in that location.

Figure 4.6 below shows that the number of covers undertaken by overseas-domiciled shuttle stallions travelling to the Upper Hunter has been falling in recent years.⁵⁴ Faced with the prospect of a number of premium stallions departing the Upper Hunter, the number of shuttle stallions would be expected to return to previous levels, since there would be an increased opportunity for owners of those stallions to improve their return by shuttling. By way of illustration as to flexibility in the supply of shuttle stallions, the number of covers undertaken by domestic stallions being shuttled overseas has recently increased significantly, with Coolmore

⁵¹ Stowe, J, *A Hedonic Price Analysis of Differentiated Products of Unknown Quality: Freshman Sire Stud Fees in the Thoroughbred Breeding Industry*, Journal of Agr business 28, 2010, p 29.

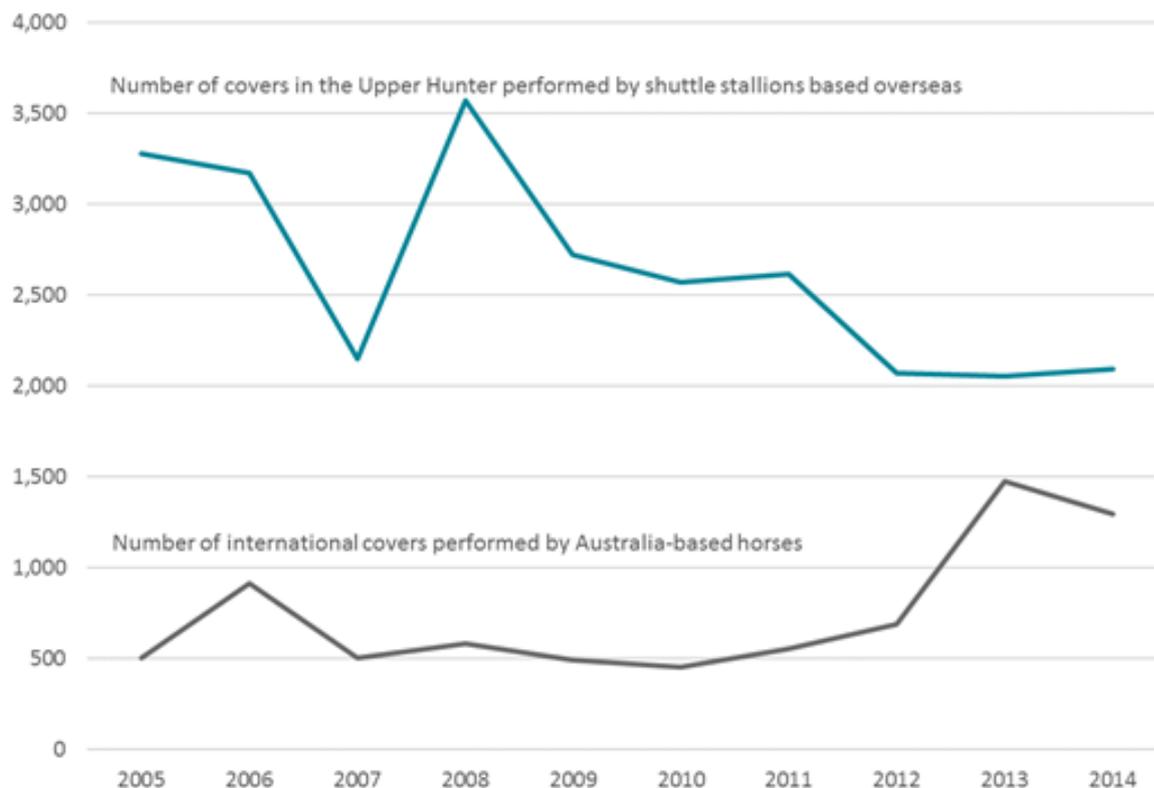
⁵² There were 2,525 covers in Goulburn in 2010/11. Source: IER, *Size and Scope of the Victorian Racing Industry*, September 2013, p 45. I have adjusted this by the percentage change in the number of covers in Victoria from 2011 to 2014 which is a fall of six per cent, giving 2,365. The six per cent fall was calculated by dividing the total number of covers in Victoria in 2014 (4,964) by the number in 2011 (5,299), using figures from the Australian Stud Book.

⁵³ Coolmore undertook [redacted] covers in 2014. Source: analysis of data from the Australian Stud Book. Percentage expansion calculated by dividing the number of Coolmore covers by the number of covers in Goulburn (2,365).

⁵⁴ This is consistent with the analysis presented by Mr Reilly at the public meeting on 21 November 2016. See: Reilly, T, *Presentation to PAC of Tom Reilly, chief executive of Thoroughbred Breeders Australia*, 21 November 2016, p 11.

noting that colonial sires (ie, Australian bred) are currently in high demand, resulting in higher cover fees.⁵⁵ This is consistent with stallions being transported between hemispheres whenever it is profitable to do so.

Figure 4.6: Number of covers undertaken by shuttle stallions



Source: analysis of information in the Australian Stud Book Source. Notes: shuttle stallions were classified as foreign or Australian domiciled by reference to the location at which they stood their first season at stud, the comparative number of Australian and international covers and where they stand most of the time.

4.3.3 Season after Coolmore leaves the Upper Hunter

I explain above the considerations that give rise to my opinion that individual stallion owners are more likely to choose to move to another stud farm in the Upper Hunter than to follow Coolmore to Victoria. If this were indeed the case, the equine CIC would be largely unaffected by the project. However, in order to take a conservative approach, in this section I assume that some of the stallions that stood at Coolmore will move to Victoria at some stage.

In that event, some of the broodmare owners that had been locating their mares in the Upper Hunter may want to move their mares to Victoria to be covered by those stallions that do move. However, the limited existing facilities for broodmares in Victoria would mean that this becomes increasingly expensive and, eventually, impracticable for many broodmare owners given the current, relatively small size of the Goulburn cluster, as set out above. The consequence is that few broodmares could move in the first season after the departure of Coolmore, thereby providing a strengthened incentive for stallion owners to maintain or move their stallions to the Upper Hunter. Reinforcing this incentive, the cost of agistment for broodmares in the Upper Hunter would be likely to fall in the short term if some of the mares left the equine CIC, thereby encouraging those remaining to stay.

⁵⁵ Coolmore, *Submission to PAC*, 28 November 2016, p 22.

Broodmare farms in Victoria may begin to expand their facilities, but submissions provided by Darley and Coolmore show that preparing pastures suitable for thoroughbred breeding can take many years.⁵⁶

Dr Stowe claims that Coolmore and Darley have the capacity to house 725 broodmares in Victoria.⁵⁷ However, this leaves approximately 2,400 additional broodmares to be accommodated if all Coolmore and Darley standing stallions were to move with them, and all broodmares that were covered by those stallions in the previous year were also move to Victoria.⁵⁸ It is not clear where these properties are, or whether they already house broodmares.

In my opinion, it is highly unlikely that Coolmore and Darley have sufficient facilities to house so many broodmares – the cost of such specialist, unused capacity would be prohibitive. As far as I am aware, Coolmore does not have facilities for broodmares in Victoria.⁵⁹ Darley's Victorian facilities include its stud farm in Northwood, which comprises 1,200 acres and currently has seven stallions.⁶⁰ This compares with Darley's properties at Kelvinside and Woodlands that comprise 1,700 and 6,500 acres, respectively.⁶¹ Kelvinside has 15 stallions, and Woodlands has approximately 250 mares.⁶² It follows that it is extremely unlikely that Darley could move all of its stallions to its Northwood property, let alone also house over 700 broodmares.

Rather, it is more likely that only a small number of broodmares could move away from the Upper Hunter each year (as the necessary additional facilities were developed to the requisite standard), allowing one or two stallions to do the same. However, the point in time at which this process could begin (being the season after Coolmore was to leave) may be up to ten years after the mine is approved, given that it can take up to eight years to prepare a property to the appropriate standard.

The mine will be in the ninth year of active mining by this stage, at which point it will be only 12 months until active mining moves substantially away from Coolmore, as shown in figure 4.4. There will be only six years of mining remaining at this time. It follows that, at the point in time at which stallion and broodmare owners would be making a decision to move, there would soon be little reason for them to move their thoroughbreds from the Upper Hunter.

4.4 Dynamic considerations if Darley was to relocate

I am not aware of Darley having stated explicitly that it would leave the Upper Hunter if the Drayton South mine was to go ahead. However, the review PAC concluded that the combined reputational risks posed by the mine meant that there was a threat that Darley and Coolmore would leave the Upper Hunter.⁶³ For the purpose of this section, I assume that the Drayton South mine is approved and that Darley takes an immediate decision to leave the Upper Hunter, with the aim of moving to Victoria.

4.4.1 After Darley decides it will leave

Darley's Kelvinside stud farm in the Upper Hunter is unaffected by the proposed mine, and so there is no mine-related reason for broodmare owners to stop having their mares covered by stallions standing at Kelvinside whilst Darley looks for and prepares a new property in Victoria, which could take many years.

⁵⁶ Coolmore, *Submission to PAC*, 29 June 2016, p 26 and Darley, *Submission to PAC*, 4 July 2016, p 27.

⁵⁷ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 8.

⁵⁸ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 8.

⁵⁹ The Review PAC explains that Coolmore has facilities in Ireland, Kentucky (in the USA) and the Hunter Valley, whilst Darley has facilities in the United Kingdom, Europe, Kentucky, Japan, the Hunter Valley and Northwood Park in Victoria. See: PAC review report, p 31.

⁶⁰ Darley's website, <https://www.darley.com.au/stallions/our-stallions>, accessed 29 September 2016

⁶¹ Darley, *Submission to PAC*, 2 October 2015, p 11.

⁶² Darley, *Submission to PAC*, 2 October 2015, p 10.

⁶³ PAC review report, p 65.

By contrast, Darley's Woodlands broodmare farm is in close proximity to the proposed Drayton South mine, and so there are two possible courses of action in light of the effect of the proposed mine, ie:

- the first is that Darley is correct to say that it cannot operate its broodmare farm in such close proximity to the proposed mine⁶⁴ – in that event, Darley would need to move its broodmares to other farms around the Upper Hunter given that:
 - > its stallions can be expected to remain in the Upper Hunter for some years at least, because there is no need to move them and, in any case, I explained in section 4.3.3 above that Darley's existing property outside of New South Wales seems unlikely to have sufficient capacity to accommodate its Upper Hunter stallions;
 - > its stallions and broodmares must be in close proximity,⁶⁵ and
- the second possibility is that perceptions as to the effect of the proposed mine do not have any significant effect on Darley's broodmare farm, in which case Darley's stud and broodmare farms would both remain in the Upper Hunter.

Although Darley faces a short term (up to eight years) constraint in the form of insufficient, suitably developed pasture and facilities that would prevent it from moving all of its thoroughbreds outside New South Wales, in the longer term Darley has two choices if it does not want to operate its broodmare farm located near to the Drayton South mine. The choices for Darley are that:

- it could purchase or develop another broodmare facility in the Upper Hunter; or
- it could move both its broodmare and stud farms to Victoria, along with all of its thoroughbreds – this would only be possible once appropriate facilities have been developed.

I explained in my first report that it would be substantially more attractive for Darley to move its broodmare farm to an alternative site in the Upper Hunter, as compared with alternative locations in Victoria or New Zealand, because:⁶⁶

- the Upper Hunter would remain the best place to stand stallions, and the region as a whole is not affected by the proposed mine;
- it would be much more costly to leave the Upper Hunter, because Darley would need to move two farms, rather than one; and
- there would be a significant risk to stallion revenue in leaving the Upper Hunter, because Darley would need to move before any broodmares have left.

Broodmare owners that seek to have their mares covered by stallions standing at Darley's Kelvinside property would not initially be affected by Darley deciding to leave the Upper Hunter, until such time as Darley is able to move its facilities outside of the Upper Hunter. It follows that, during this first (up to eight year) phase of any transition, the Upper Hunter broodmare farms are also not affected.

4.4.2 Just prior to Darley leaving the Upper Hunter

Darley would no doubt seek to encourage broodmare owners to move so as to be close to its new property in Victoria immediately prior to it being ready for use, ie, up to eight years after the Drayton South mine goes ahead.

Consistent with the analysis I set out above in relation to Coolmore, I expect that only a limited number of broodmares would initially be able to move to Victoria in the first year, because of a lack of suitable facilities. This limitation may encourage Darley to move just one or two stallions each year to Victoria. In any case,

⁶⁴ Darley, *Submission to PAC*, 4 July 2016, p 21.

⁶⁵ Darley, *Submission to PAC*, 4 July 2016, p 21.

⁶⁶ My first report, pp 26-30.

there would be no need for Darley to risk causing a significant imbalance of stallions and mares in its new chosen location, since its Upper Hunter stud farm is unaffected by the proposed mine.

Given a slow rate of thoroughbreds leaving the region that may start eight years after the announcement that the mine will go ahead, figure 4.4 shows that, by the time Darley has moved a significant number of stallions to Victoria, the proposed mine is likely to be coming towards the end of its life. In my opinion, this raises a serious question as to whether the likely cost and the extended time frame over which it would need to take place, means that Darley would be better off purchasing or developing an alternative broodmare facility in the Upper Hunter.

4.5 Access to the magnitude of all costs and benefits is unnecessary

Dr Williams states that:⁶⁷

Without access to the magnitude of the costs and benefits of the various alternatives, no economist can say to which location Coolmore and/or Darley would choose.

In my opinion, there is no reasonable basis for such a statement, and I disagree with it.

In my first and this supplementary report I have examined in some detail how likely it would be that Coolmore and/or Darley would leave the Upper Hunter, drawing upon:

- a detailed description of the economic characteristics of the thoroughbred breeding industry;
- an examination of whether the perception of the stud farms will change as a result of the project; and
- a detailed analysis of the incentives faced by each of the parties at each point in time as a result of the project going ahead.

It is not necessary to measure the precise magnitude of the costs and benefits of moving in order to draw conclusions as to the likely conduct of Coolmore and Darley. Rather, it is only necessary to consider which of alternative possible decisions is likely to give rise to larger costs and/or benefits. The analysis set out in this supplementary report and in my first report shows that the costs of relocating away from the Upper Hunter are likely to be substantially greater than the benefits. For example, it is clearly not in Coolmore's interests to leave the Upper Hunter if all of its customers remain in the area. There is no need to know the magnitude of all the costs and benefits in this circumstance.

The studs and their experts have had ample opportunity to provide material by way of critique or correction of inaccuracies appearing in my first report – such as if there existed a significant benefit of moving to Victoria that I had overlooked. However, I am not aware of any detailed evidence as to the scope or magnitude of the costs and benefits of the studs' relocating having been provided. Further, Dr Williams' report does not engage in a critique of my analysis of the incentives – which derive from both the economic characteristics of the thoroughbred breeding industry and an assessment of the *relative* magnitude of the costs and benefits – of the stud farms as applied to any decision to leave the Upper Hunter.

4.6 Conclusion

In my opinion, there is sufficient evidence as to the relative magnitudes of the costs and benefits to draw safely the conclusion that it is not in Coolmore or Darley's economic interests to relocate away from the Upper Hunter. Of equal importance, however, in sections 4.1 through 4.3 above I present additional analysis of the options available to each relevant decision-maker at each point in time over which the potential relocation process may unfold. This additional analysis shows that, even if Coolmore and Darley were to relocate their operations away from the Upper Hunter:

⁶⁷ Williams, P, *Drayton South Coal Project*, 24 November 2016, para 37.

- constraints as to the availability of suitable land and facilities that the studs themselves have emphasised mean that such a decision could only be given effect over an extended period of time;
- decisions by the principal customers of Coolmore and Darley (being the owners of a relatively small number of stallions and approximately 3,000 broodmares) as to whether and when they may decide to relocate outside the Upper Hunter would generally not be required for many years; and
- finally, the extended period of time over which it would be practicable for the full complement of stallions and broodmares served by Coolmore and Darley's existing facilities to relocate outside the Upper Hunter would present an extended period over which rival breeding operations, including the owners of rival stallions seeking to provide substitute covering services, could respond to the gap in the market left by Coolmore and Darley.

To summarise, the extended period over which Coolmore and Darley would need to telegraph and then to orchestrate a departure from the Upper Hunter mean that the structural threat to the equine cluster as a result of the project is minimal or non-existent. There is no reasonable basis to conclude that the Upper Hunter equine CIC would be under threat or at risk of collapse from the project.

5. Barriers to entry and expansion

In my earlier report I explained that, if Coolmore and/or Darley left the Upper Hunter with all of their stallions, entry and/or expansion of existing service providers would be likely in relation to both stud farms (since the Darley and Coolmore properties would be for sale) and stallion services.⁶⁸ In essence, to the extent that any stallions left the Upper Hunter, the opportunity for other owners to move their stallions into the region would be very attractive and would mitigate the effect on the equine CIC of the departure of any Coolmore or Darley stallions.

Dr Williams and Dr Stowe both make observations as to barriers to entry that may affect this process and, in light of those, in this section I provide a more fulsome analysis of the nature and extent of any barriers to entry in the provision of thoroughbred breeding services.

It is helpful to note at the outset that the question of whether 'stallions follow mares' or vice versa has no bearing on the analysis of barriers to entry in stallion services. Although I explain in section 4.1 through 4.5 that the dynamics of the relocation process would be protracted and involve many uncertainties, the long term effect on the cluster will ultimately be determined by the number of stallions and mares, in combination, that reside in the Upper Hunter and, potentially, elsewhere.

5.1 Summary

Between them, Dr Stowe and Dr Williams discuss four potential barriers to entry, which I address below. First, the limited number of prospective premium stallions would not prevent stud farms from expanding in response to Coolmore and/or Darley leaving the Upper Hunter because:

- owners of existing stallions can easily move their stallions to the Upper Hunter;
- the supply of stallions is dynamic, and so a large proportion of the current group of top stallions will no longer be in that bracket by the time Coolmore and/or Darley leave, if at all; and
- the owners of shuttle stallions can quickly respond by choosing to stand them in the Upper Hunter for one or more seasons, as market opportunities arise.

Second, the large capital cost of a stallion is not a barrier to entry – it is a standard principle of competition economics that a fixed cost is not a barrier to entry if it can be recouped on exit. The cost of purchasing a stallion can largely be recouped by selling the stallion, and so the capital sum involved cannot properly be regarded as a barrier to entry.

Third, although stallions are individually differentiated, this does not prevent other stallions from replacing any that leave the Upper Hunter. On the contrary, the existence of differentiation among broodmares (and so the preference of their owners) implies that stallion owners will benefit from being located in close proximity to a large pool of differentiated broodmares (and vice versa). Such differentiation serves to strengthen the motivation of owners to stand their stallions in the Upper Hunter if other stallions were to leave.

Fourth, if Coolmore and Darley were to relocate and all of their stallions were to follow, there is no risk of an 'excess supply' of stallions in the Upper Hunter that could deter entry. On the contrary, the exodus of stallions would cause a shortage in the Upper Hunter, attracting other stallion owners.

In my opinion, the only notable real barrier to entry and expansion in thoroughbred breeding is the availability of appropriate land for stallions/broodmares which, as emphasised by Coolmore and Darley, can take many years to develop. This requirement places a constraint on the rate at which any locational cluster can expand

⁶⁸ My first report, pp 35-45.

and, further, during the time that new land suitable for a breeding operation is being developed in Victoria, land suitable to support entry or expansion in the Upper Hunter would be already available.

Finally, following its own, independent assessment in 2008, the Australian Competition and Consumer Commission (ACCC) concluded that there were low barriers in thoroughbred breeding. The ACCC is the pre-eminent, expert government body on competition matters, and routinely assesses the nature and extent of barriers to entry in particular industries for the purpose of its merger clearance and competition law enforcement activities. The ACCC is impartial and could not have foreseen the potential significance of the question of barriers to entry in the present context. In my opinion, its views should be given substantial weight.

It follows from these considerations that stallion owners from elsewhere in Australia as well as the northern hemisphere would have both the ability and a strong incentive to bring their stallions to the Upper Hunter in the event that any Coolmore or Darley stallions were to leave the region.

5.2 Shortage of stallion prospects not a barrier to entry

Dr Stowe contends that a shortage of stallion prospects, ie, a thoroughbred stallion that has the potential to stand at stud, is a barrier to entry.⁶⁹ I disagree.

The analysis I present in section 4.3.2 showing the strongly dynamic nature of the identity of premium stallions at any point in time casts significant doubt on the suggestion that the ability to identify and obtain such stallions is a barrier to entry. Of course, each premium stallion can have just one owner (or group of owners), who may be strongly disinclined to relinquish their interest. However, the data show that the composition of this premium group turns over from one season to the next. Consistent with this, Dr Stowe observes that:

....competition for these prospects is strong among the top stallion farms.⁷⁰

The implication is that all aspiring entrants into the market for stallion services have the opportunity to compete to identify and acquire the next premium product. Beyond knowledge, skill and perhaps a degree of luck, there is no basis on which one party can gain a systematic advantage over others from participating in this process.

Nevertheless, the question of how easy or difficult it may be to identify and acquire an existing or prospective premium stallion, has no bearing on whether or not the owners of premium stallions would choose to stand them in the Upper Hunter if some of the stallions were to depart. Rather, in the face of some of the stallions standing at Coolmore and Darley departing to the Upper Hunter, I expect that:

- although one way for such expansion to occur is through a stallion prospect being purchased, it is equally possible that owners would move existing stallions standing elsewhere into the Upper Hunter, or a stallion that was otherwise moving to Victoria could be purchased by new owners and moved to the Upper Hunter;
- in any case, very few additional stallions would be needed to fill the gap left by Coolmore and/or Darley – for example I showed in my first report that the net effect of Coolmore leaving (and all its stallions following) would be the loss of three good quality stallions, once expansion by other, existing Upper Hunter stallions is taken into account;⁷¹
- I described in section 4.3 that a substantial amount of time would elapse between a decision by Coolmore and Darley to leave the Upper Hunter and their physical departure, allowing many new stallion prospects to develop – the dynamic nature of the thoroughbred industry is underlined by the fact that

⁶⁹ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 4.

⁷⁰ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 4.

⁷¹ My first report, p 37.

over two thirds of stallions in the top 30 in 2005 were no longer in that group eight years later (see figure 4.5); and

- shuttle stallions can be brought from overseas at short notice, and recent data underlines that the number of stallions shuttling into and out of Australia can change quickly, in response to evolving market demand – with the consequence that new stallion prospects may not be needed at all to fill any gap.

5.3 Cost of stallions not a barrier to entry

Dr Stowe contends that the capital investment needed to purchase stallions (or stallion prospects) is very large and that this is a barrier to entry.⁷² This observation has no bearing on the question of whether stallion owners from elsewhere would move their stallions to the Upper Hunter if other stallions left, because:

- capital investment costs are not a barrier to entry – rather, it is the existence of sunk costs that can establish a barrier to entry, yet the vast majority of the capital investment required for purchasing a stallion is not ‘sunk’ because it can be recouped through resale, either in its entirety or in the form of a part interest; and
- the current owners of stallions do not need to invest any capital – since they already own the stallions, which can easily and quickly be moved to the Upper Hunter.

5.4 Differentiation of stallions not a barrier to entry

Dr Stowe also contends that the differentiation between stallions is a barrier to entry,⁷³ presumably because any stallions that left the Upper Hunter could not be replaced by those that are genetically identical.

However, this also does not represent a barrier to entry but, rather, is one of the reasons that the Upper Hunter would be very attractive to stallion owners. First, broodmares are covered by a range of stallions, and vice versa, and so it is not the case that each broodmare is or can be covered by just one stallion, which it must follow wherever that stallion goes.

Second, the differentiation between stallions and broodmares implies that their owners benefit from locating their thoroughbreds in close proximity to a large number of other thoroughbreds, so as to give the greatest choice of potential covers. The large number of broodmares in the Upper Hunter region ensures that a stallion owner can have a great deal of choice and be likely to find numerous suitable broodmares prepared to meet its covering fee.

5.5 Excess capacity will not affect profitability of entry

Dr Williams contends that any potential new operator of the Coolmore and Darley properties in the Hunter Valley would have to assume that the continued operation of those properties was likely to result in substantial excess capacity in the industry,⁷⁴ and that this would reduce the profitability and, as such, the likelihood of entry.

This conclusion can only be drawn if one is prepared to make a series of demanding assumptions. In particular, Dr Williams’ hypothesis of surplus capacity arising in the Upper Hunter – so that entry by prospective operators of the properties vacated by Coolmore and Darley would be unlikely – presupposes that:

⁷² Stowe, J, *Peer Review of “Expert report of Greg Houston” and Dr Jeff Bennett’s “Peer review of expert report of Greg Houston”*, 22 November 2016, p 4.

⁷³ Stowe, J, *Peer Review of “Expert report of Greg Houston” and Dr Jeff Bennett’s “Peer review of expert report of Greg Houston”*, 22 November 2016, pp 4-6.

⁷⁴ Williams, P, *Drayton South Coal Project*, 24 November 2016, p 8.

- all of the stallions standing at Coolmore and Darley move with those studs – for the reasons I explain in section 4.3, in my opinion the owners of stallions standing at Coolmore are more likely to move their stallions to another location in the Upper Hunter than to Victoria;
- broodmares can be covered by stallions at any location and so Coolmore and Darley stallions will continue to serve any broodmares that may remain in the Upper Hunter – in contrast, broodmares are generally covered by stallions located in close proximity to them (if this was not so, then Coolmore and Darley’s relocation would not affect the Upper Hunter); and
- no other stallions move from Victoria to the Upper Hunter – in my opinion, if Coolmore and Darley’s stallions left the area, there would be a strong incentive for owners of stallions standing in Victoria to move them to the Upper Hunter, for the reasons I set out below.

Over time, the forces of demand and supply can be expected to ensure there is a balance of broodmares and stallions in each thoroughbred breeding cluster, ie:

- when there are too many stallions for the number of broodmares in a particular region, then the cover fee can be expected to fall and so:
 - > some broodmare owners will move to the cluster; and
 - > some stallion owners will move their stallions away from the cluster;
- when there are too few stallions for the number of broodmares in a particular region, then the cover fee can be expected to rise and so:
 - > some broodmare owners will move away from the cluster; and
 - > some stallion owners will move their stallions to the cluster.

These forces of demand and supply are constrained by the price and availability of appropriate land for the broodmares and stallions. If the total number of thoroughbreds (being stallions and broodmares in combination) increased, then the price of agistment would be expected to increase in the short term and, eventually, a particular location would reach its capacity for the number of broodmares (which are far greater in number than stallions). In the long term, suitable new land can be developed.

I described in section 4.3.2 why it is impracticable that all of the broodmares covered by Coolmore stallions could leave the Upper Hunter for Victoria over a single season – and if the stallions did not leave then balance would be maintained and the equine CIC would be unaffected. Reinforcing this, the consequences of any demand and supply imbalances that I describe above would make it attractive for owners of stallions standing elsewhere to move their stallions to the Upper Hunter. This could happen very quickly, and certainly before up to 3,000 broodmares have relocated away from the Upper Hunter.

In my opinion, Dr Williams’ conclusion that entry of new or expanded thoroughbred breeders to the Upper Hunter would involve reduced profitability, and so be less likely, can only be derived through the adoption of unrealistic and unstated assumptions. Any potential new operator of the Coolmore and Darley properties in the Upper Hunter would not have to assume that the continued operation of those properties was likely to result in substantial excess capacity in the industry.

5.6 ACCC concluded barriers to entry were low

The ACCC is the pre-eminent, expert government body on competition matters, and routinely assesses the nature and extent of barriers to entry in particular industries for the purpose of its merger clearance and competition law enforcement activities.

In 2008, the ACCC investigated the proposed acquisition of the Woodlands stud by Darley, in order to assess whether that proposed acquisition may give rise to a substantial lessening of competition in any relevant market. At the close of its investigation of the proposed transaction, the ACCC concluded that:⁷⁵

...barriers to entry into the national market for breeding thoroughbred horses appear to be relatively low.

This finding is consistent with my opinion that, if suitable land and facilities are available, it is easy to enter or expand in the nature of thoroughbred breeding by moving an existing stallion (possibly from overseas).

The ACCC is impartial and could not have foreseen the potential significance of the question of barriers to entry in the present context. In my opinion, its views should be given substantial weight.

5.7 Availability of land and facilities is a potential barrier

In my opinion, none of the material presented by Darley and Coolmore or experts commissioned by them has identified any significant barriers to entry that would prevent owners moving their stallions to the Upper Hunter in order to take advantage of the opportunity that would present if any of the stallions standing at either Coolmore or Darley were to leave the region.

However, both Coolmore and Darley have identified an important aspect of their operations that, in my opinion, can represent a barrier to entry in the provision of thoroughbred breeding services. In particular, these parties have emphasised that broodmares and stallions need suitable, specialist land and facilities, and that this can take many years to develop.⁷⁶

The availability of suitable land and facilities amounts to a barrier to entry, if there are not existing facilities available. The Upper Hunter has such a large number and size of existing facilities for stallions that I expect it would be able to accommodate a small number of additional stallions at existing stud farms. On the other hand, a substantial amount of investment and great deal of time would be needed to provide for a large number of additional stallions and broodmares in Victoria.

I discuss the implications of this need for and difficulty of developing suitable land for the dynamics of the process by which stallions and broodmares would relocate from the Upper Hunter to Victoria in sections 4.3 and 4.4.

⁷⁵ Australian Competition and Consumer Commission, *Darley Australia Pty Ltd - proposed acquisition of Woodlands Stud*, 9 May 2008, <http://registers.accc.gov.au/content/index.phtml/itemId/827247/fromItemId/751043>, accessed 6 December 2016.

⁷⁶ Coolmore, *Submission to PAC*, 29 June 2016, p 26; Darley, *Submission to PAC*, 4 July 2016, p 27.

6. Role of perceptions for stud/broodmare farms

The review PAC formed the view that, although the effect of the proposed mine on noise, air quality etc was acceptable, the potential harm is to the *perception of the studs* in the minds of their customers.⁷⁷ It said that the impacts of the proposed mine:⁷⁸

...represent[s] a real risk to the brand and image of the studs, and more importantly to the studs' reputation, and consequent viability in this location.

It further said that:

it is of great concern to the Commission that the studs are considering leaving the Hunter Valley....⁷⁹

The likely effects of the studs relocating would be that the cluster would suffer to a significant extent and enter a potentially terminal decline.⁸⁰

In concluding, the review PAC stated that:

The proposal does not just threaten the viability of two neighbouring horse studs, but by virtue of the significance of those studs, it places the wider Equine Critical Industry Cluster under threat. Further the reputational damage to the region's other sectors must also be considered, as collapse of one sector, on account of the impacts of mining have the potential to damage both the region and NSW's reputation for quality agricultural production and a clean health environment, with implications for both the Hunter's viticulture and tourism industries.⁸¹

In my first report I concluded that the perception of Coolmore and Darley's studs would not be substantially affected by the proposed Drayton South mine.⁸² In this section I present further evidence that is consistent with this proposition and address some of the claims made by Dr Stowe, Dr Bell and Dr Williams in relation to my earlier conclusion and the analysis that supported it.

6.1 Summary

Dr Stowe contends that the perceptions of the customer are of 'utmost importance to Coolmore and Darley' and are 'critical to farm profits', although she does not offer any substantive evidence or reasoning for this claim. However, these claims conflict with the explanation given elsewhere in Dr Stowe's report that:

...stud fees for US sires do not depend on their location; rather, it depends [sic] racing performance of their progeny, the commercial viability of a sire's progeny, and external economic factors, Therefore, stallions should command the same stud fee regardless of where they stand.

Dr Stowe's conflicting explanation of the factors that do determine stallion fees is supported by her own empirical research, which examined what the main determinants of cover fees for stallions at the beginning of their careers. Dr Stowe found that a number of variables affect cover fees, including the stallion's earning from races, whether the stallion had won the Kentucky Derby and the cover fee for the stallion's sire.

The location and characteristics of the farm or stud at which a stallion is standing within a cluster (and so the perceptions of customers about its location and characteristics) were found by Dr Stowe not to affect the

⁷⁷ My first report, p 17.

⁷⁸ PAC review report, p 47.

⁷⁹ PAC review report, p 49.

⁸⁰ PAC review report, p 50.

⁸¹ PAC review report, p 51.

⁸² My first report, pp 19,31.

cover fee. It follows that there is no reasonable basis on which to claim that perceptions of customers (being broodmare owners, deciding which stallion to have cover their mare) as to the location and characteristics of the stud at which a stallion stands are important in determining customers' choices or farm profits.

Dr Bell makes a similar claim that perception is important, but without providing any empirical or other significant evidence beyond his reference to the results of a survey conducted by Coolmore. I explain below that this survey is not robust and, as such, no weight should be given to it.

Dr Williams claims that the loss of amenity/reputation to Coolmore and Darley is clearly material because they have spent so much time and resources opposing the proposed mine. However, Anglo has spent many times the resources mobilised by the studs and so, by Dr Williams' rationale, the benefit of the project to Anglo must be greater than the cost of the project to the studs.

Finally, the vast majority of stud and broodmare farms operating in the Upper Hunter cluster have not made submissions to the determining PAC. Were it the case that the proposed mine was expected to have a significant, detrimental effect on the equine CIC, I would expect that virtually all of the broodmare and stud farms in the Upper Hunter would have made strong representations opposing the proposed mine. I hold this expectation because the prospect of significant detriment to the cluster would severely diminish the value of those other farms' most valuable asset – their land.

Rather, if one was to draw an inference on a similar basis to that of Dr Williams, the appropriate conclusion would be that the silent majority of studs and broodmare farms perceived either no detriment to their individual interests or upside in terms of potential competitive advantage.

6.2 Role of perception in thoroughbred breeding

6.2.1 Evidence as to perception of broodmare owners

Dr Stowe states in her report that it is reasonable to assume that the perceptions of the customer are of utmost importance to Coolmore and Darley because:⁸³

- the clientele's experience on the farm may be one of the determinants of which farm to partner with; and
- customers are concerned as to the likelihood that their mares will get pregnant, which could be affected by stress from blasting.

I agree that customers care about whether their mare will become pregnant, and that customers' decisions are driven by their expectations of the profits they expect to make. However, I am not aware of any evidence suggesting that the project would have any effect on the likelihood of a mare becoming pregnant. Rather, my understanding is that the noise impact of the project on Coolmore and Darley will be indistinguishable from current levels of background noise.⁸⁴

Further, the example of Edinglassie suggests that the owners of broodmares are comfortable with their mares being pregnant in close proximity to coal mines.⁸⁵ I explain why it is relevant to compare Coolmore and Edinglassie in section 3.3.1 of my first report.⁸⁶ Dr Stowe argues that Edinglassie (a broodmare farm) is not a good comparator for Coolmore – primarily a stud farm – but does not dispute that Edinglassie is a good comparison for the Darley Woodlands broodmare farm. This is significant because, if Darley was to stay in the Upper Hunter then the effect on the equine CIC would be materially less than if both Coolmore and Darley were to leave.

⁸³ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, pp 6-7.

⁸⁴ Hansen Bailey, *Drayton South Coal Project Environmental Impact Statement Volume 1*, May 2015, pp 9-6.

⁸⁵ My first report, p 26.

⁸⁶ My first report, pp 31-32.

Edinglassie has continued to be successful since the date I prepared my first report. Progeny raised at Edinglassie performed strongly in yearling sales, with 28 yearlings sold thus far in 2016 for an average price of \$96,946 – despite its close proximity to the Mt Arthur coal mine.⁸⁷ By way of comparison, Edinglassie sold 27 yearlings with an average price of \$100,537 in 2015.⁸⁸ It follows that my earlier conclusions in relation to the relevance of Edinglassie for assessing the impact of mining in close proximity to a thoroughbred breeding operation have not changed.

Edinglassie is a successful broodmare farm in the Upper Hunter located opposite an open cut coal mine, and so is a good comparison for the significance of proximate mining activity for the perception of Darley Woodlands and Coolmore. Its continued success demonstrates that the owners of thoroughbred horses are comfortable using a broodmare farm that is in close proximity to coal mines.

6.2.2 Brand promise of Darley and Coolmore

Dr Bell claims that the visual ‘...insult of an open cut coal mine within eyeshot or earshot or within range so as to hear or smell the blasting of coal...’ makes the entire brand promise of Darley and Coolmore a lie.⁸⁹ The basis of this opinion appears to be that:

- market research has proven the importance of impressions to a customer, eg, some customers of theme parks in the United States said that the quality of the flowerbeds outside of a theme park was the most important factor in determining whether customers visited the park;⁹⁰
- a Google search finds that 90 per cent of articles in response to the query ‘is it safe to live next to a coal mine’ say it is not safe,⁹¹ and
- a survey of Coolmore’s customers found that 96 per cent said it was not – I set out my response to this in section 6.2.3 below.⁹²

I agree that customers’ impressions can have an effect on their choices in certain industries. However, no significant evidence has been provided to show that this is the case for the thoroughbred breeding industry. Rather, I describe in section 6.3 that the research that has been conducted in relation to the thoroughbred breeding industry has not found any characteristics of individual farms that affect the stud that a thoroughbred owner chooses.

Dr Bell’s more general reference to market research and the use of flowerbeds outside theme parks does not assist in establishing whether the perception of the studs will be affected by the project and whether that perception could reasonably be expected to affect the decisions of broodmare owners in choosing a particular stallion service.

In my opinion, counting the results of a Google search in relation to whether it is safe to live near a coal mine provides no useful information. Each answer arising from a google search does not carry equal weight. One result may be from a credible source that draws upon scientific evidence, whilst the rest may emanate from completely untrustworthy sources. In any case, the particular search terms cited by Dr Bell are not relevant to the question at hand.

⁸⁷ Analysis of data from public horse auctions conducted by Inglis and Magic Millions in 2016, including broodmare, racehorse, yearling and weanling sales. See: Inglis’ website, <http://inglis.com.au/sales/results/#d3HqvJjHD7brKAX5.97>, accessed 29 November 2016; Magic Millions’ website, http://www.magicmillions.com.au/calendar/category/sales/list/?tribe_paged=1&tribe_event_display=past, accessed 29 November 2016.

⁸⁸ Analysis of data from public horse auctions conducted by Inglis and Magic Millions in 2015, including broodmare, racehorse, yearling and weanling sales. See: Inglis’ website, <http://inglis.com.au/sales/results/#d3HqvJjHD7brKAX5.97>, accessed 29 November 2016; Magic Millions’ website, http://www.magicmillions.com.au/calendar/category/sales/list/?tribe_paged=1&tribe_event_display=past, accessed 29 November 2016.

⁸⁹ Bell, L, *Review of “Expert Report of Greg Houston” of 29 March 2016*, November 2016, p 5.

⁹⁰ Bell, L, *Review of “Expert Report of Greg Houston” of 29 March 2016*, November 2016, p 5.

⁹¹ Bell, L, *Review of “Expert Report of Greg Houston” of 29 March 2016*, November 2016, p 5.

⁹² Bell, L, *Review of “Expert Report of Greg Houston” of 29 March 2016*, November 2016, p 5.

6.2.3 Coolmore's survey

Coolmore sent a survey to 1,809 clients and received 455 responses within two days.⁹³ The survey was conducted using SurveyMonkey, and comprised five questions, ie:

1. How many broodmares do you have?
2. Do you think it is acceptable to locate an open cut coal mine 900 metres from a stud farm?
3. If NSW decided to permit a large open cut coal mine 900 metres from Coolmore and Darley, do you think this would damage the representation of Hunter Valley as the prime location for breeding thoroughbreds?
4. If you think it would damage the reputation of the Hunter Valley, how damaging do you believe it would be on a scale of 1 to 5? Where 1 is less damaging and 5 is extremely damaging.
5. Please add a comment if you wish.

An inherent challenge to the efficacy of survey evidence is that surveys elicit information as to respondents' opinions or intentions, but cannot measure or observe the particular actions that people may or may not take. Surveys are therefore prone to the substantial risk of drawing findings that may not be borne out in practice.

One of the most important risks to the validity of a survey is the extent to which any context that may be conveyed is sufficient, accurate and complete. Similarly, the framing of questions can have a substantial influence on the responses.

Coolmore does not disclose the nature or extent of the information respondents were given before or at the time of the survey. Many of the comments left by respondents refer to the mine being an eyesore, noisy and detrimental to horses' health. This suggests that the respondents were not informed that the proposed mine would not be seen from Coolmore's stud farm or that the noise from the project would be indistinguishable from current levels of background noise.⁹⁴

Coolmore also did not appear to disclose to recipients that the mine is not expected to have any impact on equine health, which was a concern raised many times in the comments. In contrast, if the project is to proceed, Coolmore would at that time have a strong incentive to provide more fulsome information so that its customers were discouraged from making a decision not to purchase services from Coolmore without having been apprised of all relevant facts. In that circumstance, it is conceivable that perceptions and the responses to a differently framed survey may change dramatically.

The voluntary nature of the survey means that it is very likely to have been affected by non-response bias. Voluntary surveys are subject to bias when those who do not respond have different characteristics than those who do, such as a lower level of investment in the outcome or more moderate views.⁹⁵

There is also evidence of extreme response bias. In Coolmore's survey, this implies that moderate respondents provide answers that are more extreme than they actually believe, due to manipulative wording or a desire to please the survey administrator.⁹⁶ For example, the phrasing of the third and fourth questions about the damage to the reputation of Hunter Valley indicates that there is an expected or desired answer, pushing respondents towards an extreme response.

Coolmore states that a 'significant number' of clients suggested that they would move their thoroughbreds out of the Hunter Valley in the voluntary comments section of the survey.⁹⁷ Only 210 of the 455 respondents

⁹³ Coolmore, *Submission to PAC*, 29 June 2016, pp 13-15.

⁹⁴ Hansen Bailey, *Drayton South Coal Project Environmental Impact Statement Volume 1*, May 2015, pp 9-6.

⁹⁵ Australian Bureau of Statistics, *Low response rates and their effect on survey results*, November 2000, p 1.

⁹⁶ <http://surveymethods.com/blog/what-is-extreme-response-bias/>, accessed 30 November 2016.

⁹⁷ Coolmore, *Submission to PAC*, 29 June 2016, pp 13-15.

left comments, of which 29 implied that they would cease business in Hunter Valley. In my opinion, this does not constitute a 'significant number', as Coolmore claims.

In summary, the basic lack of robustness of the survey implies that its results are not capable of supporting the claims made in relation to it.

6.3 Stallion fees do not depend on the stud farm

Beyond her – incorrect⁹⁸ – supposition that stress induced by the noise of the project may affect the risk of a mare getting pregnant, Dr Stowe contends that the perceptions of the customer are of utmost importance to Coolmore and Darley,⁹⁹ and are critical to farm profits.¹⁰⁰ However, Dr Stowe she does not cite any evidence for this claim.

As a matter of economic principle, if perceptions of that farm were of 'utmost importance' to the choice made by thoroughbred owners as to the property at which their thoroughbreds should be agisted and covered, then stallion service fees would depend upon the characteristics and location of the stud at which the stallion stands. However, in explaining the factors that do determine stallion fees, Dr Stowe states elsewhere in her report that the location of a stud farm has no effect on the fees that may be achieved by its stallions, ie:

...stud fees for U.S. sires do not depend on their location; rather, it depends [sic] racing performance of their progeny, the commercial viability of a sire's progeny, and external economic factors. Therefore, stallions should command the same stud fee regardless of where they stand.¹⁰¹

Dr Stowe's explanation of the factors that do determine stallion fees conflicts with her contention that customer perceptions are of 'utmost importance' and 'critical to farm profits'. Both propositions cannot be true. Rather, the particular factors cited by Dr Stowe as being important for determining stud fees – and the absence of any location influence – are the product of her own prior, empirical research.

In an academic research paper published in 2010, Dr Stowe undertook empirical analysis of a range of potential variables that may be relevant for determining cover fees for stallions in Kentucky, United States. I list all of the potential variables examined by Dr Stowe examined in table 1 below, along with her findings as to the significance (or not) of each parameter. None of the variables that were found to be statistically significant in determining cover fees, nor any of the variables that were tested but found not to be significant, include any reference to the perception or characteristics of the stud farm at which the stallion stands. This prior research of Dr Stowe is consistent with her statement above that the particular stud at which the stallion stands is not relevant for its cover fee.

Put another way, Dr Stowe's statement in her review report prepared for Coolmore that:

customer perception of stud farms is critical to farm profits¹⁰²

is inconsistent with the conclusions of her own academic research and has no reasonable basis in terms empirical evidence.

The only variable particular to the stud farm at which a stallion stands that Dr Stowe found was significant (or even tested) is that the cover fee was found to be higher were the 'freshman sire'¹⁰³ to be standing in

⁹⁸ I explained in section 6.2.1 my understanding that the noise impact of the project on Coolmore and Darley will be indistinguishable from current levels of background noise. See also footnote 84.

⁹⁹ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, pp 6-7.

¹⁰⁰ Stowe, J, *Transcript of video recording presented to PAC public meeting*, 17 November 2016, p 1.

¹⁰¹ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 12.

¹⁰² Stowe, J, *Transcript of video recording presented to PAC public meeting*, 17 November 2016, p 1.

¹⁰³ Dr Stowe defines a 'freshman sire' as one standing in only its first year at stud.

Kentucky.¹⁰⁴ This observation is consistent with research by Dr Stowe's colleagues, which found a similar effect.¹⁰⁵ This implies that Dr Stowe's statement that stallions should command the same stud fee regardless of where they stand must refer to the comparison of different stud farms within a cluster, but not between one cluster and another.¹⁰⁶

Table 1: List of variables used in analysis of freshman sire stud fees¹⁰⁷

Significance	Regression Variable
Significant:	Advertised price of one breeding season to the freshman sire
	Freshman sire's total career earnings achieved (\$ United States)
	Freshman sire's career wins divided by career starts × 100
	Indicator variable which takes the value of 1 if the freshman sire won the Kentucky Derby
	Number of Grade 1 stakes races won in the freshman sire's racing career, excluding two-year-old Grade 1 stakes wins and Kentucky Derby wins
	Indicator variable which takes the value of 1 if the freshman sire stands in Kentucky for his freshman season
	Year in which the freshman sire entered the breeding market
	Age of the freshman sire in the year he entered the breeding market
	Stud fee of the freshman sire's sire
	Indicator variable which takes the value of 1 if the sire of the freshman sire won at least one Grade 1 stakes race
Insignificant:	Average distance of all races won, in furlongs (one furlong = 1/8 mile)
	Number of Grade 1 stakes races the freshman sire won as a two-year-old
	Indicator variable which takes the value of 1 if the freshman sire was unraced (never started a race)
	Indicator variable which takes the value of 1 if the freshman sire's dam won at least one stakes race in her career
	Number of stakes-winning siblings of the freshman sire
	Number of stallions with the same sire as the freshman sire standing at stud in his first year

Source: Stowe, J, *A Hedonic Price Analysis of Differentiated Products of Unknown Quality: Freshman Sire Stud Fees in the Thoroughbred Breeding Industry*, Journal of Agribusiness 28, 2010, p 23.

Kentucky is one of the three best thoroughbred breeding clusters in the world, along with Newmarket in the United Kingdom and the Hunter Valley in New South Wales. This is consistent with the opinion of Dr Stowe that:

¹⁰⁴ Stowe, J, *A Hedonic Price Analysis of Differentiated Products of Unknown Quality: Freshman Sire Stud Fees in the Thoroughbred Breeding Industry*, Journal of Agribusiness 28, 2010, p 29.

¹⁰⁵ Hansen, C and S Saghaian, *Progeny? Performance? What really matters in a stud fee*, Selected Paper prepared for presentation at the Southern Agricultural Economics Association's 2015 Annual Meeting, Atlanta, Georgia, 31 January – 3 February, 2015.

¹⁰⁶ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 12.

¹⁰⁷ Stowe, J, *A Hedonic Price Analysis of Differentiated Products of Unknown Quality: Freshman Sire Stud Fees in the Thoroughbred Breeding Industry*, Journal of Agribusiness 28, 2010, p 23.

Garkovich, Brown, and Zimmerman (2008) conceptualize Kentucky's equine industry as an economic cluster according to the key characteristics set forth by Porter. It would be reasonable to assume that Central Kentucky and the Upper Hunter region share a number of similarities.¹⁰⁸

Drawing on the similarities that Dr Stowe finds between Central Kentucky and the Upper Hunter, it is likely that Dr Stowe's research also lends weight to the conclusion that a stallion standing in a premium cluster such as the Hunter Valley or Central Kentucky would command a higher fee than would be the case were it to stand outside the cluster, eg, in Victoria.

The existence of a similar economic effect in relation to the Upper Hunter would strengthen the incentive for Coolmore and Darley to remain in the cluster if the project was to proceed. This is because, even if a stud was to face tangible negative financial consequences, these would need to be weighed against the loss of a premium component for its stallion services revenue.

To summarise, the available evidence – including the published research work of Dr Stowe – does not suggest that the perceptions or characteristics of a stud farm have any significant effect on cover fees, and so on the choice made by thoroughbred owners as to the particular property at which their stallions or broodmares should stand or be covered. However, the evidence does suggest that broodmare owners are willing to pay more for stallion fees if they are located in a premium cluster, such as the Upper Hunter.

Both these findings lend strength to my earlier conclusion that the Upper Hunter equine cluster is likely to be robust to the effect of the proposed mine.

6.4 Resources expended in supporting or opposing the project

Dr Williams claims that the loss of amenity/reputation to Coolmore and Darley is clearly material because they have spent so much time and resources opposing it.¹⁰⁹ I agree that extensive material put forward by Coolmore and Darley is consistent with these parties perceiving there to be some risk to their businesses if the project is approved. However, the studs are not fully in control of the resources they expend, because they do not control the process. Further, the resources already expended in opposing the project may not affect the studs' decisions as to how much more to spend on each occasion that they are able to make further responses.

Notwithstanding, Anglo has committed many times the resources in seeking approval for the project than the studs have in opposing it and so, by Dr Williams' rationale, the benefit of the project to Anglo must be greater than the cost of the project to the studs.

Finally, it is notable the vast majority of stud and broodmare farms operating in the Upper Hunter cluster have not made submissions to the determining PAC.¹¹⁰ Were it to be the case that the proposed mine was expected to have a significant, detrimental effect on the equine CIC, it would be reasonable to have expected that virtually all of the broodmare and stud farms in the Upper Hunter would have made strong representations opposing the proposed mine.

I hold this expectation because the prospect of significant detriment to the cluster would severely diminish the value of those other farms' most valuable asset – their land. In fact, Darley has stated that the broodmare farm businesses will be ruined and their land values completely undermined as a result of their broodmare owner clients moving their mares.¹¹¹

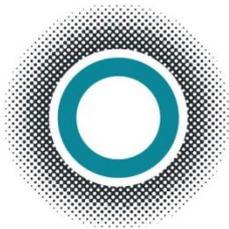
¹⁰⁸ Stowe, J, *Peer Review of "Expert report of Greg Houston" and Dr Jeff Bennett's "Peer review of expert report of Greg Houston"*, 22 November 2016, p 9.

¹⁰⁹ Williams, P, *Drayton South Coal Project*, 24 November 2016, p 8.

¹¹⁰ Four broodmare farms have made public submissions to the determining PAC opposing the project. See: <http://www.pac.nsw.gov.au/projects/2016/09/drayton-south-coal-project>.

¹¹¹ Godolphin, *Letter to Mr Paul Forward RE: Drayton South Coal Project – D431/16*, 30 November 2016, p 7.

If one was to draw a similar inference from these response rates as that drawn by Dr Williams, the appropriate conclusion would be that the silent majority of studs and broodmare farms perceive that the project will cause either no detriment to their individual interests arising from the project or a degree of upside in terms of potential competitive advantage.



HOUSTONKEMP

Economists

Sydney

Level 40
161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800

Singapore

10 Marina View
#15-10 Asia Square Tower 1
Singapore 018960

Phone: +65 6817 5010