



9 August 2019

Dartbrook Coal Mine - Modification 7 (DA 231-7-2000 MOD7)

EXECUTIVE SUMMARY

Dartbrook Mine has been in 'care and maintenance' for the past 13 years. Mining operations were first approved in December 1991 and longwall mining of the Wynn seam commenced in 1996. In 2001 extended mining operations were approved under DA 231-7-2000 and longwall mining shifted from the Wynn seam to the Kayuga seam in 2004. Coal was transported from the mine workings to the East Site using a conveyor system in the existing Hunter Tunnel (an underground passageway). When the mine was placed in 'care and maintenance' due to operational difficulties and lower coal prices, the long wall equipment and Hunter Tunnel conveyor system were removed. DA 231-7-2000 remains the current approval and operates until 5 December 2022.

The Modification 7 (DA 231-7-2000 MOD7) sought to recommence underground coal mining on the site using bord and pillar methods as an alternative option to longwall mining; use a varied coal clearance system, including transport of coal by trucks using a private haul road to a new coal delivery shaft connecting to an existing underground conveyor to the existing coal handling and preparation plant, and to extend DA 231-7-2000, by 5 years to 2027. DA 231-7-2000 provides for long wall mining operations in the Kayuga, Mt Arthur and Piercefield seams at 6Mtpa, and the operation of the Hunter tunnel, coal handling and preparation plant (including washery) and ROM coal stockpiles, paste plant, paste transport pipeline and reject emplacement area.

The Commission has approved the Application, subject to conditions of consent which permit underground coal mining in the Kayuga seam using bord and pillar methods and the use of a varied coal clearance and handling system, confined to the coal extracted from the bord and pillar operation. This approval will operate only until 5 December 2022 (that is, for the duration of the current approval DA 231-7-2000). The Commission finds the proposed bord and pillar mining and associated coal handling operations are less intensive than the existing approved long wall mining and coal handling operations, and that the impacts that are likely to occur can be adequately mitigated by strict conditions. The Commission finds that on balance the approval of bord and pillar mining and associated coal handling operations up until 2022 is in the public interest.

However, the Commission has determined to refuse the Applicant's proposal to extend DA 231-7-2000 by 5 years to 5 December 2027. While the Commission acknowledges that the proposed Project has the potential to create positive economic and social impacts, the Commission remains unconvinced of the extent of the Project's economic benefits and has concluded that the costs of the Project have not been properly accounted for in the economic analysis and assessment. The Commission has found there were inconsistencies in the assessment, in that some aspects of the assessment referred to impacts of the proposed Project against the existing Project Approval and others referred to impacts compared with the existing mine in 'care and maintenance'. The Commission has concluded that the social and environmental costs of the Project were not adequately assessed and quantified in the context of the range of possible operational configurations that might arise from the combination of the existing approved operations and the proposed modification operations. Additionally, the Commission was not provided with a contemporary assessment of the

potential impacts of the existing approved longwall mining and coal handling operations to support a 5 year extension of this approval (*DA 231-7-2000*), in the context of the significant increase in mining activity and other changes in the area since the original approval was granted in 1991. This gives rise to uncertainty about the Application's future impacts, and the veracity of mitigation available, should some aspects of the currently approved Project, such as longwall mining or coal washery operations continue or restart after 2022. The Application does not deal adequately with these impacts, either alone or in combination with the proposed modification operations. Accordingly, the Commission remains unconvinced that the Application to extend the Project duration by five years to 2027 has been adequately assessed and is in the public interest.

In reaching its decision, the Commission considered carefully the Application under section 75W of the *Environmental Planning and Assessment Act 1979*, the Department of Planning, Industry and Environment's assessment report, advice from relevant government agencies, submissions from Councils, and concerns raised by interested individuals, groups and organisations at its public meeting on 9 April 2019 and in written submissions.

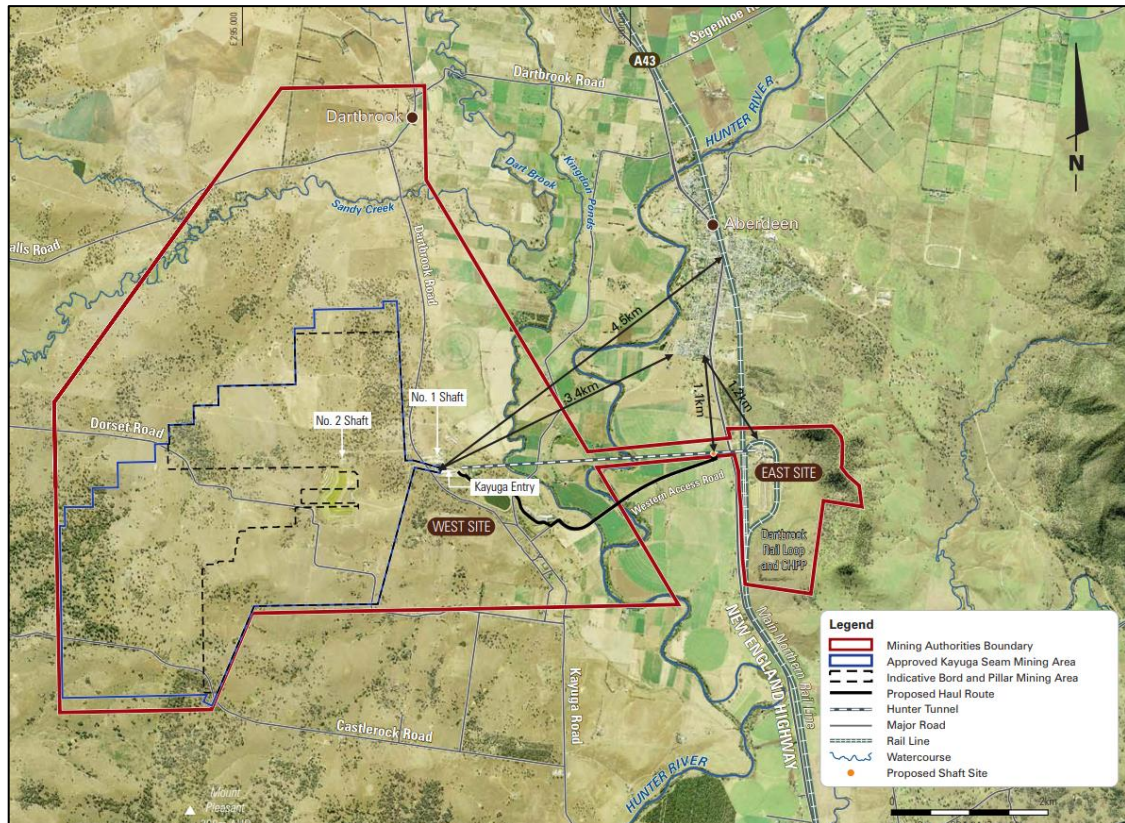
1. INTRODUCTION

1. On 29 January 2019, the NSW Independent Planning Commission (**Commission**) received from the NSW Department of Planning, Industry and Environment (**Department**) a modification application (**Application**) from AQC Dartbrook Management Pty Ltd (**Proponent**) seeking to amend an existing development approval (**Project Approval**) for underground coal mining operations at the Dartbrook Coal Mine (**Project**) under the now-repealed section 75W of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**).
2. The Project is a transitional Part 3A Project under clause 2 of Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* (**Transitional Regulation**), and the Commission is the consent authority in respect of such transitional Part 3A projects under the Minister for Planning's delegation of that function to the former Planning Assessment Commission (**PAC**) by instrument of delegation dated 14 September 2011. The Commission is to be taken to be the same legal entity as the PAC, pursuant to clause 7 of the Transitional Regulation.
3. The ability to modify transitional Part 3A Projects under section 75W (**s75W**) of the EP&A Act has been discontinued, however as the request for this Application was made before 1 March 2018, the provisions of Schedule 2 relating to a modification made pursuant to such a request continue to apply.
4. Under the Minister's delegation dated 14 September 2011 the Commission is the consent authority in respect to the Application because the Department received more than 25 submissions from the public objecting to the Application and an objection was made by Upper Hunter Shire Council (**UHSC**) in relation to the Application.
5. Professor Mary O'Kane AC, Chair of the Commission, nominated Professor Zada Lipman (Chair), Ross Carter, and Peter Cochrane to constitute the Commission determining the Application.

1.1 Site and Locality

6. The Department's Assessment Report dated 23 January 2019 (**Department's AR**) stated that the Proponent acquired the Dartbrook Underground Coal Mine (**Project Site**) in 2017. The Project site is located within both the Upper Hunter and Muswellbrook Local Government Areas (**LGA**).
7. The Proponent's comments to the Commission dated 23 April 2019, stated that the distance from the "Kayuga Entry" "to the centre of Aberdeen is approximately 4.5km. The Proponent also stated that "*the distances from the nearest residences in Aberdeen to the proposed shaft facility and East Site are 1.1 km and 1.2 km, respectively*". These distances are demonstrated in Figure 1.

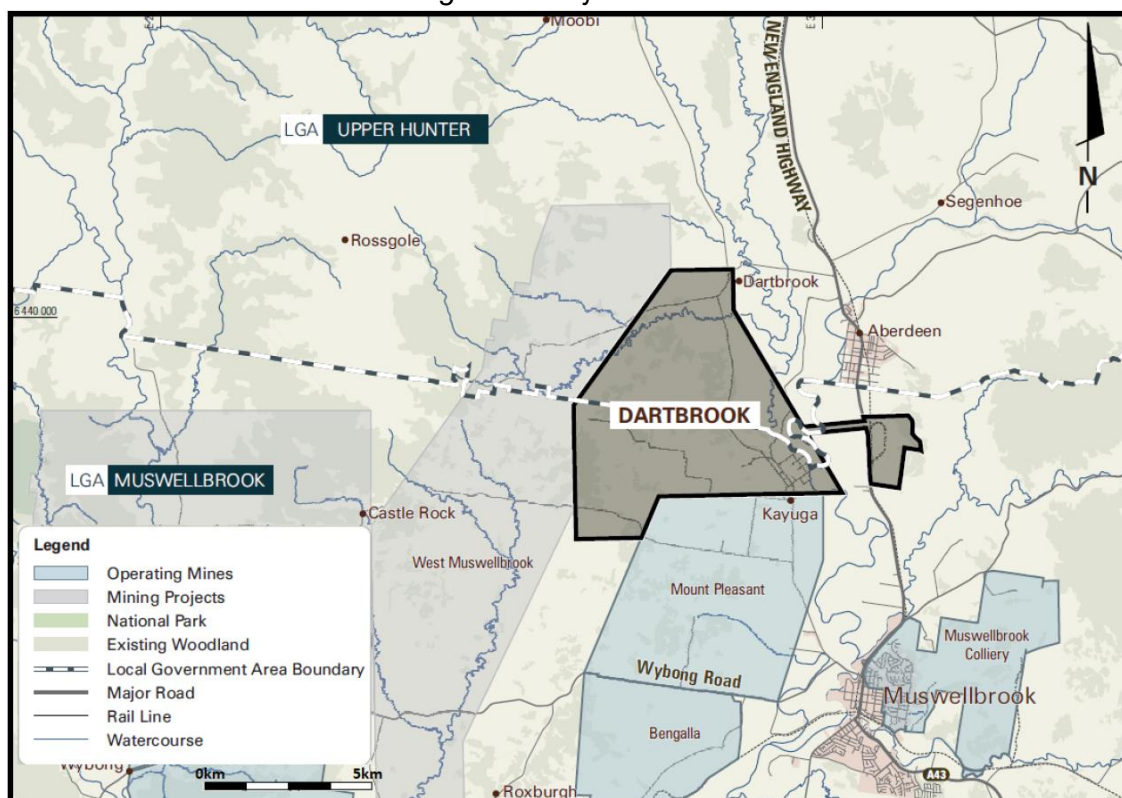
Figure 1: Setbacks from Aberdeen



Source: The Proponent's Comments to the Commission dated 23 April 2019

8. The Department's AR stated that "while the Upper Hunter Valley is known for its coal mining developments, Dartbrook is located on the northern extremity of this region". Surrounding land uses comprise of "coal mining, rural residential uses, tourism and agricultural enterprises including farming on alluvial land, cattle grazing, dairying and thoroughbred horse activities". The site and surrounding land uses are demonstrated in Figure 2 below.
9. According to the Department's AR, approved operations at Dartbrook are split between the eastern operation (East Site) and western operation (West Site). Underground mining occurred at the West Site and the East Site contains the major surface facilities including the coal handling and preparation plant (**CHPP**) and rail loading facilities. The Department's AR stated that these two sites are connected by the Hunter Tunnel, which previously housed an underground coal conveyor system to transfer run-of-mine (**ROM**) coal underground without disruption to the major surface infrastructure and waterways. The Department's AR noted that in late 2006 the mine was placed into care and maintenance due to a combination of operational difficulties and lower coal prices. The mine has remained in care and maintenance for the last 12 years as elaborated in the Department's AR and most of the site has been maintained, except for the removal of the longwall mining equipment and the Hunter Tunnel conveyor system.

Figure 2: Project Location



Source: Department of Planning, Industry and Environment's Assessment Report

1.2 Background to the Application

10. The Department's AR stated that "underground mining operations at Dartbrook were originally approved by the then Minister for Planning in December 1991 and longwall mining of the Wynn seam commenced in 1996".
11. According to the Department's AR "on 28 August 2001, the then minister for Urban Affairs and Planning approved extended mining operations under DA 231-7-2000. Longwall mining shifted from the Wynn seam to the Kayuga seam in 2004 and continued there until late 2006 when the mine was placed into care and maintenance due to a combination of operational difficulties and lower coal prices".
12. The Department's AR stated that "DA 231-7-2000 (as modified) remains the current consent until 2022, although the mine has remained in care and maintenance for the past 12 years". Approval history for this site is set out in Table 1 below.

Table 1: Approval history

Approval / Mod No.	Approval Date	Scope of Approval
DA N91/00424/003	2/09/1991	<ul style="list-style-type: none"> Longwall mining of the Wynn seam until 2012 Construction of surface facilities including the CHPP, rail loop and rail loading facilities Establishment of a reject emplacement area (REA) at the base of Browns Mountain Construction of the Hunter Tunnel
DA 231-7-2000	28/08/2001	<ul style="list-style-type: none"> Longwall mining of the Kayuga, Mt Arthur and Piercefield seams

		<ul style="list-style-type: none"> until 2022 Extraction of 6 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal. Continued use of the CHPP, rail loop and rail loading facilities Installation of a paste plant to blend coarse and fine rejects Construction of a pipeline to transfer reject paste to the REA and expansion of the REA Construction of a new access portal to the Kayuga Seam, the 'Kayuga Entry' (previously 'Kayuga Seam Access Slot') Temporary transportation of ROM coal overland via private haul road to the CHPP, until underground roadways are connected to the Hunter Tunnel
Mod 1	19/06/2002	<ul style="list-style-type: none"> Reduced blast notification and structural inspection zones
Mod 2	16/06/2003	<ul style="list-style-type: none"> Construction and use of an emergency tailings storage cell
Mod 3	4/11/2003	<ul style="list-style-type: none"> Alteration of road access restrictions to allow employees, contractors and suppliers to use local roads
Mod 4	30/03/2004	<ul style="list-style-type: none"> Extension of temporary overland ROM coal haulage by three months to facilitate completion of underground roadways and conveyors to connect the Kayuga workings with the Hunter Tunnel
Mod 5	4/05/2005	<ul style="list-style-type: none"> Co-disposal of fine and coarse rejects within the existing REA
Mod 6	16/11/2011	<ul style="list-style-type: none"> Expansion of ROM coal stockpiles near the CHPP to accommodate 350,000 tonnes of permanent capacity and 50,000 tonnes of emergency capacity Disposal of CHPP tailings within the Wynn seam goaf via a tailings slurry pipeline in the Hunter Tunnel Use of a Nitrogen Injection Plant to replace oxygen gas in the Kayuga seam goaf to reduce risk of spontaneous combustion.

Source: Department of Planning, Industry and Environment's Assessment Report

1.3 Summary of Application

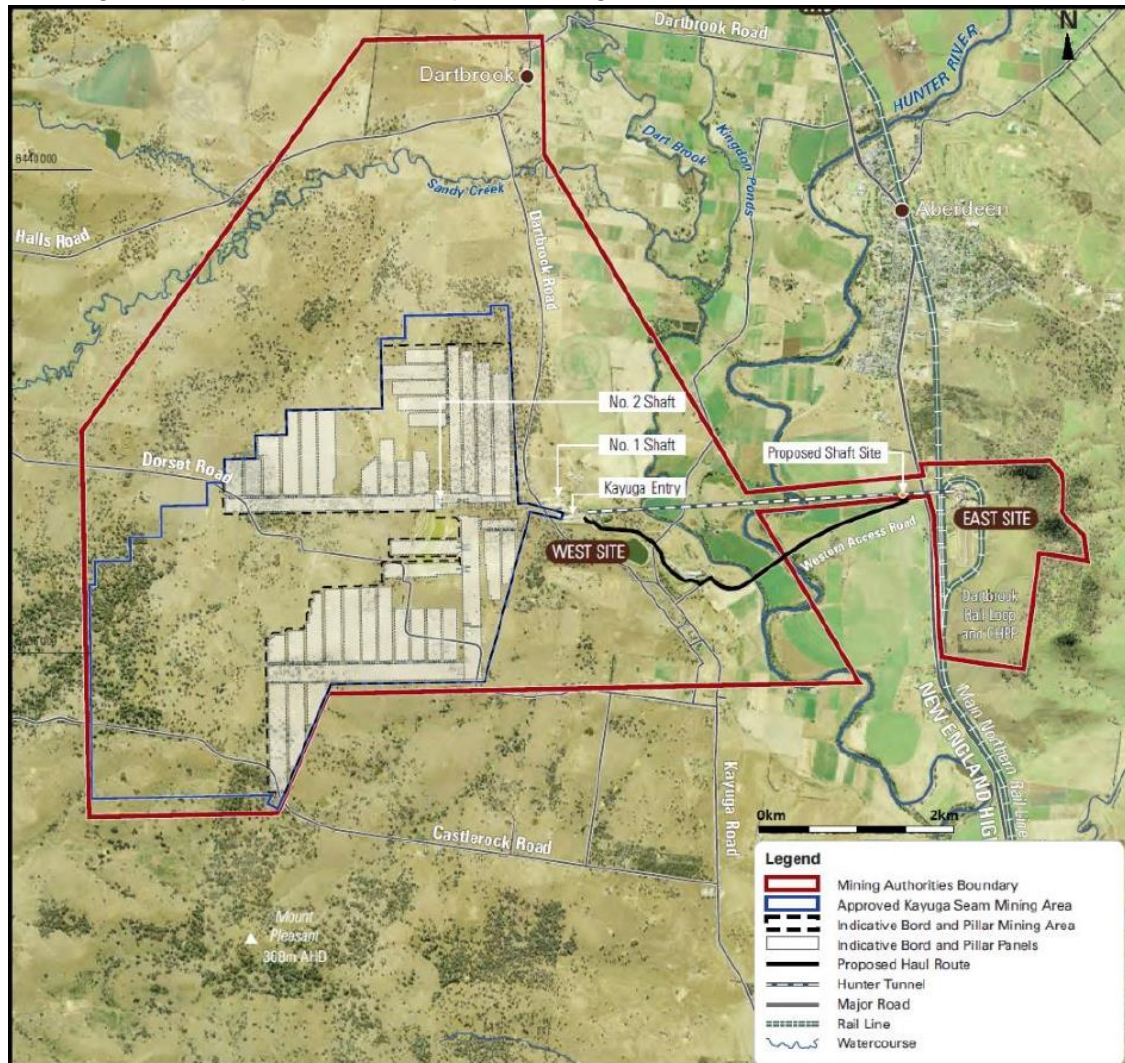
13. On 27 February 2018, the Proponent lodged an Application to amend the existing Project Approval. under s75W of the EP&A Act. The Proponent's Environmental Assessment (**EA**), dated June 2018 was submitted to the Department for assessment.
14. The Department's AR stated that the Proponent submitted its Response to Submissions (**RtS**) on 31 August 2018. According to the Department, the RtS responded to issues raised by both the public and government agencies, with some changes to the proposal to reduce air quality impacts and noise impacts. In response to further issues raised the Proponent also submitted Additional Information (**Additional Information**) dated 12 October 2018, a response to issues raised by the Department (**Response to Department**) dated 26 October 2018 and response to the issues raised by OEH (**Response to OEH**) dated 13 November 2018.
15. The Proponent's RtS stated that the Modification currently before the Commission for determination proposes that the following existing approved activities are not being surrendered but would be extended by 5 years:
 - *Longwall mining operations in the Mt Arthur, Kayuga, Piercefield and Wynn coal seams;*
 - *Extraction of up to 6 million tonnes per annum (Mtpa) of run of mine (ROM) coal;*
 - *Transportation of ROM coal from the mine workings to the East Site using the existing Hunter Tunnel (an underground passageway);*
 - *Processing of ROM coal using the existing Coal Handling and Preparation Plant (CHPP) at the East Site;*
 - *Transportation of product coal to Newcastle by rail; and*

- *Employment of up to 292 full-time equivalent personnel (employees and contractors) during mining operations.*

DA 231-7-2000 enables these activities to be undertaken until 5 December 2022”.

16. The Proponent’s comments to the Commission stated that the Modification currently before the Commission for determination consists of the following:
 - *“Bord and pillar mining activities within the Kayuga Seam (as an alternative to the approved longwall mining activities in that seam),*
 - *An alternative coal clearance system for transporting ROM coal from the underground mine workings to the East Site; and*
 - *Extending the approval period under DA 231-7-2000 by 5 years (until 5 December 2027).”*
17. The Commission notes from the Proponent's comments in the RtS above that the changes proposed by the Application are in addition to the existing approval and will not only co-exist with the existing Project Approval until 2022 but are sought to be extended by 5 years until December 2027. The Commission notes that on pages 4, 5 and 6 of the Department’s AR a comparison table is provided for the Application which describes the existing approved operations and the Application (as amended and as now considered in this report). This table is reproduced in **Appendix 1**.
18. Figure 3 illustrates the general layout of the site and the indicative bord and pillar mining areas.

Figure 3: Proposed bord and pillar mining areas and new shaft location



Source: Department of Planning, Industry and Environment's Assessment Report

1.4 Stated need for the Application

19. The Department's AR stated that "to avoid previous operational difficulties experienced with longwall mining, AQC has lodged a modification application to extract up to a total of 10 million tonnes (Mt) of ROM coal from the Kayuga seam within the approved mining area using the bord and pillar mining method".
20. According to the Department's AR, "the Department understands that this method is being pursued to limit the potential subsidence and subsidence impacts and to avoid some of the geotechnical issues previously experienced during longwall mining".
21. The Department's AR stated that:

"to recommence longwall mining operations under the existing consent, AQC would need to reinstate the longwall mining equipment, repair the Hunter Tunnel and reinstate the conveyor system. This would require significant time and capital expenditure. AQC is proposing to use the bord and pillar mining method and alternate coal clearance system to facilitate earlier and more economically feasible recommencement of mining

with reduced environmental impacts compared to the approved longwall operation”.

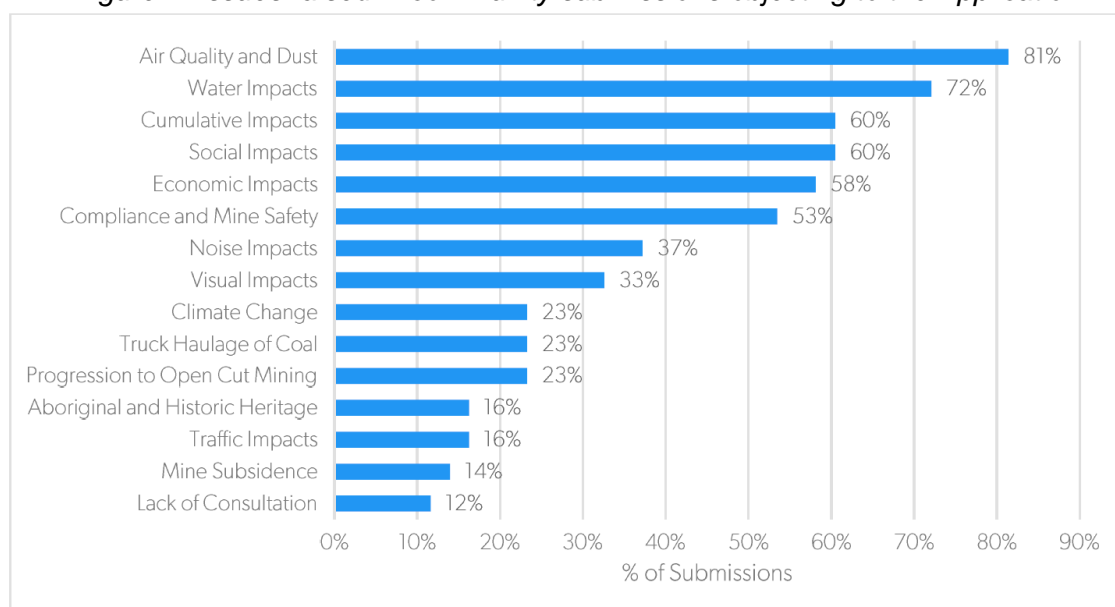
22. According to the Department’s AR, *“to enable the proposed mining activities to be undertaken, AQC is proposing to extend the life of mining operations by a further 5 years, until December 2027. AQC states that the proposed extension of the approval period is required to justify the capital expenditure involved in recommissioning the mine”.*

2. THE DEPARTMENT’S CONSIDERATION OF THE APPLICATION

2.1 Key steps in Department’s consideration of the Application

23. The Department received the Application on 27 February 2018 and it was placed on public exhibition from 28 June 2018 until 25 July 2018.
24. According to the Department’s AR, advice was received from 10 government agencies. Muswellbrook Shire Council (**MSC**) provided comment and UHSC objected to the Application.
25. In relation to public submissions, the Department’s AR stated that they *“received 43 submissions from the public and special interest groups (SIGs), comprising:*
 - *1 submission in support of the modification;*
 - *1 submission providing comment; and*
 - *41 submissions objecting to the modification.”*
26. A breakdown of the key issues raised, and the number of submissions received during exhibition are provided in Figure 4 below.

Figure 4: Issues raised in community submissions objecting to the Application



Source: Department of Planning, Industry and Environment’s Assessment Report

27. The Department’s AR stated that the Proponent *“submitted its Response to Submissions (RtS) on 31 August 2018. The RtS responded to issues raised by both the public and government agencies, with some changes to the proposal to reduce air quality and noise*

impacts.”

28. The Department received further comments from 8 government agencies in response to the RtS. In response to the concerns raised in those further comments, the Proponent provided additional information on 12 October 2018, 16 October 2018 and 13 November 2018.

2.2 The Department’s Assessment Report

29. The Department’s AR stated that *“the Department considers that the application is within the scope of section 75W and may be determined accordingly as the proposal would not change the dominant use of the site and the mining area, and would not significantly increase the scale, intensity or environment impacts of the approved project”*.
30. The Department’s AR stated that the *“key issues associated with the proposed modification are air quality, noise, social, economic, subsidence and water impacts”*.
31. The Department’s AR concluded that:

“the proposed bord and pillar mining method would reduce the mine’s subsidence and groundwater impacts compared to the presently approved longwall mining method”.

“...the proposed alternate coal clearance system and associated surface truck haulage would marginally increase air quality and noise impacts compared to the approved Hunter Tunnel coal clearance system. Nevertheless, the proposed modification would not result in any significant adverse impacts.”

“...the modification’s benefits would outweigh its costs and that the modification would improve the overall viability of the mine by enabling underground mining operations to recommence, thereby allowing its potential social and economic benefits to be realised”.

“...the impacts of the modification are acceptable and the proposal is approvable, subject to the proposed recommended conditions of consent”.

3. THE COMMISSION’S MEETINGS AND SITE VISIT

32. As part of its determination, the Commission met with the Department and Proponent and conducted an inspection of the Project Site.

3.1 Meeting with the Department

33. On 18 February 2019, the Department met with the Commission to discuss the Department’s AR. A copy of the meeting agenda was made available on the Commission’s website on 19 February 2019. A copy of the transcript was made available on the Commission’s website on 20 February 2019.

3.2 Meeting with the Proponent

34. On 18 February 2019, the Commission met with the Proponent. The key discussion points were in relation to mining methods, coal handling, operational issues, mine safety, impacts and benefits. A copy of the meeting agenda was made available on the Commission’s website on 19 February 2019. A copy of the transcript was made available on the Commission’s website on 20 February 2019.

3.3 Site Inspection

35. On 8 April 2019, the Commission conducted an inspection of the Project Site. The Proponent attended the site inspection and directed the Panel to specific locations and features within the Project site. The Commission also invited representatives from community groups to attend and observe at the site inspection. The following community groups were represented at the site inspection:
- Hunter Thoroughbred Breeders Association (**HTBA**); and
 - Hunter Communities Network (**HCN**).
36. The Proponent provided an overview of the Application and maps to assist with the inspection of the Project Site. The maps were made available on the Commission's website on 17 April 2019. A summary of questions asked by the Commission at the site visit and answers given by those present was made available on the Commission's website on 17 April 2019.

3.4 Meeting with Muswellbrook Shire Council

37. On 8 April 2019, the Commission met with MSC to discuss their views on the Application. A copy of the transcript of the meeting and supporting documentation was made available on the Commission's website on 17 April 2019.

3.5 Meeting with Upper Hunter Shire Council

38. On 8 April 2019, the Commission met with UHSC to discuss their views on the Application. A copy of the transcript of the meeting and supporting documentation was made available on the Commission's website on 17 April 2019. The Council clarified its general opposition to mining in the Upper Hunter LGA and stated that it objected to the Application.

3.6 Public Meeting

39. The Commission held a public meeting at the Upper Hunter Conservatorium of Music, Brook Street, Muswellbrook NSW 2333 on 9 April 2019. Forty-five speakers presented to the Commission and a copy of the transcript of the public meeting was made available on the Commission's website on 17 April 2019. All members of the public who registered were provided with the opportunity to speak. A copy of the information tendered at the public meeting was also made available on the Commission's website on 24 April 2019.
40. An opportunity to lodge written comments was afforded until seven days following the public meeting. The Commission received 1787 written comments, which were made available on the Commission's website.
41. In summary, the main issues of concern raised by the community were:
- cost benefit and viability of the Project;
 - site rehabilitation requirements;
 - air quality, cumulative impact and exceedances of health criteria;
 - climate change and greenhouse gas (**GHG**) emissions;
 - Proponent's intention to investigate open cut activities;
 - viability and financial capacity of the Proponent;
 - impacts on groundwater;
 - noise impacts;

- safety issues;
- impacts on the equine industry;
- inadequacy of the Social Impact Assessment (**SIA**);
- visual impact;
- heritage impact;
- lack of consultation;
- the public interest; and
- an approval that was outdated and need for an assessment against contemporary standards.

4. THE COMMISSION'S CONSIDERATION

4.1. Material considered by the Commission

42. In this determination, the Commission has carefully considered the following Project-specific material (**material**):

- previous modifications approved as set out in Table 1;
- the EA dated June 2018 and prepared by Hansen Bailey Environmental Consultants (Hansen Bailey) and all associated documents;
- public submissions on the Application during exhibition;
- government agency submissions on the Application from:
 - Office of Environment & Heritage (**OEH**) Heritage Division dated 4 July 2018;
 - NSW Dam Safety Committee dated 9 July 2018;
 - NSW Rural Fire Service (**RFS**) dated 16 July 2018;
 - NSW Roads & Maritime Services (**RMS**) dated 16 July 2018;
 - NSW Department of Primary Industries (**DPI**) Lands and Water Division dated 18 July 2018;
 - NSW Subsidence Advisory dated 18 July 2018;
 - DPE Division of Resources & Geoscience (**DRG**) dated 20 July 2018;
 - NSW Environment Protection Authority (**EPA**) dated 25 July 2018; and
 - OEH Regional Operations Division dated 16 August 2018;
- Council submissions during exhibition:
 - Muswellbrook Shire Council dated 24 July 2018; and
 - Upper Hunter Shire Council dated 31 July 2018;
- RtS report dated 31 August 2018 prepared by Hansen Bailey;
- government agency comments on the RtS:
 - DRG dated 13 September 2018;
 - Resource Regulator (**RR**) dated 17 September 2018;
 - OEH Heritage Division dated 18 September 2018;
 - EPA dated 21 September 2018;
 - RFS dated 21 September 2018;
 - OEH Regional Operations Division dated 3 October 2018; and
 - DPI L&W dated 30 October 2018;
- Muswellbrook Shire Council submission on the RtS dated 21 September 2018;
- Additional Information in response to comments on the RtS dated 12 October 2018, prepared by Hansen Bailey;
- Economic Impact Assessment (**EIA**) prepared by Gillespie Economics, dated 16 October 2018;
- Response to Department dated 26 October 2018 prepared by Hansen Bailey;
- Response to OEH, dated 13 November 2018 prepared by Hansen Bailey;
- the Department's AR dated 23 January 2019;
- information provided by the Proponent at the site inspection on 8 April 2019;

- information provided by UHSC in the meeting with the Commission on 8 April 2019;
- information provided by MSC in the meeting with the Commission on 8 April 2019 and additional information provided on 10 April 2019;
- all oral comments made and all presentations and other information given to the commission at the public meeting held on 9 April 2019 and all written comments received by the Commission up until 16 April 2019;
- comments from the Friends of the Upper Hunter (**FOTUH**) dated 18 April 2019;
- comments from the Proponent dated 23 April 2019;
- comments from the HTBA and Godolphin dated 26 April 2019;
- additional comments from the FOTUH dated 6 May 2019;
- additional comments from the Proponent dated 22 May 2019;
- Department's response to the Commission (**Response to the Commission**) dated 4 June 2019;
- additional comments from the HTBA on the Department's Response to the Commission dated 13 June 2019;
- additional comments from UHSC on the Department's Response to the Commission, dated 20 June 2019; and
- matters for consideration specified by the EP&A Act, including s75W.

4.2. Additional Considerations

43. The Commission has taken into consideration the following environmental planning instruments (EPI) which apply to the Site:
 - *State Environmental Planning Policy (SEPP) (State and Regional Development) 2011;*
 - *SEPP (Mining Petroleum Production and Extractive Industries) 2007 (Mining SEPP),*
 - *SEPP No. 55 – Remediation of Land (SEPP 55);*
 - *Muswellbrook Local Environment Plan 2009 (Muswellbrook LEP);*
 - *Upper Hunter Local Environment Plan 2013 (Upper Hunter LEP); and*
 - *Upper Hunter Regional Plan 2036.*
44. In determining this Application, the Commission has also considered:
 - *Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals 2015 (Department's Economic Guidelines)*
 - *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW 2016 (Approved Methods 2016);*
 - *Interim Construction Noise Guideline 2009 (ICNG);*
 - *Noise Policy for Industry 2017 (NPI);*
 - *Voluntary Land Acquisition and Mitigation Policy (VLAMP) ; and*
 - *Social Impact Assessment Guideline for State Significant Mining, Petroleum Production, and Extractive industry Developments (SIA Guideline).*

4.3. Permissibility

45. UHSC in their comments to the Commission raised concerns regarding the compatibility of the Project with the underlying aims and objectives of the Upper Hunter LEP. UHSC also raised concern regarding the compatibility of the Project with respect to the southern fringes of the nearby surrounding rural-residential properties. UHSC also stated that "*the preferred land uses are residential, tourism and low intensity agricultural activities*".

46. The Proponent in its EIS stated that:

“The proposed underground mining activities will be undertaken within zones RU1 and E3 under the Muswellbrook LEP and zone RU4 under the Upper Hunter LEP. Development for the purposes of agriculture is permissible in all of these zones. Therefore, pursuant to clause 7(1)(b) of the Mining SEPP, mining may also be carried out on this land”.

47. The Department’s AR stated that:

“The proposed bord and pillar mining would occur within AQC’s existing approved mining area, therefore there is no need to reconsider permissibility for this activity. The proposed new shaft site is located on Lots 1 and 2 DP 835733, owned by AQC, and zoned RU1 ‘primary production’. Development for the purposes of agriculture is permissible in RU1 and pursuant to clause 7(1)(b) of the State Environmental Planning Policy (SEPP) (Mining Petroleum Production and Extractive Industries) 2007 (Mining SEPP), mining may also be carried out on this land”.

48. The Commission accepts the conclusions of the Proponent and Department set out in paragraphs 46 and 47 above. However, the Commission acknowledges the concerns raised by UHSC summarised in paragraph 45 and notes that there has been substantial change in the surrounding area via growth in residential use, tourism and agriculture in particular the equine industry, since mining activities were approved at Dartbrook. The Commission finds that there are potential incompatibilities between continued mining operations and surrounding land uses as a result of cumulative air quality, noise and socio-economic impacts.

4.4. Economics

Public comments

49. The Commission heard concerns from speakers at the public meeting and received written comments regarding the economic benefits of the Project.
50. Members of the public raised concerns regarding coal quality issues and impact on revenue, low head count, inaccurate coal price assumptions, profitability and the economic viability of the Project.
51. The Commission received comments from the public in support of the Project based on the substantial economic benefits to local stakeholders. Comments considered that the recommencement of mining at Dartbrook would provide direct and indirect local jobs and will support local suppliers through the initial construction phase and operational phases.
52. HTBA in their comments to the Commission stated that *“this project as described in the EA has major risks in revenue assumptions due to coal quality, in production rate assumptions, in operating costs and in capital assumptions. As a stand-alone project, profitability looks to be unlikely and the product coal quality assumption is a fatal flaw”*. HTBA also submitted that while the economic methods used in the economic analysis align with the Department’s Economic Guidelines, several critical issues have been identified with the cost and benefit assumptions that underpin the analysis, which systematically bias the results in favour of the Project.

53. FOTUH in their comments to the Commission stated that they “*acknowledge the economic benefits that mining delivers but believe we have passed the tipping point in terms of the number of mines this area can safely sustain*”. FOTUH raised concerns regarding the need for the Dartbrook mine and questioned whether the Project will deliver any significant economic benefit. FOTUH also submitted that the disbenefits and the associated social impacts have not been properly accounted for in the economic analysis and assessment.

Council comments

54. During exhibition, UHSC made a submission to the Department raising concerns that the “*current proposal to modify the method of mining is unlikely to be economically viable given the low volumes of coal to be produced*”.
55. UHSC in their comments to the Commission stated that they “*believe the economic report is flawed*” and that “*Dartbrook overstates the benefits and understates the disbenefits, substantially*”. UHSC stated that the assumed price for Dartbrook’s coal is a conservative assumption and that there is uncertainty regarding international demand for thermal coal which will impact demand and profitability.
56. UHSC in their additional comments to the Commission dated 20 June 2019, submitted that the Department’s quoted figures of AUD 90 per tonne were already inaccurate and out of date. UHSC stated that “*as of today the Newcastle 5500 NAR export thermal coal price is US\$52.00 or AUD\$75.42/tonne at today’s exchange rate*”. UHSC questioned whether the 20.6% difference in coal price assumptions would have a material effect on the Cost Benefit Analysis (CBA).

Proponent’s consideration

57. The Proponent’s EA included an EIA prepared by Gillespie Economics in accordance with the Department’s Economic Guidelines to predict the economic benefits that may be generated by the Application. A CBA and Local Effects Analysis (LEA) was undertaken as part of the EA.
58. The Proponent’s EA stated that the Application will provide direct benefits by way of local hires and non-labour expenditure to the local economy comprising of Singleton, Muswellbrook and Upper Hunter Shire LGAs. According to the EA the LEA concluded that the Application will provide 26 jobs during the construction phase and 88 to 99 jobs during the operational phase of the mine.
59. In relation to coal price and quality assumptions, the Proponent in their comments to the Commission stated that “*the Modification will produce a coal product ranging from 15-24% ash and averaging 5,500 kcal/kg energy content*”. The coal price per tonne presented by the Proponent in the EA equates to AUD 95 per tonne.

The Proponent further stated that:

“in the calendar year 2018, the AUD achieved price for the Newcastle 6,000 kcal/kg benchmark specification ranged from around AUD 115 to 180 per tonne, averaging AUD 145 per tonne. The Modification contemplates producing a 5,500 kcal/kg energy content that has historically traded at a discount of 15-30% of the Newcastle 6,000 kcal/kg

benchmark. Whilst this produces a large implied range of prices for coal produced for the Modification, it can be seen that the assumed price of AUD 95 is not an unreasonable view given recent and historical observed pricing”.

60. In relation to site rehabilitation costs the Proponent stated the following in their comments to the Commission:

“AQC notes that under the Mine Operations Plan (reviewed and accepted by the NSW Government for the period 1 January 2018 through to 31 December 2018), there is an agreed rehabilitation cost assessment of \$8.9 million which includes provision for the removal of infrastructure and rehabilitation of the entire mine site. In accordance with the conditions of the mining authorities, AQC has deposited this cash amount with the NSW Government.”

61. In relation to GHG emissions, the Proponent’s EA dated June 2018 stated that *“over the 10 year duration of the Modification, the total GHG emissions are estimated at 3.69 Mt CO₂-e”*. The EA concluded that *“the present value of the cost of greenhouse gas emissions from the Modification to Australia and NSW is estimated at between \$0.1M and \$0.4M, and less than \$0.1M (present value), respectively”*. The Proponent explained in the RtS that *“the global costs of GHG emissions were apportioned to Australia and NSW in proportion to their share of the global market”*. Under the CBA, these emissions were estimated to cost less than \$0.1 million NPC to NSW.
62. In relation to costs associated with the reopening and operation of the coal washery, the Proponent stated in their comments to the Commission that a Feasibility Study was undertaken in 2017 which considered the reopening of the washery, albeit adopting a different mine plan and overall approach. The Proponent stated that *“the study estimated an operating cost of less than \$6 per tonne with full reinstatement of facilities estimated to be a capital cost of approximately \$10 million”*.
63. The Proponent’s EA stated that *“an attempt has been made to qualitatively consider and where possible quantify the main environmental, cultural and social impacts. From Section 2.4 it is evident that the main potential impacts of the Modification are internalised into the production costs of the Modification through mitigation measures, ownership of land and water allocations. Other costs not already included in the production costs of the Modification are associated with opportunity cost of Water Access Licences WALs (sic), greenhouse gas costs, minor cumulative air quality exceedances and visual impacts, although from Table 2.4 it is evident that these impacts to Australia are small or immaterial, considerably less than the estimated net production benefits of the Modification to Australia.*
64. The Proponent’s EA concluded that *“the quantified environmental costs are significantly less than the predicted net social benefits to Australia and NSW. Therefore, the Modification is justifiable from an economic efficiency perspective”*. The Proponent’s EA concluded that overall the Application is estimated to have an overall net social benefit to NSW of \$130 million and hence is desirable from a NSW economic efficiency perspective.

Department’s assessment

65. The Department’s AR stated that *“the proposed modification would generate an overall benefit to NSW of \$130 million net present value (NPV), assuming a discount rate of*

7%, including \$38 million NPV in royalties over the proposed 10-year life of the Modification". The Department's AR also noted that *"the DRG separately verified that the predicted royalty estimates were reasonable based on the proposed production rate, bypass coal quality, thermal coal price assumptions and allowable royalty deductions"*.

66. In relation to coal price and quality assumptions, the Department in their response to the Commission stated that the Proponent relied on a coal price assumption of *"AUD\$ \$95/tonne based on a USD/AUD exchange rate of 0.77 and a coal product ranging from 15-24% ash and 5,500 kcal/kg energy"*. The Department also stated that in reviewing the Proponent's coal royalty estimates, *"the Division of Resources and Geoscience (DRG) considered an average coal price of AUD \$90/tonne would be reasonable"*. The Department stated that while the Proponent's assumed price is somewhat higher than the DRG's assumed price, the Department noted that *"this AUD \$5 difference (5.6%) would not materially affect the CBA outcomes"*.
67. In relation to GHG emissions, the Department's AR stated that the Proponent estimates that *"over the 10-year life of the modification it would emit approximately 3.6.9 Mt CO₂-e from electricity use and fuel consumption (ie Scope 1 and 2 emissions). Under the CBA, these emissions are estimated to cost less than \$0.1 million NPV to NSW."*
68. The Department in their response to the Commission stated that *"in accordance with the NSW Government's Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals and supporting technical notes, Scope 3 emissions have not been considered in the CBA, as they would be accounted for by the respective consumer countries"*.
69. In relation to costs associated with the reopening and operation of the coal washery, the Department stated in their response to the Commission that the Proponent's estimate of \$10 million to reopen the coal washery *"has not been considered in the CBA as it does not fall within the scope of the modification. In the end this cost would accrue to AQC and not impact on the CBA for NSW"*.
70. The Department concluded that the Proponent's *"CBA and LEA demonstrate that the modification would provide net benefits at both State and local scale. The Department considers that the most affected communities of Kayuga and Aberdeen would be compensated by way of direct mitigation/acquisition by AQC or indirect community enhancement funding through the VPAs."*

Commission's consideration

71. The Commission acknowledges that there was public support for the Project due to the provision of local jobs as summarised in paragraph 51 above. The Commission notes the analysis and conclusions of the Proponent in paragraph 58 in that the Application would provide direct benefits to the local economy due to the provision of approximately 26 jobs during construction and a minimum of 88 jobs during the operations phase of the mine.
72. The Commission notes the Department's statement summarised in paragraph 69 above in that the reopening and operation of the coal washery does not fall within the scope of this Application and therefore associated costs have not been included in the CBA. However, the Commission notes that the Proponent has proposed to extend the life of the Project Approval by 5 years, as set out in paragraph 18 and Appendix 1. The

Commission finds that the costs associated with the reopening and operation of the washery have not been properly accounted for in the economic analysis and assessment.

73. The Commission acknowledges UHSC's and the public's concerns summarised in paragraphs 50, 52, 53, 55 and 56 that questioned the range of assumptions in relation to the profitability and economic benefit of the Project. The Commission acknowledges the public's concerns regarding the costing of externalities such as environmental, cultural and social impacts. The evidence provided by UHSC and the public indicated a less optimistic set of assumptions that would diminish the benefits and increase the costs. The Commission notes the Department's analysis in paragraph 66 in that the Proponent's coal price and quality assumptions are reasonable even though the Proponent's assumed price is somewhat higher than the DRG's assumed price. However, the Commission is unconvinced of the extent of the economic benefits due to the uncertainties above. The Commission is concerned at the lack of rigour in the Proponent's assessment of the social and environmental costs of the Project and is not convinced that these have been adequately assessed and quantified for all three elements of the Application described in paragraph 16. As such, the Commission is unconvinced that the Application to extend DA 231-7-2000 duration by 5 years is in the public interest.

4.5. Air Quality

Public comments

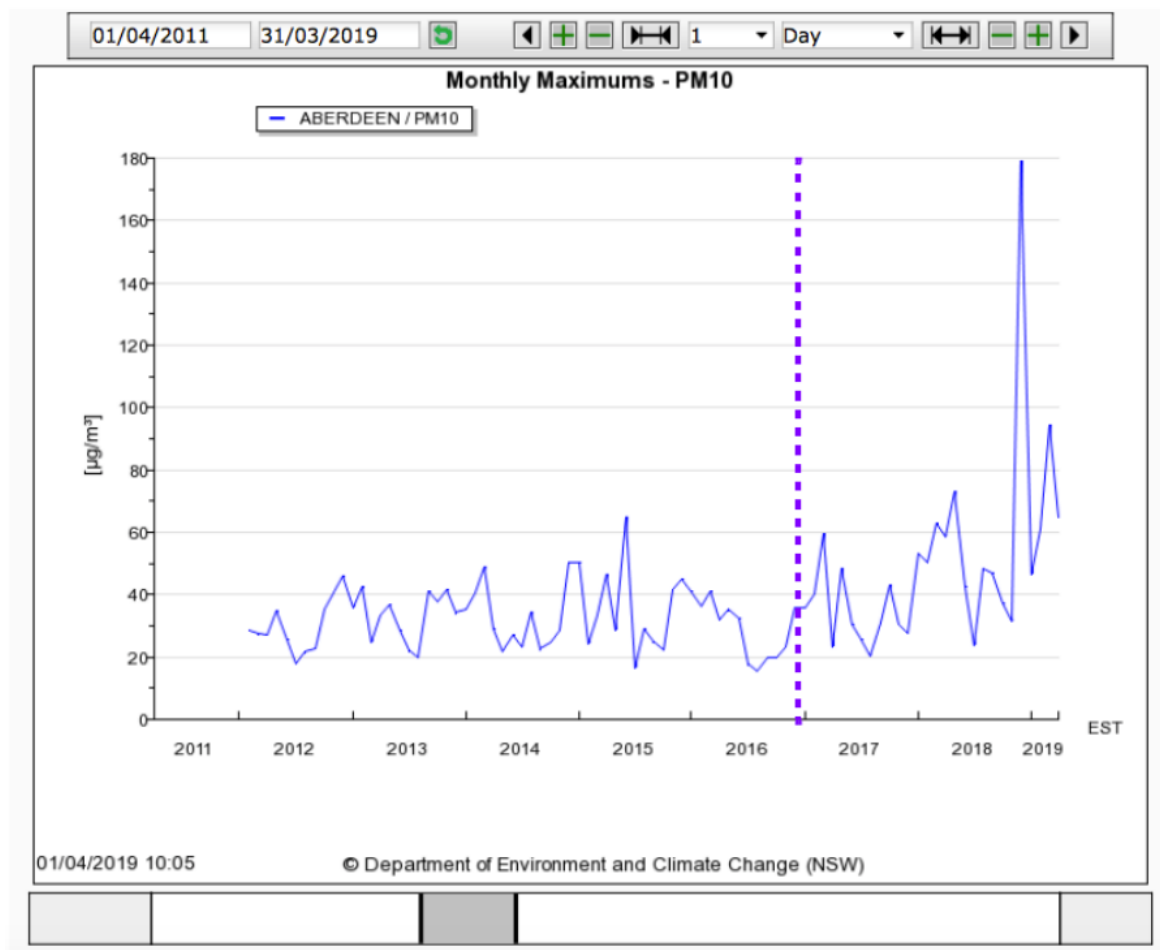
74. The Commission heard concerns from speakers at the public meeting and received written comments regarding the impact of the Application on air quality.
75. Members of the public raised concerns regarding the generation of dust, impact of emissions, exceedances of health criteria, relationship between particle pollution and health, cumulative air quality impact of mining operations in the region and impact on tourism and the equine industry.
76. At the public meetings, Doctors for the Environment (**DFTE**) highlighted health risks to people in the local region. DFTE refuted the argument that any air pollution is minor or insignificant and stated that all sources of air pollution must be mitigated. DFTE stated that monitoring stations are already reporting particles above the recommended annual average and that current monitoring standards and compliance conditions are inadequate to protect the community against the health effects of air pollution.
77. The HTBA, in their comments to the Commission, raised concerns regarding the cumulative air quality impacts on the equine industry in the region. The HTBA raised concerns regarding the accuracy of the air quality assessment given that they were based on 2014 data with a contingency for the recently commenced Mt Pleasant open cut coal mine. HTBA stated that *'the predictions don't seem to match current data'* and *'fails to take into account that existing approved mines were operating under capacity in 2014'*. HTBA also noted that *'air quality and noise impacts of washery operation have not been included into the MOD7 Environmental Assessment'*.
78. FOTUH in their comments to the Commission submitted that the airshed is overburdened and that the impact of air pollution on health and wellbeing was one of the greatest areas of concern for the local community. FOTUH considered that given

the existing high level of pollution in the airshed, the Application is not in the public interest.

Council & Agency comments

79. During exhibition, MSC made a submission to the Department raising concerns over the potential generation of dust from the unsealed section of the haul road, and handling of unwashed coal and coal transfer at the proposed shaft into the Hunter Tunnel. MSC asked that a *“revised consent require the coal to be kept wet at all stages of its handling on site including loading onto the trains”*. MSC also stated that *“the unsealed section of road should be sealed to manage dust (rather than ‘regular water carts’), to prevent sediment loss in wet weather, sediment being tracked onto the sealed sections of road and then making dust, and noise generation from pot holes”*. In relation to the proposed shaft shed MSC stated that it *“needs to be designed to contain the dust as far as possible, and external screen walls/mounds placed on the site to obscure dust spill from the shed from the New England Highway”*.
80. MSC raised concerns in their submission to the Department in relation to dust monitoring and stated that:
- “the 24 hour averaging period has the unintended consequence of obscuring issues of elevated dust levels at night as a result of surface temperature inversions. Council submits that the result of these inversions is to trap dust emitted from this and other mining developments in the Shire for sustained periods. This causes the level of dust in the air to increase substantially at night, which is in turn obscured by the lower levels of dust in the air during the day. Consequently, the average over a 24 hour period does not result in a technical exceedance.”*
81. MSC stated in its comments on the RtS that the Proponent has agreed to seal the entire length of the haul road and spray the coal at multiple points during the coal handling process to ensure that the coal is moist when loaded into trains. MSC also stated that the Proponent has agreed in the RtS to design the shed over the proposed shaft with rubber belting and water sprays to contain coal dust during transfer. MSC provided suggested wording to include in the conditions in order to ensure that the design of the shed enclosure will minimise dust spill.
82. UHSC made a submission to the Department during exhibition raising concerns regarding air quality impacts. Council stated that the unsealed section of road should be sealed to manage dust and prevent sediment loss. Council also stated that it is critical that dust control measures such as water sprays and screens are installed to minimise dust from the proposed shed.
83. UHSC in their comments to the Commission raised concerns regarding the number of exceedances and air quality alerts issued for Aberdeen since Mount Pleasant was approved in June 2018. Council stated that *“air quality in Aberdeen is already beyond the tipping point”* and that *“any further additions or unplanned exceedances to the already overloaded air-shed cannot be justified”*. UHSC provided a graph (see Figure 5) in order to illustrate the *“dramatic increase in PM10 emissions since construction began at Mount Pleasant, November 2016 (striped vertical line)”*.

Figure 5: UHSC Monthly Maximum PM10



Source: UHSC Presentation to the Commission

84. The EPA in their submission to the Department noted that the proposed overland coal haulage would account for the majority of the Project's dust emissions and requested that the Proponent further consider feasible and reasonable mitigation measures to reduce emissions, including reinstatement of the previous coal clearance system or sealing the remainder of the haul road.
85. Following the EPA's review of the RtS, in their further comments to the Department the EPA acknowledged the Proponent's commitment to seal the remainder of the haul road and recommended a condition requiring ROM coal to be kept sufficiently moist to prevent or minimise dust emissions.

Proponent's consideration

86. The Application was accompanied by an Air Quality Impact Assessment (**AQIA**), undertaken by ERM in accordance with the Approved Methods 2016. According to the AQIA, the potential impacts of the Application were assessed using the relevant EPA and VLAMP criteria, which apply to both incremental and cumulative impacts.
87. The Proponent's EA stated that the AQIA focused on particulate matter (Total Suspended Particulates (**TSP**), Particulate Matter <10 µm (**PM₁₀**), Particulate Matter

<2.5 μm (**PM_{2.5}**)) and deposited dust, as these are the key pollutants associated with mining development.

88. In response to the comments received from the Department, the Proponent provided clarification in the RtS in relation to predicted air quality impacts for all residences including those which have existing acquisition rights under other nearby mining consents/approvals. In the RtS the Proponent stated:

“For annual average TSP concentrations, there are no predicted exceedances of the EPA and Voluntary Land Acquisition and Mitigation Policy (VLAMP) criterion of 90 $\mu\text{g}/\text{m}^3$, either due to the Modification alone or on a cumulative basis.”

“For annual average PM₁₀ concentrations, there are no predicted exceedances of the EPA impact assessment criterion of 25 $\mu\text{g}/\text{m}^3$, or the VLAMP criterion of 30 $\mu\text{g}/\text{m}^3$ either due to the Modification alone or on a cumulative basis”.

“For 24-hour average PM₁₀ concentrations, there are no predicted exceedances of the EPA impact assessment criterion of 50 $\mu\text{g}/\text{m}^3$ due to the Modification alone. When considering cumulative impacts, six of the receptors within the Mt Pleasant Mine’s Zone of Affection (IDs 212, 228, 238, 242, 244 and 374) are predicted to experience one additional day where the criterion is exceeded.”

89. The Proponent also stated in the RtS that *“on a cumulative basis, the EPA impact assessment criterion for annual average PM_{2.5} (8 $\mu\text{g}/\text{m}^3$) is predicted to be exceeded at seven of the receptors within the Mt Pleasant Mine’s Zone of Affection (IDs 212, 228, 238, 242, 244, 374 and 391). It is noted that the assumed background PM_{2.5} concentration of 7.6 $\mu\text{g}/\text{m}^3$ is already close to the impact assessment criterion. The contribution from the Modification ranges from 0.4 to 1.2 $\mu\text{g}/\text{m}^3$.”*
90. The Proponent stated in the RtS that *“for 24-hour average PM_{2.5} concentrations, there are no predicted exceedances of the EPA impact assessment criterion of 25 $\mu\text{g}/\text{m}^3$, either due to the Modification alone or on a cumulative basis”.*
91. In relation to cumulative annual average PM_{2.5} criterion, the Proponent in the RtS stated that *“the air quality modelling predicted that four sensitive receptors may experience exceedances of the annual average PM_{2.5} criterion (8 $\mu\text{g}/\text{m}^3$) on a cumulative basis”.* According to the RtS, these receptors ID’s are 81A, 81B, 92 and 181.
92. In response to the Department’s comments on the RtS, the Proponent gave further consideration to the 2018 VLAMP mitigation and acquisition criteria for PM_{2.5} and stated: *“the actual cumulative PM_{2.5} concentrations at Receptor 181 and Property 76 would be within the criterion of 8 $\mu\text{g}/\text{m}^3$ and therefore further actions under the VLAMP should not be required”*
93. In response to concerns raised by UHSC and the public in relation to cumulative impacts and exceedances of air quality criteria, the Proponent in their further comments to the Commission stated:

“in the air shed in question, identified exceedances are most typically due to bushfire, significant state-wide dust storms in dry conditions and the wide-spread use of wood fire heaters in the winter months when temperature inversions are prevalent.”

“for all years from 2015 to 2018, all exceedances were attributed to state-wide dust storms or bushfires. When an analysis of the 2019 data is complete, it is highly likely that it will also determine that extraordinary events will be the cause of the potential exceedances. As such, this data does not represent “frequent and significant exceedances of air quality in the airshed” pertaining to anthropogenic land uses in the locality.”

94. In response to MSC’s concerns regarding air quality impact assessment averaging periods, the Proponent stated in the RtS that *“the potential impacts of the Modification have been assessed against the EPA impact assessment criteria, which are derived from many years of study and analysis of the impacts of PM emissions on human health. All the available evidence regarding health impacts is based on exposure periods of 24 hours or longer. For this reason, the EPA criteria are concerned with 24-hour averages, rather than one-hour averages”*.
95. In response to the EPA request for the Proponent to further consider the reinstatement of the previous coal clearance system, the Proponent clarified in the RtS that recommissioning the Hunter Tunnel and conveyor for bord and pillar mining methods was not economically feasible, given the smaller quantity of coal being extracted.
96. In response to the concerns raised from both regulatory authorities and the public, the Proponent committed in the RtS to sealing the gravel road in its entirety prior to commencement of coal haulage in order to minimise dust and achieve a better environmental outcome.
97. In response to the concerns raised by MSC and the public regarding potential dust impacts during the coal handling process, in the RtS the Proponent agreed to undertake further dust control measures during coal transportation. The Proponent stated that *“the coal to be transported from Dartbrook Mine will be sprayed at multiple points during the coal handling process to ensure that the coal is moist when loaded into trains”*.
98. In response to MSC’s concerns regarding dust management during coal transfer at the shaft facility, the Proponent confirmed in the RtS that the shed enclosure will assist in controlling dust emissions from the transfer of coal. The Proponent confirmed that water sprays will be installed above the two ‘doors’ of the shed to minimise dust escaping through these openings.
99. In response to the public’s concerns regarding the impact of the operation of the washery, the Proponent in the RtS confirmed that:
- “DA 231-7-2000 permits the use of the existing washery facility at the East Site. Although the washery is not required for the bord and pillar mining proposed by the Modification, the Modification does not relinquish the right to use the washery for other approved activities under DA 231-7-2000”*
100. The Proponent stated in their further comments to the Commission that that the recommended conditions have been *“contemporised such that air quality management and monitoring at the mine site meets all best practice NSW Government Policies and Guidelines. This includes a consideration of cumulative air quality monitoring and management.”*
101. The Proponent concluded in their further comments to the Commission that *“the*

recommencement of underground mining as proposed at Dartbrook will have an immaterial impact on the cumulative air quality at private receivers and will likely be immeasurable.”

102. In response to Department’s request for further information regarding the potential environmental impacts associated with the proposed 5 year extension to the approval period the Proponent responded that: *“The Modification differs from the approved operations in certain respects and these differences will affect the potential amenity impacts. The Modification proposes the extraction of up to 1.5 Mtpa of ROM coal via bord and pillar mining. In comparison, DA 231-7-2000 allows for up to 6 Mtpa of ROM coal to be extracted via longwall mining. Due to the lower production rate, the Modification will require less coal handling than the approved operations and is therefore expected to result in lower dust and noise emissions from the East Site.”*

Department’s assessment

103. The Department’s AR stated that *“the proposed modification has the potential to increase air quality impacts (due to the additional surface coal handling) and to prolong these impacts (due to the 5-year extension)”*. The Department stated that the Proponent’s EA included an AQIA which considered these impacts in accordance with the Approved Methods 2016.
104. The Department’s AR stated that the *“AQIA included predictions for particulate matter (TSP, PM₁₀ and PM_{2.5}) and deposited dust levels at nearby sensitive receivers, based on background data from 2014 when Bengalla, Mount Arthur Coal and Muswellbrook Coal were all operating at close to their maximum production rates”*. The AQIA also included predictions for Mount Pleasant, which was not in operation in 2014. These predictions were compared against the relevant criteria set out in the Approved Methods 2016 and the VLAMP.
105. In relation to annual average PM_{2.5} criterion, voluntary acquisition rights and existing rights afforded under the Mount Pleasant Consent (**Mount Pleasant Consent**), the Department’s AR stated that:
- “revised PM_{2.5} predictions in the RtS demonstrate that these controls would reduce emissions and that three receivers (81A, 81B and 92) would no longer trigger the cumulative annual average PM_{2.5} criterion. For the remaining nine receivers, the Department recommends that voluntary acquisition rights are afforded to 181 and 76 under the Dartbrook consent and that 212, 228, 238, 242, 244, 374 and 391 are also afforded acquisition rights in the consent but secondary to those already provided for in the Mount Pleasant consent.”*
106. In the Department’s AR, the Department noted that *“the EPA and members of the community raised concerns over the AQIA’s predicted air quality impacts and questioned if AQC had actually proposed to implement all reasonable and feasible dust controls”*. The Department stated that the Proponent committed to the following measures in the RtS:
- *“sealing the remaining 1.5km section of unsealed (gravel) haul road; and*
 - *using the additional water sprays on the coal stockpiles and all transfer (ie loading/unloading) points”*.
107. The Department’s AR recommended that the existing conditions required the Proponent

to comply with TSP and deposited dust criteria and to prepare a Dust Management Plan. The Department has recommended that these conditions are updated to include contemporary air quality criteria and operating conditions and a new requirement to prepare a comprehensive Air Quality and Greenhouse Gas Management Plan.

108. The Department's AR stated that *"the Department considers that AQC has proposed all reasonable and feasible avoidance and/or mitigation measures to minimise the modification's air quality impacts and that the residual impacts are acceptable, subject to complying with strict conditions"*. The Department's AR further stated that the EPA considered that the *"recommended conditions adequately addressed its previous concerns. With the addition of these revised and more stringent conditions, the Department considered that the air quality impacts of the modification could be appropriately managed and would not significantly change from those already approved."*
109. The Department in their Response to the Commission stated that comments from the public have raised concerns that the airshed near Muswellbrook and Aberdeen is already at 'capacity' and that as a result no further dust-generating development should be approved. The Department stated that *"the Department acknowledges this concern and notes that it has carefully considered the background air quality environment in its assessment of the modification. However, as this mine is already approved, the Department should only consider the incremental impact associated with the modification, rather than assessing it as if it were a new development"*.
110. The Department's Response to the Commission, stated that they remain of the view that the Department has *"carefully considered air quality impacts of the modification, including cumulative impacts, and that, subject to the recommended conditions, the impacts would be manageable and acceptable"*.

Commission's consideration

111. The Commission notes the Department's statement in paragraph 103 above that the Application has the potential to increase air quality impacts, due to the additional surface coal handling, and to prolong these impacts due to the 5-year extension.
112. The Commission recognises the concerns raised by the public, EPA, UHSC and MSC regarding the generation of dust and impact on air quality resulting from the coal handling process and use of the unsealed section of road as summarised in paragraphs 75, 79, 82 and 84. The Commission notes that the Proponent has agreed to seal the remainder of the haul road, implement dust control measures during coal transportation and amend the design of the shed enclosure to assist in controlling dust emissions as summarised in paragraphs 96, 97 and 98. The Commission finds that these measures will assist in mitigating impacts associated with the generation of dust and has therefore imposed conditions of consent to ensure that these measures are implemented.
113. The Commission recognises the concerns raised by the HTBA in paragraph 77 that the air quality impacts of the coal washery have not been considered. The Commission notes the Department's statement summarised in paragraph 69 above that the reopening and operation of the coal washery does not fall within the scope of this Application and therefore associated costs have not been included in the CBA. However, the Commission finds that the Proponent has proposed to extend the life of the Project Approval by 5 years, as stated in paragraph 18 and Appendix 1. The Commission finds

that the impacts associated with the reopening and operation of the washery have been omitted from the air quality modelling for the Application. The Commission has therefore imposed a condition that the Proponent cannot use the washery for the purpose of washing ROM coal extracted via bord and pillar methods.

114. The Commission acknowledges the EPA's comments in relation to the mitigation of dust impacts through the reinstatement of the Hunter Tunnel coal clearance system as summarised in paragraph 84. The Commission accepts the Proponent's conclusion and response to the EPA summarised in paragraph 95 above, that the recommissioning of the Hunter Tunnel and conveyor is not economically feasible due to the smaller quantity of coal being extracted from bord and pillar mining methods.
115. The Commission acknowledges the concerns raised by the public summarised in paragraphs 74 and 75, DFTE in paragraph 76, HTBA in paragraph 77, FOTUH in paragraph 78 and by UHSC in paragraph 83. The Commission recognises that the EPA impact assessment criterion for annual average PM_{2.5} (8 µg/m³) is predicted to be exceeded at nine receptors as stated in paragraph 105. The Commission agrees with the Department's recommendations that voluntary acquisition rights be afforded to receptors 181 and 76 under the Project and that receptors 212, 228, 238, 242, 244, 374 and 391 are also afforded acquisition rights in the consent but secondary to those already provided for in the Mount Pleasant Consent.
116. The Commission accepts the view of the Department that despite public concerns that the airshed near Muswellbrook and Aberdeen is already at capacity and that as the mine is already approved, the Application must be assessed on the incremental impacts, rather than as a new development as stated in paragraph 109. However, the Commission remains concerned by public submissions regarding the cumulative impacts of air pollution and air quality exceedances in the airshed. In this regard the Commission notes that the air assessment does not consider the air quality impacts of the existing approval for long wall mining being fully operational, in addition to the proposed modification, in the context of changes in background air quality since the original approval was granted. The Commission is not satisfied that the impacts on air quality resulting from a 5 year extension of DA 231-7-2000 mining operations have been appropriately considered or assessed.

4.6. Greenhouse Gas Emissions

Public comments

117. The Commission heard concerns from speakers at the public meeting and received written comments regarding GHG emissions associated with the Application.
118. Members of the public raised concerns regarding the lack of adequate consideration of GHG emissions in the Proponent's EA and the need for decreased emissions. Impact of CO₂ emissions on human health was also raised as a key concern.
119. Member of the public in their comments to the Commission raised concerns regarding the environmental impacts of GHG emissions and how they were under-estimated in the Proponent's analysis. Members of the public also noted that Scope 3 emissions of the Application were not included in the assessment.

Council comments

120. In their comments to the Commission, UHSC raised concern regarding the lack of consideration given to GHG emissions UHSC stated “*not only does the EA not include any assessment of GHG it does not include any proposals to minimise, mitigate or offset those emissions*”. UHSC also noted that GHG emissions have been assessed against ‘approved’ rather than ‘care and maintenance’ and that the original approval was granted in 1991, before the “*UN Framework Convention on Climate Change (1992), before the Kyoto Protocol (1997) and well before the Paris Agreement (2015)*”.
121. UHSC in their additional comments to the Commission raised their concern about the proponent’s late submission of a Scope 3 Emissions report. The UHSC stated that this meant that it “*was not placed on Public Exhibition together with the main body of the EIS and thus effectively avoided the associated scrutiny and examination the required exhibition would have allowed*” depriving Council and other stakeholders of an opportunity to comment.
122. The UHSC further stated in their additional comments to the Commission that the Scope 3 emissions report provided by the Proponent is “*fundamentally flawed as it is based on the premise that Dartbrook’s product coal will be burnt 50% each in South Korea and Japan. Neither country typically imports 5500 NAR coal*”. UHSC also contends that the absence of a Scope 3 Emissions Report in the EIS is a breach of the assessment process.

Proponent’s consideration

123. The Proponent CBA stated that “*Scope 1 and 2 greenhouse gas (GHG) emissions may occur through fugitive emissions, electricity use and fuel combustion*”. The EA concluded that “*over the 10 year duration of the Modification, the total GHG emissions are estimated to be slightly less than 3.69 Mt CO₂-e*”. Scope 3 emissions were not mentioned in the EA, and GHG emissions were not considered in the AQIA.
124. In the Proponent’s comments to the Commission dated 23 April 2019, the Proponent provided an assessment of the potential Scope 3 GHG emissions associated with the Application. According to the analysis, Scope 3 emissions attributable to the proposed bord and pillar mining method are 5.01 Mt CO₂-e per year and result in total of 40.1 Mt CO₂-e Scope 3 emissions while if longwall mining was recommenced for an extended 5-year period, Scope 3 emissions would be approximately 126.3Mt.

Department’s assessment

125. The Department’s AR’s agreed with the Proponent’s estimates in relation to Scope 1 and 2 emissions as stated in paragraph 123. The Department in their Response to the Commission accepted the Proponent’s estimate of 40.1 Mt CO₂-e based on undertaking bord and pillar mining for the remainder of the mine life (including the 5-year extension) and that if the Proponent instead reinstated the approved longwall mining, these emissions would be in the order of 126.3 Mt CO₂-e. The Department’s AR stated that “*the Department recommends that AQC continue to investigate and implement measures to minimise greenhouse gas emissions, such as improving energy efficiency and/or reducing fuel consumption*”. The Department’s AR also stated that the Proponent would be required to document the above measures in a new Air Quality and Greenhouse Gas Management Plan and report on the effectiveness of these measures in its Annual Review.

126. In relation to Scope 3 emissions, the Department stated in the response to the Commission that in accordance with the Department's Economic Guidelines and supporting technical notes, *"Scope 3 emissions have not been considered in the CBA, as they would be accounted for by the respective consumer countries"*.
127. In the Department's response to Commission, the Department stated that *"the Department remains of the view that the proposed bord and pillar mining would reduce greenhouse gas emissions compared to the approved longwall mining because less coal would be extracted and this coal is already approved for extraction"*.

Commission's consideration

128. The Commission notes the calculations, by the Proponent and Department as set out in paragraphs 123, 124 and 125, in relation to Scope 1 and Scope 2 emissions. The Commission notes that the Proponent did not discuss GHG emissions in its AQIA and that Scope 1 and 2 emissions are only briefly mentioned in the CBA in order to quantify their cost. The Commission acknowledges the concerns of the public and UHSC relating to the treatment of GHG emissions as set out in paragraphs 121 and 122 above.
129. The Commission notes that the decision of the Land and Environment Court *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7 (**Rocky Hill LEC Proceedings**) has emphasised that a consent authority may be required to consider the impacts of a proposed development on climate change (including by reason of downstream emissions) for a number of reasons including the public interest, which includes the principles of ESD. The decision confirmed that indirect, downstream GHG emissions are a relevant consideration to take into account in determining applications for activities involving fossil fuel extraction. The decision concluded that the consideration of impacts on the environment and the public interest justify considering not only Scope 1 and Scope 2 emissions, but also Scope 3 emissions.
130. The Commission notes that the Proponent first submitted information on Scope 3 emissions on 23 April 2019, after the Public Meeting had been held. The Commission finds that the late submission of information on Scope 3 emissions deprived the public and stakeholders of an opportunity to comment on this material at an earlier stage in the approval process.
131. The Commission finds that the Proponent and Department have not appropriately considered or assessed the impact of emissions from the Project (see paragraphs 124 and 125). The Commission is not satisfied with the information provided up to this point regarding GHG emission related impacts and the appropriateness of the methodology for estimating the social and economic costs of the projected emissions. The Commission also finds that there has not been any proposal to minimise, mitigate or offset these impacts and has therefore imposed a condition requiring the Proponent to implement all reasonable and feasible measures to minimise the release of GHG emissions from the Project Site.
132. The Commission finds that in considering GHG emissions the Application relies heavily on the existing Project Approval from 1991 that was determined within the regulatory framework that existed at that time and finds that the treatment of GHG emissions in the proposed Modification is out of step with contemporary international and domestic policy, the current regulatory environment for GHG emissions and community

expectations

133. The Commission acknowledges the views of the Department outlined in paragraphs 125 and 127 above that the proposed bord and pillar mining method on its own would result in a reduction of GHG emissions in comparison to the approved longwall mining method, as less coal will be extracted than what is currently approved. However, since this Application is seeking a 5 year extension to the existing *DA 231-7-2000* which includes longwall mining, the Commission finds that the appropriate base case for considering such an extension would be the potential GHG emissions from the Application that might actually be realised if both long wall and bord and pillar extraction proceeded over this extended period. As the Commission noted in paragraphs 128 and 130 above, these aspects were not adequately addressed by the Proponent in its EA and information on Scope 3 emissions was received after the public meeting had been held which deprived the public of an opportunity to comment at an early stage of the process.
134. The Commission finds the assessment and treatment of the socio-economic impact of the estimated GHG emissions from the modification does not provide an adequate input for the Project's overall cost-benefit analysis for mining operations up to 2027.

4.7. Noise Impacts

Public comments

135. The Commission heard concerns from speakers at the public meeting and received written comments regarding noise impacts and exceedances of noise criteria. Members of the public raised concerns regarding the increased noise levels resulting from additional B-double truck and train movements. Concerns were also raised regarding noise impacts from the coal washery that had not been included in the modelling or assessment.
136. HTBA in their comments to the Commission raised their concern regarding the impact of increased noise resulting from the Application. HTBA stated that *"the noise impact report demonstrates that the project noise limits will be exceeded"*. HTBA also noted that the noise impacts of the washery have not been included in the assessment of the Application.
137. FOTUH in their comment to the Commission raised their concern regarding the noise impacts resulting from B-Double truck movements along the haul road and the arrival, shunting and loading of trains within proximity to Aberdeen. FOTUH raised a concern regarding the impacts of noise on quality of life for the area.

Council comments

138. MSC in their submission to the Department stated that the unsealed section of road should be sealed to prevent noise generation from pot holes and truck movements. MSC noted in their comments on the RtS that the Proponent agreed to sealing the entire length of the haul road.
139. UHSC in their submission to the Department stated that *"the noise assessment indicated that the modification would result in a minor exceedance of the night noise limit at approximately five of the southernmost Aberdeen residences west of the New England Highway"*. UHSC noted that whilst this exceedance is considered to be minor and does

not trigger any acquisition or mitigation requirements under VLAMP, UHSC recommend that additional noise monitoring be undertaken at the affected residences once mining operations commenced to confirm that the actual noise emissions are not exceeding the predicted noise levels.

Proponent's consideration

140. The Proponent undertook an Acoustic Impact Assessment (**AIA**) prepared by Bridges Acoustic which considered the potential construction and operational noise impacts, in accordance with the ICNG and NPI.

141. The Proponent's AIA concluded that:

"this assessment indicates the Modification would result in no significant noise impacts at any privately owned receptor. The Modification is predicted to meet current DA 231-7-2000 noise limits at all receptors with the exception of a minor 1 dBA exceedance of the night noise limit at approximately five of the southernmost Aberdeen residences west of the New England Highway. As the VLAMP suggests a noise level 1 dBA over the limit would not be discernible to an average listener and the exceedance is predicted to occur occasionally rather than regularly, predicted noise levels are considered acceptable and no further mitigation or management is recommended."

142. The Proponent in the EA committed to preparing a Noise Management Plan in consultation with the relevant regulatory authorities. The Proponent stated that several mitigation measures will be implemented to reduce and manage operational noise in relation to haul truck movement and coal transfer.

Department's assessment

143. The Department's AR stated that *"the proposed modification has the potential to increase and prolong noise impacts"*.

144. In relation to construction noise, the Department's AR stated that the proposed roadwork noise level would exceed the west side's ICNG's 'noise affected level' at 6 receptors near Kayuga but that *"temporary construction noise is acceptable particularly given the long-term benefit provided by sealing the haul road, which would reduce both noise and dust emissions"*. The Department also noted that the Proponent would apply reasonable and feasible mitigation measures in accordance with the ICNG.

145. In relation to operational noise, the Department's AR noted that the NIA predictions demonstrate that the modified development could comply with its existing criteria, with the exception of 5 receivers in Aberdeen which could experience a 1 dB(A) exceedance above the night-time criterion. The AR stated that *"the Department accepts that a 1 dB(A) increase would be indiscernible to the average person and therefore negligible in accordance with the VLAMP"*.

146. The EPA's comments to the Department on the RtS recommended revised operational noise criteria which included increasing the night-time criterion for Aberdeen to 41 dB(A) to ensure that noise generated at specific premises do not exceed specific noise limits. The Department's AR stated that they accepted the revised criteria and recommended conditions accordingly.

147. The Department concluded that *"the Proponent has proposed reasonable and feasible*

avoidance and/or mitigation measures to minimise the noise impacts of the modification and that the residual noise impacts are acceptable, subject to complying with strict conditions”.

148. The Department recommended that noise conditions be updated to include contemporary operating conditions and to require a comprehensive Noise Management Plan. This Plan would require the Proponent to *“implement best practice management measures to minimise the noise impacts of the development and to undertake real-time and supplementary attended noise monitoring to guide day-to-day operations and to evaluate noise performance.”*

Commission’s consideration

149. The Commission acknowledges that the Modification has the potential to increase and prolong noise impacts as stated by the Department in paragraph 143.
150. The Commission acknowledges the concerns raised by the public and HTBA in paragraphs 135 and 136 in that the noise impacts from the coal washery have been omitted from the air quality modelling for the Application. The Commission finds that the impacts associated with the reopening and operation of the washery and reinstatement of the Hunter Tunnel have not been considered in the noise assessment.
151. The Commission acknowledges the concerns raised by the public, UHSC and MSC in paragraphs 135, 136, 137, 138 and 139. However, the Commission accepts the analysis of the Proponent in paragraph 141 and agrees with the Department’s recommendations summarised in paragraph 145. The Commission notes the Department’s conclusion summarised in paragraph 147 that the Proponent has proposed reasonable and feasible mitigation measures to minimise the noise impacts resulting from the Application and that the residual noise impacts are acceptable subject to the Proponent complying with strict conditions.
152. The Commission accepts the revised operational noise criteria and conditions recommended by the EPA and Department in paragraph 146, to ensure that noise generated by the Project as defined in the Application does not exceed these noise limits. However, the Commission finds that the Proponent’s Application has been largely assessed against the bord and pillar method and the proposed coal clearance system and that the determination should exclude the handling of coal extracted from bord and pillar operations from operation of the coal washery. Additionally, the cumulative noise impacts of the full operations provided for in *DA 231-7-2000* to support the 5 year extension have not been considered.

4.8. Mining Operations & Subsidence

Public comments

153. The Commission heard concerns from speakers at the public meeting and received written comments regarding the impacts of subsidence and the impacts resulting from the extension of mining operations for an additional 5 years. Concern was also raised regarding the impact on the equine industry and agricultural land, including biophysical strategic agricultural land (**BSAL**). At the public meeting, other members of the public expressed the view that mining and agriculture can co-exist.
154. HTBA raised concerns regarding the extension of mining operations and the impacts of

subsidence on the equine industry and the ECIC. HTBA also raised concerns regarding the unknown impacts of subsidence on both known and unknown archaeological sites located within the footprint of the Project Site.

Council comments

155. MSC in their submission to the Department raised concerns regarding the 5 year extension and stated *“the proposal to extend the operating period for the mine to December 2027 will also extend the potential for the mine to impact on the community and environment”*.
156. UHSC in their submission to the Department objected to the proposed extension of the approval period, as this would extend the impacts of Dartbrook Mine on the community and environmental attributes UHSC is trying to protect. UHSC also raised concern that the life of longwall mining operations will be extended.

Proponent’s consideration

157. In relation to the extension of mining operations, the Proponent’s EA stated that *“the extension of the project duration facilitates the recovery of coal resources that have not yet been extracted as a result of Dartbrook Mine being under care and maintenance. The extension of the mining period will not result in the extraction of any coal that was not previously approved for extraction”*.
158. The Proponent undertook a subsidence assessment prepared by SCT Operations Pty Ltd (SCT) to identify appropriate pillar designs to minimise subsidence and to ensure the working remain stable over the long-term. According to the Proponent’s EA, the assessment concluded that:

“the predicted levels of subsidence are considered to be imperceptible for all practical purposes. The predicted levels of subsidence are not expected to result in any significant impact on surface features overlying the mine workings. The predicted vertical subsidence will also be significantly less than the subsidence that would occur if the approved longwall mining was carried out.”
159. In response to concerns raised regarding the impact of mining operations on ECIC and BSAL, the Proponent in their further comments to the Commission stated that *“although there are areas of mapped ECIC within the mining authorities boundary, these areas are outside of the Infrastructure Study Area (sic) and therefore will not be subject to surface disturbance as a consequence of the Modification”*. The Proponent stated that a small area of mapped ECIC is located above the indicative bord and pillar mining area, however, subsidence due to bord and pillar mining will be maintained at levels that are imperceptible and thus far less than would have resulted under the current approval.

Department’s assessment

160. According to the AR, the Department understands that the bord and pillar method is being pursued to *“limit the potential subsidence and subsidence impacts and to avoid some of the geotechnical issues previously experienced during long wall mining”*. The Department noted that vertical subsidence is predicted to occur, however the estimated subsidence is less than 100mm and therefore unlikely to have any measurable impact on surface features. The AR stated that in comparison with the approved longwall method, the *“bord and pillar extraction would result in a 2 m reduction in predicted*

vertical subsidence, with associated reductions in predicted tilts and strains.”

161. The Department's AR stated that the Proponent proposes to undertake further geotechnical investigations in the northern area of the mine where extraction overlies the former and already subsided (1.6 m) Wynne seam longwall panels to ensure pillar dimensions are carefully designed to limit surface subsidence to less than 100mm. The Department stated that *“to ensure this is achieved the Department has recommended a condition requiring AQC to undertake this geotechnical study prior to mining in this area”*.
162. In relation to impacts on the ECIC, the Department in their response to the Commission stated that as longwall mining is currently approved there is no requirement to re-assess its potential impacts on overlying mapped ECIC.
163. According to the AR, the Department concluded that the *“proposed modification would result in significant reductions in approved subsidence and therefore greatly-reduce subsidence impacts and environmental consequences”*. The Department also noted that the Resources Regulator did not raise any concerns.

Commission's consideration

164. The Commission recognises the concerns raised by UHSC and MSC in relation to the extension of time in paragraphs 155 and 156. However, the Commission agrees with the Proponent in that the extension of mining operations will facilitate the recovery of coal resources that have not yet been extracted as a result of the mine being under care and maintenance. The Commission acknowledges that the extension of the mining period will not result in the extraction of any coal that was not previously approved for extraction as stated by the Proponent in paragraph 157. However, the Commission notes that this approach fails to consider that the 5 year extension to DA 231-7-2000 relates to a new time period beyond that considered and approved in this DA. Since then DA 231-7-2000 has had a substantial period of time where it has been in care and maintenance. This means that it has not been impacting on a range of baseline environmental conditions to the level that might have occurred had the mine been fully operational over this period. Additionally, there have been substantial changes in the surrounding area via growth in the mining, residential, tourism and agriculture sectors, including the equine industry. The Commission finds that there are potentially significant impacts from mining operations on the environment and surrounding land uses as a result of subsidence, cumulative air quality, noise and socio-economic impacts that have not been adequately assessed to support a five year extension.
165. The Commission acknowledges UHSC concerns regarding the extension of longwall mining operations in paragraph 156. The Commission notes the conclusions of the Department outlined in paragraph 160 above that the bord and pillar mining method will result in significant reductions in approved subsidence and therefore greatly reduce subsidence impacts. However, the Commission concludes that the subsidence impacts of the Application have only been assessed against the bord and pillar methods as stated in paragraph 158 and not, the subsidence impacts of the full Application, that includes a 5 year extension to DA 231-7-2000, on ECIC land and BSAL, should longwall mining recommence.

4.9. Mine Safety

Public comments

166. The Commission heard concerns from speakers at the public meeting and received written comments regarding mine safety issues and the history of safety complications at Dartbrook mine. Concern was also raised regarding the gas content of the mine and mitigation measures proposed by the Proponent.
167. FOTUH raised concerns in relation to the proposed management of mine safety issues and risk to workers. Concerns were also raised regarding the management of fugitive methane emissions and anticipated spontaneous combustion.

Council comments

168. UHSC in their comments to the Commission raised concern regarding safety issues and the dangerous history of Dartbrook mine, specifically on-going spontaneous combustion events. UHSC also raised concern regarding ongoing geological issues and the lack of concern by the Proponent, the Department and the Resource Regulator in addressing safety issues in the approval process.

Proponent's consideration

169. In the RtS, the Proponent provided an explanation of the operational issues that resulted in Dartbrook Mine being placed under care and maintenance in 2006, and commented on whether these issues are applicable to the proposed bord and pillar mining method. The Proponent stated that:

"Longwall mining operations in the Kayuga Seam were hampered by unfavourable geotechnical conditions. Unlike bord and pillar mining, the longwall mining method relies on the roof of the strata above the coal seam sequentially collapsing behind the longwall miner as it advances. Due to the strata encountered in parts of the Kayuga Seam, this process did not occur as planned."

"The proposed bord and pillar mining method does not rely on the sequential collapsing of the coal seam roof. In fact, coal extraction will be carefully designed such that supporting coal pillars are left in-situ so that the mine workings remain stable over the long-term. That is, bord and pillar mining will not result in caving of the roof."

The Proponent concluded that *"the proposed mining activities for the Modification will not encounter the same geotechnical issues as previous longwall mining activities"*.

170. The Proponent confirmed in their further comments to the Commission that the Application does not propose any pillar extraction and that the pillars will be designed to remain stable in the long term.
171. In the Proponent's comments to the Commission, the Proponent stated that investigations into the previous accidents at the mine found that they were related to breaches of safety systems and were preventable. The Proponent stated that mine safety standards in the industry have improved substantially since Dartbrook Mine was last operational and that they will comply with relevant safety legislation including the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

172. In relation to gas content and spontaneous combustion, the Proponent stated in their further comments to the Commission that *“gas monitoring technology has improved significantly since the Dartbrook Mine was placed into care and maintenance in 2006. This has increased the accuracy of monitoring significantly which allows for earlier detection of potential spontaneous combustion events – making them far easier to manage and mitigate.”*

Department’s assessment

173. The Department’s response to the Commission noted that operations at Dartbrook mine ceased in late 2006 due to geological constraints causing operational difficulties. The Department stated that *“the revised mining methodology is proposed over the approved longwall mining as it would reduce risks associated with the mine’s geological conditions (including spontaneous combustion, gas management and geotechnical conditions)”*.

174. In the Department’s response to the Commission, the Resources Regulator stated that:

“it is the view of the regulator the proposed modification does not introduce a level of risk to workers that differs to other underground coal operation in NSW, and the existing provisions of NSW WHS legislation can be appropriately applied to manage this risk”.

“The regulator is unaware of any spontaneous combustion issues relating to extraction undertaken in the Kayuga Seam at Dartbrook. There is no relationship between “gas” levels and the likelihood of spontaneous combustion.”

“The regulator cannot support the proposition that high gas levels can be anticipated using the ‘bord and pillar’ method” and “it is noted that in the Proponents Additional Comments to the Commission it is stated that the Kayuga in-seam gas content is considered relatively low, and there is no intent on behalf [of] the proponent to undertake pillar extraction”.

175. The Department in their response to the Commission noted that the Resource Regulator has proposed four minor changes to the recommended notice of modification to clarify its regulator responsibilities. The Department stated that they endorse these changes.

Commission’s consideration

176. The Commission acknowledges the concerns raised by the public, FOTUH and UHSC in paragraph 166, 167, 168. The Commission accepts the Proponent’s statement summarised in paragraphs 171 and 172 and acknowledges that safety standards in the industry and gas monitoring technology have improved substantially since Dartbrook Mine was last operational. The Commission acknowledges the conclusions of the Resource Regulator in paragraph 174 in that the proposed Application does not introduce an unacceptable level of risk and that the provisions of the NSW WHS legislation can be appropriately applied to manage risks.

177. The Commission acknowledges the view of the Proponent in paragraph 169 and Department in paragraphs 173 and 174 that the proposed bord and pillar mining method will reduce risk because it does not rely on the sequential collapsing of the room wall in long wall mining methods. However, as stated in paragraph 17 the Application consists of the 5 year extension of existing operations including long wall operations, and as a result the Commission finds that there is uncertainty in relation to the safety impacts of

longwall mining should it recommence.

4.10. Groundwater

Public comments

178. The Commission heard concerns from speakers at the public meeting and received written comments regarding the impacts of the Application on groundwater and impact on water supplies for the agricultural and equine industry. Members of the public also noted that the assessment of groundwater impacts only consider the proposed bord and pillar mining rather than the cumulative impacts of what is currently approved.
179. FOTUH in their comments to the Commission raised concerns regarding the significant impacts to groundwater as a result of mining in the Hunter region. FOTUH also submitted that there was no guarantee that issues with groundwater impacts in the area and region would not occur again.
180. HTBA in their comments to the Commission raised concerns regarding the impact of the Application on water supplies for their horse breeding operations. HTBA stated that the available information does not support the conclusion that the Project's impacts would be manageable or acceptable.
181. HCN at the public meeting raised concerns regarding the failure to undertake a cumulative impact assessment of groundwater impacts. HCN considered that the cumulative impact on all groundwater sources caused by the extensive mining operations from Dartbrook to Mount Arthur has not been established. HCN recommended that a full cumulative assessment of groundwater impacts be undertaken to inform the determination decision.

Council comments

182. MSC in their submission to the Department during exhibition stated that Muswellbrook township draws its raw water supply from the Hunter River a short distance downstream of the Dartbrook mine. In addition to the ground water monitoring program proposed by the Proponent in the EA, MSC also seek *"in-stream water quality monitoring in the Hunter River at the southern edge of the water catchment of the mine, to monitor changes in oxygenation, turbidity, salinity, heavy metals and other pollutants"*. In their comments to the Department on the RtS, MSC stated that *"Council is satisfied that in-stream water quality monitoring in the Hunter River at the southern edge of the water catchment of the mine, is occurring"*.
183. UHSC in their comments to the Commission, raised concerns regarding the unknown impacts on neighbouring properties' groundwater, and about water security particularly in times of drought.

Proponent's consideration

184. The Proponent's EA included a specialist Groundwater Impact Assessment (GIA) prepared by Australasian Groundwater and Environmental Consultants (AGE) in order to assess the potential impacts of the Application on local groundwater resources. The Proponent's EA stated that *"the Modification is not expected to cause any detectable*

drawdown of shallow aquifers. Therefore, bores in the alluvium are not expected to be affected”.

185. In relation to the alluvial aquifers, the Proponent’s EA concluded that *“the groundwater assessment undertaken by AGE predicted that the proposed bord and pillar mining will not result in significant drawdown of alluvial aquifers”.*
186. In relation to water balance, the Proponent in their comments to the Commission stated that *“Dartbrook Mine has an established water management system, which has been effective at minimising extraction from the Hunter River and off-site discharges”.* The Proponent also stated that *“the Modification will not significantly alter the water management practices at Dartbrook Mine”.*
187. In relation to impact on water supplies, in their comments to the Commission, the Proponent stated that *“the potential inflows into the proposed Kayuga Seam bord and pillar workings are expected to be very low in magnitude. As such, the extent of groundwater depressurisation is not expected to increase due to the Modification”.* The Proponent also confirmed that *“groundwater impacts associated with bord and pillar mining will be less than those of the approved longwall mining activities”.*

Department’s assessment

188. The Department’s AR stated that the alluvium is constantly recharged by surface water from rainfall and regulated releases of the Glenbawn Dam into the Hunter River and should continue to remain unaffected by underground mining. The Department’s AR also stated that under the proposed bord and pillar method, the Permian groundwater system would continue to experience drawdown, albeit to a lesser degree than from the approved longwall mining.
189. The Department’s AR concluded that *“the proposed modification would result in substantially reduced groundwater seepage and drawdown than already approved to take place during longwall mining”.*
190. The Department has also recommended conditions to clarify the Proponent’s compensatory water supply obligations and to ensure sufficient water is available for its operations, or else that it scales its operations accordingly.

Commission’s consideration

191. The Commission acknowledges the concerns raised by the public, UHSC and MSC summarised in paragraphs 178, 179, 180, 181, 182 and 183. The Commission agrees with the Department’s conclusion summarised in paragraphs 188 and 189 in that the proposed bord and pillar methods will result in a reduced groundwater seepage and drawdown than the approved long wall mining method. However, the Commission notes that Application consists of the 5 year extension of existing operations which includes long wall mining operations. The Commission finds that there is insufficient information provided in relation to the assessment of the impacts on groundwater seepage and drawdown from longwall mining should it recommence.

4.11. Surface Water and Flooding

Public comments

192. The Commission heard concerns from speakers at the public meeting and received written comments regarding surface water and the risks associated with flooding.
193. HTBA raised concerns that the flood risk assessment relies on outdated information. HTBA also noted OEH's concern that the location of the proposed delivery shaft and the potential risk to human life from inundation, had not been appropriately addressed by the Proponent.

Proponent's consideration

194. In response to concerns raised regarding the location of the shaft and the potential risk to human life from flooding, the Proponent has proposed to construct a bund or elevated mound to protect the shaft and ancillary infrastructure from any 100 ARI flood event. The Proponent has also proposed to cover the shaft and prepare an emergency evacuation procedure to ensure worker safety.
195. The Proponent in their further comments to the Commission stated *"the mine will operate its activities using dedicated Trigger Action Response Plans (TARPs) to manage operational and safety risks. As such, the potential risk to personnel due to a rain event is extremely low as the TARPs to be implemented provide specific staged controls for any number of potential scenarios"*.
196. The Proponent in their further comments to the Commission committed to the lining of the shaft, if groundwater is found to be present at the proposed shaft location. The Proponent also committed to conducting a test bore at the proposed shaft site as an additional safeguard. The Proponent stated that *"this test bore will be installed prior to construction to determine if groundwater is present. This test bore will inform the shaft construction technique to safeguard against any potential for excessive seepage of groundwater from the shaft into the Hunter Tunnel"*.

Department's assessment

197. The Department's AR stated that while OEH remains concerned with the location of the proposed delivery shaft and the potential risk to human life the Department considers that the Proponent has proposed all reasonable and feasible mitigation measures to mitigate flood risks.
198. The Department, in their response to the Commission stated that they remain satisfied that the Department has carefully considered and addressed all potential groundwater impacts associated with the proposed delivery shaft.
199. The Department, in their response to the Commission noted that the proposed test bore and lining of the shaft was committed to by the Proponent in the RtS and that compliance with this commitment is captured in the conditions which require the Proponent to undertake the development in accordance with the EA and RtS, including any commitments made in these documents.
200. The Department's AR also stated that a condition was recommended which requires the

Proponent to prepare a Flood Response Plan prior to construction of the delivery shaft to mitigate any flood safety risk to on-site personnel.

Commission's consideration

201. The Commission accepts the conclusions of the Department outlined in paragraphs 197 and 198 in that the Proponent has proposed all reasonable and feasible measures in order to mitigate flood risks. The Commission is satisfied that the elevated mound and shaft cover will assist in mitigating risks associated with the flooding of the shaft site by floodwaters.
202. The Commission considers that the Proponent should be able to sufficiently mitigate and manage operational and safety risks because they have committed to institute a procedure to provide sufficient warning of flood events as stated in paragraph 195.
203. The Commission acknowledges that the Proponent has committed to undertaking a test bore and lining of the shaft if groundwater is present to prevent seepage into the Hunter Tunnel as stated by the Proponent in paragraph 196 and by the Department in paragraph 199. The Commission has therefore imposed a condition specifically requiring the Proponent to undertake the test bore prior to undertaking construction and potential lining of the shaft if the test prior establishes that the shaft will intersect with alluvium water.
204. The Commission accepts the conditions recommended by the Department referred to above in paragraph 200 requiring the Proponent to prepare a Flood Response Plan prior to the construction of the shaft as this will further ensure that any flood safety risks to on-site personnel are mitigated.

4.12. Social Impacts

Public comments

205. The Commission heard concerns from speakers at the public meeting and received written comments regarding the social impacts of the Application on the local community, businesses and the thoroughbred industry. Concern was also raised regarding the adequacy of the SIA.
206. Speakers at the public meeting pointed out that the SIA does not separately address the nine categories of potential social impact identified in the SIA Guideline and that the focus is on potential economic impacts rather than the assessment of the social impacts of the mine's noise and air impacts and the perceptions, fears and aspirations of the community.
207. HTBA in their comments to the Commission raised concerns that the SIA "*was undertaken [in the RtS] following the public exhibition of the Modification proposal and demonstrates a complete disregard for community concerns of the social and environmental impacts*" of the Application stating that they have not properly been assessed. HTBA also stated that the social impacts experienced as a result of the Project would actually be more akin to a new mine.
208. FOTUH in their comments to the Commission raised their concern regarding the social impacts stating that the site is not suitable for this development and that the social

impacts are unacceptable. FOTUH also stated that the Proponent's SIA *"cannot be considered as having properly assessed the social impacts and therefore any economic assessment of this proposal will also be faulty"*.

Council comments

209. MSC in their submission to the Department during exhibition stated that the *"assessment of cumulative environmental and social impacts completed for the original proposal is now out of date and unreliable as a predicator of impact"*.

Proponent's consideration

210. The Proponent's RtS included a SIA prepared by Hansen Bailey which considered the social impacts and opportunities relating to the Application on the local communities of Kayuga, Dartbrook and Aberdeen, extending out to the regional communities of Scone and Muswellbrook.

211. The SIA concluded that:

"the Modification will employ up to 26 FTE during construction and up to 99 FTE during the operations phase. It will support both direct and indirect economic growth in the Muswellbrook and UHS LGAs. The Modification will also positively impact employment, training opportunities, infrastructure and sponsorship in the Regional Area."

"the Modification will result in minimal amenity, air quality, noise and visual impacts as it proposes an underground mining operation whereby the majority of these impacts will not exceed acceptable limits."

212. The Proponent's EA and SIA also presented a number of strategies designed to mitigate or manage potential negative social impacts of the Project.

Department's assessment

213. The Department's AR stated that the SIA Guideline applies to modifications where the social impacts are new or different (in terms of scale and/or intensity) to those approved under the original consent. The Department's AR stated that the Proponent did not initially provide an SIA and this was requested because it was *"a key concern for the community"* and the *"length of time that had passed since social impacts were last considered (in 2000) and that mining operations are proposed until 2027."*

214. The Department's AR stated:

"due to the long period of inactivity at Dartbrook (ie 10+ years of care and maintenance), any recommencement of mining operations, regardless of the modification, would lead to social impacts. While the modification itself represents a minor alteration to an approved underground mine, the social impacts actually experienced would be more akin to a new mine opening."

215. The Department in its AR acknowledged public concerns that the SIA did not *"sufficiently address community concerns"* in line with the Department's SIA guidelines. The AR summarised community concerns as follows:

"Many expressed concern that they did not want to see overdevelopment of coal

resources in the Upper Hunter. Many highlighted the region's successful tourism, agriculture, viticulture and equine industries, which form a strong part of the regional identity. Some submitters expressed their concern regarding a perceived incompatibility of these local industries with coal mining.

Particular concerns were also raised over potential impacts on the Upper Hunter Equine Critical Industry cluster, the thoroughbred breeding industry and general horse health. The Upper Hunter Equine CIC is a geographically mapped area of highly productive equine industries that contribute to the identity of the region and provide significant employment opportunities. Submissions highlighted that the equine industry relies on the Upper Hunter's clean water, clean air and topography for its success."

216. Nonetheless, the Department's AR concluded that the Proponent has appropriately considered the social impacts and that a number of mitigation measures and community enhancement strategies have been proposed to minimise the social impacts and maximise the local benefits of the mine.
217. In addition to the measures put forward by the Proponent, the Department also recommended the following conditions in order to further ensure that the social impacts of the Project are minimised.
- private landowners can request an independent air quality or noise review to verify compliance or implement measures to ensure compliance;
 - the Proponent must provide compensatory water supply to any private landowner whose rightful water supplier is adversely and directly impacted by the development;
 - the Proponent must prepare an Environmental Management Strategy that sets out procedures to keep the local community informed of the development and to resolve any disputes that may arise;
 - the Proponent must continue to operate the Dartbrook Community Consultative Committee (CCC);
 - the Proponent must enter into VPAs with MSC and UHSC within six months of approval of this Application.

Commission's consideration

218. The Commission has had regard to the views expressed at the public meeting and in written submissions, the analysis in the SIA by the Proponent and the conclusions of the Department. The Commission accepts that the Application will have social impacts, both positive and negative.
219. The Commission acknowledges the concerns raised by the public in relation to the adequacy of the SIA summarised in paragraphs 205, 206, 207 and 208. The Commission notes that the Department concluded that the Proponent has appropriately considered the social impacts and that a number of mitigation measures have been proposed to minimise social impacts. However, the Commission finds that the social impacts of the Project have been assessed by the Department against the mine in care and maintenance mode, whereas other aspects of the Application are assessed against the mine during long wall operation. The Commission finds that no assessment has been conducted on the social and economic impact of the Application in its entirety, that is including the 5 year extension to DA 231-7-2000, on the Equine Critical Industry Cluster given that areas of ECIC land overlap the mining lease, and the proximity of the mine to thoroughbred industry enterprises.

4.13. Visual Impact

220. The Commission heard from speakers at the public meeting and received written comments regarding the visual impact of the Project. HTBA in their comments to the Commission stated that visual impact has been overlooked and that the Visual Impact Assessment (VIA) in the EA is inadequate. FOTUH in their comments to the Commission raised concerns regarding the impact on visual amenity.
221. The HTBA raised concerns in relation to visual impacts of the new shaft site, the access road to the shaft and the movement of coal haul trucks from the Kayuga Entry Shaft to the new shaft near the New England Highway (96 truck cycles per day (B Double) truck movements, 11 hours a day, 5 days a week). The HTBA pointed out that this could impact on residences near Aberdeen and persons using the New England highway.
222. The Commission notes that the Proponent has committed to enclosing the shaft and ROM coal bin with a Colourbond shed similar to that used in the area for agricultural or industrial uses. The Commission also notes that in relation to the colouring of the new shaft enclosure, MSC stated in the submission to the Department that they would prefer *“Woodland Gray as a more recessive colour that better matches the tones of natural tree vegetation and landscape in this location”*.
223. The Proponent in their comments to the Commission noted that *“the visual impact of Dartbrook Mine is limited to surface infrastructure, the majority of which is already extant”*. The Proponent concluded that the contribution of the Application to the cumulative visual impact is negligible.
224. The Department’s AR stated that the visual impacts of the new shaft site and haul road would be minor and able to be mitigated. The AR stated that although travellers along the New England Highway and Main Northern Railway line would have fleeting views of the site, their visual sensitivity would be low due to their travel speeds and intervening vegetation. Existing conditions require the Proponent to prepare a Landscape Management Plan that includes a landscape strategy to screen views of the site from the New England Highway and ensure new development blends in as far as practicable with the surrounding landscape. The Department concluded that *“these conditions remain appropriate for the modification and that no additional conditions are required”*.
225. Based on the material, the Commission accepts the Department’s analysis and conclusion in paragraph 224. The Commission finds that while the visual impacts of the new shaft site and haul road are minimal and able to be mitigated through existing conditions and implementation of a Landscape Management Plan, the intensity of truck movements on the haul road across a highly visible landscape represent the main visual impact and will detract from the visual amenity of the area, noting that is effectively the ‘gateway’ to Aberdeen and the equine industry in the Upper Hunter.

4.14. Heritage

226. The Commission heard from speakers at the public meeting and received written comments regarding the potential cultural and archaeological heritage impacts of the Application. HTBA in their comments to the Commission stated that historical heritage has not been assessed and that the whole of mine impacts on heritage sites and values should have been assessed.

227. In the Proponent's response to the Department regarding the issues raised by the OEH, the Proponent stated that the approved Aboriginal Cultural Heritage Management Plan (**ACHMP**) identifies that there are two sites located in close proximity to the haul road. The Proponent concluded that *"the ACHMP will be updated to include these management measures. With the existing and proposed management measures in place, the Modification will not impact upon the two Aboriginal sites located in close proximity to the haul road"*.
228. The OEH in their submission to the Department during exhibition, dated 4 July 2018 stated that *"the site of the proposal does not include any items listed on State Heritage Register (SHR) or known historic archaeology, nor is the site in the immediate vicinity of any SHR items or potential historic archaeology. Therefore, no comments are provided in relation to this matter and no further referral is required to the Heritage Council unless State significant historic heritage or archaeology is subsequently identified."*
229. The Department's AR stated that there were no identified Aboriginal sites in or near the new shaft site and that OEH is satisfied with the Proponent's approach to managing existing extant sites within the vicinity of the proposed roadworks. The Department concluded that *"the modification is unlikely to impact any Aboriginal cultural heritage and agrees that the Aboriginal Cultural Management Plan should be updated prior to recommencing activities on the site"*.
230. Based on the material, the Commission accepts the Department's analysis and conclusion in paragraphs 228 in that the Application is unlikely to impact Aboriginal cultural heritage because there are no known Aboriginal sites near the new shaft site and that existing extant sites can be protected from construction works through an updated ACHMP. The Commission acknowledges the concerns raised by the HTBA in paragraph 226, however the Commission accepts the OEH's conclusion in paragraph 228, in that there are no items listed on State Heritage Register within or in vicinity the Project Site.

4.15. Objects of the EP&A Act and Public Interest

Department's consideration

231. In the Department's AR, the Department stated that the proposed Application has been assessed against the current Objects of the EP&A Act.
232. The Department concluded in the Department's AR that:
- the modification would facilitate reopening of Dartbrook which would:
 - provide socio-economic benefits to the people of NSW and employment opportunities for the region;
 - allow recovery of the State's coal resources in a safe and efficient manner; and
 - have a better environmental outcome than the currently approved longwall mining.
 - the modification can be carried out in a manner that is consistent with the principles of Ecologically Sustainable Development (**ESD**). The Department's assessment has sought to integrate all significant environmental, social and economic considerations;
 - the modification would allow for the economic recovery of a coal resource, rather than the mine remaining in care and maintenance;

- the modification would largely use existing infrastructure;
- the modification would not significantly impact any threatened species, populations or ecological communities;
- the modification would not impact on Aboriginal cultural heritage or historic heritage;
- the Department publicly exhibited the Application and consulted with both affected Councils and other public authorities. The Department has considered all responses in its assessment; and
- the Department publicly exhibited the Application and made it publicly available on its website.

Commission's consideration

233. In determining the public interest merits of the proposed Application, the Commission has had regard to the objects of the EP&A Act.

234. Under section 1.3 of the EP&A Act, the relevant objects applicable to the Project are:

- to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
- to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
- to promote the orderly and economic use and development of land,*
- to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
- to promote the sustainable management of built and cultural heritage,*
- promote good design and amenity of the built environment,*
- promote the proper construction and maintenance of buildings, including the protection of health and safety of their occupants,*
- to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State, and*
- to provide increased opportunity for community participation in environmental planning and assessment.*

235. A key relevant object of the EP&A Act to the Application, as outlined in paragraph 234, is the facilitation of ESD. The Commission notes that section 6(2) of the *Protection of the Environment Administration Act 1991* states that ESD requires the effective integration of social, economic and environmental considerations in its decision-making, and that ESD can be achieved through the implementation of:

- the precautionary principle;*
- inter-generational equity;*
- conservation of biological diversity and ecological integrity; and*
- improved valuation, pricing and incentive mechanisms.*

236. The Commission has considered representations, advice and comments provided by government agencies and the community. The Commission cannot find that the Application as modified to require a 5 year extension is consistent with the ESD principles in particular the precautionary principle and the principle of inter-generational equity and the Objects of the Act because the social and environmental impacts of the Project have not been adequately assessed or considered (see paragraphs 73, 113, 116, 131, 132, 150, 191, and 219), and there is uncertainty about the Application's future impacts as it entertains the possibility that some aspects of the currently approved

Project may continue or restart after 2022 and the Application does not adequately evaluate these impacts, and how these would then affect the Project's CBA (see paragraph 72).

5. HOW THE COMMISSION TOOK COMMUNITY VIEWS INTO ACCOUNT IN MAKING DECISION

237. The views of the community were expressed through public submissions and comments received (as part of exhibition and as part of the Commission's determination process) and from members of the public who spoke at the public meeting as discussed and summarised in paragraph 41 and as noted through **section 4** above. Comments on the Project received up until 1 July 2019 were considered by the Commission.
238. The Commission carefully considered all of these views as part of making its decision. The way in which these concerns were taken into account by the Commission is set out in **section 4** above.

6. CONCLUSION: THE COMMISSION'S FINDINGS AND DETERMINATION

239. After carefully considering all the Material before it, including the community's views, the Commission has determined to approve part of the Application to permit mining operations at the Project Site under existing *DA 231-7-2000* up until 5 December 2022 subject to conditions of consent, namely to:
- commence underground coal mining on the site using bord and pillar methods; and
 - use a varied coal clearance system, including transport of coal by trucks using a private haul road to a new coal delivery shaft connecting to an existing underground conveyor to the existing coal handling and preparation plant.
240. After considering all the Material before it, including the community's views, the Commission has determined to refuse the Application's proposal to extend *DA 231-7-2000* by 5 years to 2027.
241. The Commission finds that the Application is within the broad scope of s75W as set out by the Department in paragraph 29, as the Project would not change the dominant use of the Site and the mining area, and would not significantly increase the scale, intensity or environment impacts of the existing Project Approval. The Commission therefore finds that the request to modify can be considered and approved with conditions under s75W.
242. The Commission finds that the partial approval outlined in paragraph 239 is acceptable because:
- mining operations have been approved until 2022 and bord and pillar mining has been acknowledged by the Proponent and Department as a less intensive and environmentally impacting activity than longwall mining as set out in paragraph 165;
 - the proponent has committed to seal the haul road in order to mitigate dust emissions as set out in paragraph 112;
 - the Proponent has proposed reasonable and feasible mitigation measures to minimise the noise impacts resulting from the Application and those residual noise impacts are acceptable, as set out in paragraph 151;
 - the Proponent has proposed reasonable and feasible measures in order to mitigate flood risks, as set out in paragraphs 201, 202 and 203;
 - the Proponent has committed to undertaking a test bore and lining of the shaft if

groundwater is present to prevent seepage into the Hunter Tunnel as set out in paragraphs 196 and 199;

- the Project is unlikely to impact Aboriginal cultural heritage as set out in paragraph 230;
- the visual impacts of the new shaft site and haul road are minimal and able to be mitigated through existing conditions and implementation of a Landscape Management Plan, as set out in paragraph 225; and
- mining operations up until 2022 are in the public interest and in accordance with the ESD principles as set out above and in paragraph 236.

243. The Commission has determined to refuse a 5-year extension of DA 231-7-2000 to 2027 for the following reasons:


- the impacts relating to air quality, noise, subsidence, groundwater and GHG emissions have not been fully considered in this application, as set out in paragraphs 113, 164, 165, 177 and 191.
- there is a lack of rigour in the assessment of the social and environmental costs of the Project in the CBA and as a result the Commission is not satisfied that these have been adequately assessed and quantified as set out in paragraph 73;
- the costs associated with the potential re-opening and operation of the washery and reinstatement of the Hunter Tunnel have not been properly accounted for in the economic analysis and assessment as set out in paragraph 72;
- the impacts associated with the potential re-opening and operation of the washery and reinstatement of the Hunter Tunnel have omitted from the air quality modelling for the Application as set out in paragraph 113;
- the air quality assessment does not consider the air quality impacts of the existing DA 231-7-2000 approval being fully operational, in addition to the proposed modification, in the context of changes in background air quality since the original approval was granted as set out in paragraph 116;
- the information provided up to this point regarding GHG emissions related impacts and the appropriateness of the methodology for estimating the social and economic costs of the projected emissions is unsatisfactory;
- the net present value of the cost of GHG emission impacts from the Application over its 10-year life span have not been considered. Further there has not been any proposal to minimise, mitigate or offset these impacts as set out in paragraph 131;
- the timing of information supplied in relation to GHG emissions was unsatisfactory. GHG emissions were not dealt with in the AQIA and information on Scope 3 emissions was only provided after the Public Meeting had been held which deprived the public and stakeholders of an opportunity to comment at an earlier stage of the proceedings as set out in paragraph 130;
- the Proponent's application has been largely assessed against the bord and pillar mining method and the proposed coal clearance system as set out in paragraphs 152 and although there is an existing approval for longwall and associated operations, the cumulative noise impacts of these operations as part of the 5 year extension have not been considered, should the full operations approved under DA 231-7-2000 recommence;
- the subsidence impacts of the Application have only been assessed against the bord and pillar methods as stated in paragraph 165 and although there is an existing approval for longwall operations, the subsidence impacts of longwall mining on ECIC land and BSAL as part of the 5 year extension have not been considered, should longwall mining recommence;
- the SIA lacked rigour and did not adequately assess the social impacts of the

Project. No assessment appears to have been conducted on the social and economic impact of the modification on the Equine Critical Industry Cluster given that areas of ECIC land overlap the mining lease and the proximity of the mine to thoroughbred industry enterprises. Further the social impacts have been assessed against the mine in care and maintenance mode, whereas other aspects of the Application are assessed against the mine during long wall operations as set out in paragraph 219;

- the intensity of truck movements on the haul road across the highly visible landscape will detract from the visual amenity of the area, noting that is effectively the 'gateway' to Aberdeen and the equine industry in the Upper Hunter as set out in paragraph 225;
- a 5 year extension of the Project to 2027 would not be in accordance with ESD principles, in particular the precautionary principle as there is insufficient information available to the Commission to enable a comprehensive and informed consideration of the impacts and risks inherent in a 5 year extension of the Project in view of the proposal to keep the existing *DA 231-7-2000* approval in place concurrently with the modification Application;
- the 5 year extension would not be in accordance with the principle of inter-generational equity given the lack of rigorous assessment of air quality impacts, GHG emissions, noise impacts and social impacts should the full operations approved under *DA 231-7-2000* commence; and
- a 5 year extension of *DA 231-7-2000* to 2027 as proposed in the Application is not in the public interest, as set out above and in paragraph 235.

244. For the reasons above, the Commission has determined that part of the Application can be approved, subject to the amended conditions. These conditions are designed to prevent, minimise and/or offset adverse environmental impacts and social impacts on the community. However, the Commission has determined to refuse a 5 year extension of *DA 231-7-2000* to 2027.

245. The reasons for the Decision are given in this Statement of Reasons for Decision dated 9 August 2019.



Zada Lipman (Chair)
Member of the Commission



Ross Carter
Member of the Commission



Peter Cochrane
Member of the Commission

APPENDIX 1 - COMPARISON OF EXISTING OPERATIONS AND PROPOSED APPLICATION

Aspect	Approved	Proposed
Life of project	<ul style="list-style-type: none"> 21 years (2022) 	<ul style="list-style-type: none"> Additional 5 years (2027)
Hours of operation	<ul style="list-style-type: none"> 7 days per week, 24 hours per day 	<ul style="list-style-type: none"> No change to mining operational hours Private road haulage of ROM coal Monday to Friday between 7 am and 6 pm Construction hours limited to 7 am to 6 pm on weekdays and 8 am to 1 pm on Saturdays, except drilling the shaft which would be undertaken 24 hours/day
Project area/mining area	<ul style="list-style-type: none"> Mining leases (CL 386 and ML 1497) Some ancillary infrastructure located outside mining leases 	<ul style="list-style-type: none"> No change
Mining method	<ul style="list-style-type: none"> Longwall mining 	<ul style="list-style-type: none"> No change Additional approval of bord and pillar mining of the Kayuga seam
Mine plan	<ul style="list-style-type: none"> Kayuga seam: 20 longwall panels (3 previously mined) Mt Arthur seam: 3 longwall panels Piercefield seam: 28 longwall panels (or 19 depending on panel width) Wynn seam: 11 longwall panels (9 previously mined) 	<ul style="list-style-type: none"> Kayuga seam: additional bord and pillar mining within approved mining areas (as an alternative to longwall mining) No change to Mt Arthur, Piercefield or Wynn seam
Coal reserves	<ul style="list-style-type: none"> Mt Arthur seam: 11.3 Mt Kayuga seam: 57.2 Mt Piercefield seam: 76.2 Mt 	<ul style="list-style-type: none"> Kayuga seam: 10 Mt via bord and pillar mining method No change to Mt Arthur or Piercefield reserves
Production rate	<ul style="list-style-type: none"> 6 Mtpa of ROM coal 	<ul style="list-style-type: none"> No change 1.5 Mtpa is expected during bord and pillar mining
Surface infrastructure	<u>East Site</u> <ul style="list-style-type: none"> ROM and product coal stockpiles CHPP and ROM hopper Conveyors Rail loop and loadout facilities Tailing storage facilities Water management infrastructure 	<u>East Site</u> <ul style="list-style-type: none"> No change other than minor refurbishments
	<u>West Site</u> <ul style="list-style-type: none"> Mine entry portals including Kayuga Entry Administration buildings and bathhouse Ventilation shafts (No. 1 Shaft and No. 2 Shaft) Nitrogen Injections Plant above the Kayuga seam goaf (now decommissioned) Gas drainage boreholes Drop-holes and associated pipelines Effluent ponds Water management infrastructure including dewatering boreholes, tailing decant water pipelines and pumping system Internal haul roads, including the Western Access Road 	<u>West Site</u> <ul style="list-style-type: none"> Minor refurbishment/reinstatement of existing infrastructure Upgrade/sealing on internal haul roads Establishment of a new 8,000 tonne, 8 m high TOM coal stockpile at the Kayuga Entry Construction of a new shaft site including a 6 m wide and 70 m deep coal delivery shaft that connect to the Hunter Tunnel and associated infrastructure including: <ul style="list-style-type: none"> ROM coal bin Partially enclosed 9 m high shed Vehicle turning bay Electricity infrastructure Water reticulation Flood protection

Coal transport	<u>Onsite</u> <ul style="list-style-type: none"> • ROM coal transported by conveyors from West Site to East Site via the Hunter Tunnel coal clearance system (which connects to the Wynn seam) 	<u>Onsite</u> <ul style="list-style-type: none"> • Transport of ROM coal by B-double trucks from the Kayuga Entry along existing private haul road to the new shaft site • Average of 96 truck movements per day (192 one-way trips), operating between 7 am to 6 pm Monday to Friday
	<u>Offsite</u> <ul style="list-style-type: none"> • Product coal transported to Newcastle via Main Northern Rail Line 	<u>Offsite</u> <ul style="list-style-type: none"> • No change
Water management	<ul style="list-style-type: none"> • Mine water dams including: <ul style="list-style-type: none"> ◦ Staged Discharge Dam (SSD) with licensed discharge under the Hunter River Salinity Trading Scheme (HRSTS) ◦ Western Holding Dam (WHD) ◦ Eastern Holding Dam (EHD) • Diversion and contour drains • Sediment dams • Clean water dams • Evaporation ponds • Dewatering bored and pipelines • Use of Wynn seam goaf for water storage • Water Access Licence (WALs) to account for surface and groundwater take 	<ul style="list-style-type: none"> • No change
Processing	<ul style="list-style-type: none"> • Crushing, screening and washing of ROM coal using the CHPP 	<ul style="list-style-type: none"> • No change, however ROM coal extracted from the Kayuga seam via bord and pillar mining would not be washed
Reject management	<ul style="list-style-type: none"> • Coarse and fine rejects emplaced at the REA at the East Site or pumped via tailings slurry pipeline to the Wynn seam goaf 	<ul style="list-style-type: none"> • No change, however there would be no generation of coarse or fine rejects if ROM coal is unwashed (ie bypass product)
Employment	<ul style="list-style-type: none"> • Approximately 30-40 full time equivalent (FTE) construction personnel • Approximately 282 FTE personnel, comprising 192 permanent employees and 100 contractors (currently 11 FTE personnel during care and maintenance) 	<ul style="list-style-type: none"> • Approximately 26 FTE personnel during construction of the new surface infrastructure • Approximately 99 FTE personnel during the operation phase (2019-2027), comprising 69 permanent employees and 30 contractors