



Independent Planning Commission Statement of Reasons Moolarben Coal Mine Stage 1 (05_0117 Mod14) Moolarben Coal Mine Stage 2 (08_0135 Mod3)

1. INTRODUCTION

1. On 7 February 2019, the Independent Planning Commission NSW (the **Commission**) received from the NSW Department of Planning and Environment (the **Department**) two concurrent modification applications from Moolarben Coal Operations Pty Ltd (the **Proponent**). One of the applications is to modify the Moolarben Coal Mine Stage 1 Project (05_0117) approved on 6 September 2007 (**'Stage 1 Project Approval'**) (**Stage 1 Modification 14**). The other application is to modify the Moolarben Coal Mine Stage 2 Project approved on 30 January 2015 (**'Stage 2 Project Approval'**) (**Stage 2 Modification 3**) (collectively the **Modifications**). Both stages are being concurrently operated at the Moolarben Coal Mine (the **Project**).
2. Clause 2(1) Schedule 2 to the *Environmental Planning & Assessment (Savings, Transitional and Other Provisions Regulation 2017 (ST&OP Regulation)*, provides for projects which are the subject of an existing Part 3A approval to remain transitional Part 3A projects. A Part 3A approval may be modified under section 75W of the EP&A Act in certain circumstances if the request was made before the 'cut-off date' of 1 March 2018.
3. As the Modifications were submitted before 1 March 2018, the provisions of clause 2 of Schedule 2 to the ST&OP Regulation apply.
4. The Commission is a delegate of the Minister for Planning in respect of such transitional Part 3A projects, in accordance with the Minister's delegation dated 14 September 2011.
5. Pursuant to that delegation, the Commission must determine the Proponent's modification application because:
 - the Project constitutes a development of a kind that is declared by an environmental planning instrument as development for which a public authority (other than a council) is the consent authority; and
 - the Department received:
 - a. more than 25 submissions from the public objecting to the Modifications.
6. Professor Mary O'Kane, Chair of the Commission, nominated Gordon Kirkby (Chair), Professor Chris Fell AM, and Professor Gary Willgoose to constitute the Commission determining the modifications.
7. On 8 May 2019, Professor Garry Willgoose stepped down from Commissioner duties due to a serious illness. As a result, Professor Willgoose was withdrawn from the Commission Panel.
8. On 9 May 2019, Professor Mary O'Kane, Chair of the Commission, notified the Proponent and the Department, and those who spoke at the public meeting, of Professor Willgoose's condition; and published a notice on the Commission's website on 9 May 2019 that provided seven days to comment on Professor Willgoose's withdrawal from the matter and the Chair of the Commission's proposed change to the constitution of the panel, to have the two remaining panel members to determine the Modifications.

9. The Commission received a total of eight comments, which included one comment from the Proponent and one comment from the Department supporting the proposed change; and six public comments objecting to the two-member panel. The objections included the following:
 - that the groundwater impacts are significant and impacts on the integrity of the Goulburn River and dependent ecosystems and downstream water users are likely to be considerable;
 - that it is considered appropriate to appoint three Commissioners to consider this matter and that three should be available to reach a decision; and
 - that an odd number of members in the Panel, makes for a better process in decision making.
10. Comments also requested for Professor O’Kane to take the place of the third Commissioner because of her experience as the NSW Chief Scientist and Engineer.
11. On 21 May 2019, Professor O’Kane, following consideration of the comments received and having regard to all of the circumstances, decided to proceed with a two-member panel.

1.1 Modification Applications

12. The Department issued one report which included the assessment of the Modifications, the Department’s Assessment Report date, February 2019 (**AR**).

Background to Stage 1 Project Approval

13. According to the Department’s AR on the Modifications, on 6 September 2007 the then Minister for Planning approved the Stage 1 Project Approval under the former Part 3A of the EP&A Act, which allowed for the development of three open cut (**OC**) pits (named OC1, OC2 and OC3), an underground mining operation (named UG4), and a range of surface infrastructure to support mining operations, including a coal handling and preparation plant (**CHPP**) and coal rail transportation facilities.
14. In terms of production, the Stage 1 Project Approval allowed for the extraction of up to 8 million tonnes per annum (**Mtpa**) of run-of-mine (**ROM**) coal combined from the open cut pits, and 8 Mtpa of ROM coal from the underground mine. Coal washing is limited to 13 Mtpa.
15. The Stage 1 Project Approval has been modified on 13 occasions under section 75W of the EP&A Act.

Background to Stage 2 Project Approval

16. On 30 January 2015, the Planning Assessment Commission (**PAC**) approved the Stage 2 Project Approval, also under the former Part 3A of the EP&A Act, which allowed for the expansion of mining operations to the east of the Stage 1 operations, including the development of a large open cut pit (named OC4) and two underground mining operations (named UG1 and UG2).
17. Coal production under the Stage 2 Project Approval is limited to 12 Mtpa of ROM coal from the open cut operation, and 8 Mtpa from the underground operations. The Stage 2 Project Approval has been modified twice under section 75W of the EP&A Act.
18. According to the Department, the Stage 2 Project Approval is being operated concurrently with the Stage 1 Project Approval, and the two projects share the same infrastructure, including the CHPP and rail facilities.

Summary of Modification Applications

19. According to the Department's AR, the Modifications propose to increase the open cut coal production limits and optimise the coal processing and handling activities, with limited changes to the currently approved mining operations. The key aspects of the Modifications include:
- **Stage 1 Modification 14:**
 - increasing the annual ROM coal production limits from 8 Mtpa to 10 Mtpa;
 - the handling limit for ROM coal extracted from the combined Stage 1 and Stage 2 open cut pits would increase from 13 Mtpa to 16 Mtpa;
 - revisions to the pit boundary limits of two of the Stage 1 open cut pits (OC2 and OC3);
 - the amount of the combined ROM coal washed at the CHPP would increase from 13 Mtpa to 16 Mtpa;
 - the peak daily product coal rail movements would increase from 9 to 11 per day (with an average of 8 rail movements per day);
 - installation of a reverse-osmosis water treatment facility and associated infrastructure to reduce the salinity of discharged water;
 - Minor changes to surface infrastructure that include:
 - the realignment, straightening and widening of the approved OC2 and OC3 haul road;
 - increased product coal and construction material stockpiles;
 - an upgrade to the rail load-out infrastructure to handle the additional coal produced; and
 - the relocation of the existing licensed discharge point and an increase to the volume of allowable water discharges from 10 Megalitres a day (ML/day) to 15ML/day for certain periods of extraction.
 - **Stage 2 Modification 3:**
 - increasing the annual ROM coal production limits from 12 Mtpa to 16 Mtpa;
 - the handling limit for ROM coal extracted from the combined Stage 1 and Stage 2 open cut pits would increase from 13 Mtpa to 16 Mtpa;
 - the amount of the combined ROM coal washed at the CHPP would increase from 13 Mtpa to 16 Mtpa;
 - the handling limit for ROM coal extracted from the combined Stage 1 and Stage 2 open cut pits and the underground mining operations would increase from 21 to 24 Mtpa;
 - Minor changes to surface infrastructure that include:
 - the realignment, straightening and widening of the approved OC2 and OC3 haul road;
 - increased product coal and construction material stockpiles;
20. According to the Department's AR, the Modifications would not require changes to the existing mining fleet, the workforce, underground coal extraction limits or underground mine layouts, or the operational life of the Project.
21. Figure 1 indicates the approved layout of the site in relation to its surrounding context.

Need for the Modifications

22. The proponent submitted one Environmental Assessment (**EA**) that assessed both Modifications. In its EA, the Proponent stated that *“Justification for the Modification is based on the following:*
- *The proposed increases in the rate of open cut ROM coal production can be achieved with no material change in fleet and no exceedances of the Project Approval limits for noise and air quality.*
 - *A suitable offset strategy, which includes land based offsets at the MCO-owned Gilgal property (Figure ES-3), has been identified to compensate for the residual potential impacts to biodiversity.*

- *The Modification would result in an improved final landform due to the removal of the approved OC3 permanent out-of-pit emplacement.*
- *The Modification would improve efficiency of resource recovery, which would result in an increase in Government royalties of approximately \$82 million (net present value of approximately \$69 million).*
- *The increased production limits allow annual revenue to increase. This improves the productivity of the Moolarben Coal Complex, which improves the security of the continued employment of the existing workforce and ongoing expenditure in the State and local economies.*
- *The modifications and additions to infrastructure for the Modification would result in construction employment at the Moolarben Coal Complex.”*

23. The Department’s AR stated that:

“Moolarben Coal’s primary justification for the proposed modifications is to increase the rate of coal recovery and improve the operational efficiency of open cut mining operations across the mine. The proposals also seek to ensure that the predicted on-site water surplus from the approved operations is effectively managed and allows the controlled release of treated water in accordance with the Environment Protection Authority’s (EPA’s) Environmental Protection Licence (EPL) for the mine.”

2. THE DEPARTMENT’S ASSESSMENT OF THE MODIFICATIONS

2.1 Key steps in Department’s assessment of the Modifications

24. The Proponent submitted the Modifications on 31 August 2017, which was accompanied by the Proponent’s EA.

25. The Department’s AR stated that:

“After receiving the modification applications, the Department:

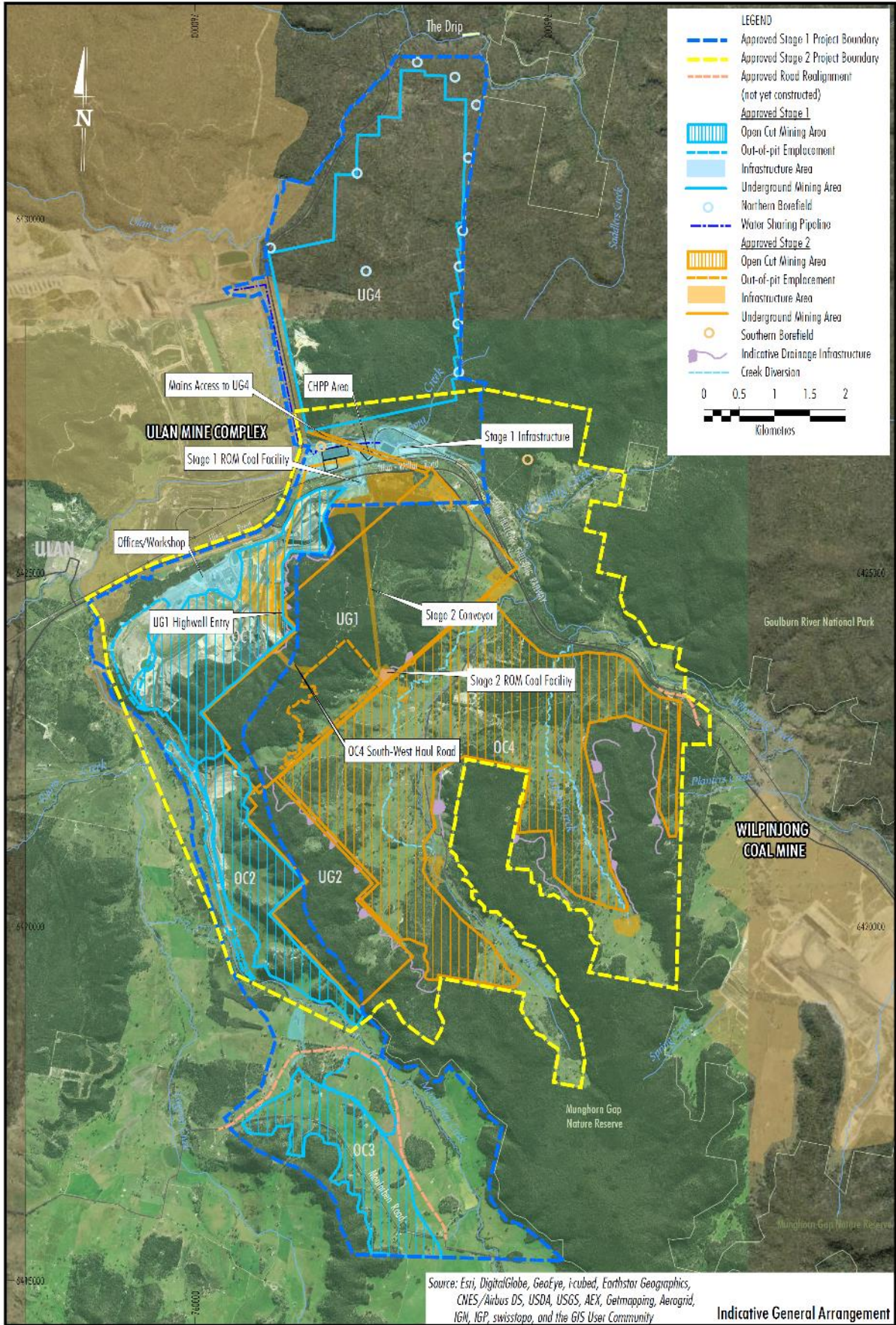
- *exhibited the applications and Environmental Assessment [EA] from 7 November 2017 until 7 December 2017 at Service NSW Centres, at Mid-Western Regional Council and at the Nature Conservation Council;*
- *made the documents available on the Department’s website on 7 November 2017;*
- *visited the Moolarben Coal Mine with government agencies on 29 November 2017; and*
- *met with:*
 - *EPA, OEH and Moolarben Coal on 10 April 2017;*
 - *EPA, Moolarben Coal and Ulan Coal on 26 June 2018; and*
 - *EPA and Moolarben Coal on 13 July 2018.”*

26. The Department’s AR stated that during the exhibition of the Modifications the Department received:

- *five submissions from public authorities including, NSW Environment Protection Authority (EPA), Office of Environment and Heritage (OEH), Department of Industry – Crown Lands, the Division of Resources and Geosciences (DRG) within the Department, and Mid-Western Regional Council (MWRC).*
- *11 submissions from special interest groups; and*
- *58 submissions from the public.*

From a total of 74 submissions, 69 objected to the Modifications which included 58 from the public and 11 from special interest groups.

Figure 1: Approved Moolarben Coal Mine Stage 1 and Stage 2



Source: Department of Planning Assessment Report

27. According to the Department, the matters raised in submissions related to the following issues:
- water
 - brine management;
 - biodiversity;
 - “the drip” agreement;
 - air quality and greenhouse gas emissions;
 - noise;
 - Aboriginal cultural heritage;
 - train movements;
 - final void;
 - socio-economic;
 - cumulative impacts; and
 - compliance.

28. A summary of these issues has been provided in section 5.4 Table 5 of the Department’s AR.

29. The Department’s AR stated that “As the proposed modifications are controlled actions under the Environment Protection and Biodiversity Conservation Act 1999, [EPBC Act] the Department asked the Independent Expert Scientific Committee [IESC] for advice on the acceptability of risks to surface water resources from the proposed additional water discharges into the Goulburn River.”

30. The advice from the IESC stated:

“In response to a request from the regulators, the IESC has detailed in this advice some aspects of the surface water assessment that need to be improved. These include:

- *an adequate geomorphological and ecological impact assessment of the likely increase in mine water discharge into the Goulburn River;*
- *a detailed consideration of cumulative impacts in the Goulburn River given that impacts of the action cannot be considered adequately without the context of water discharges and water quality impacts from other mines;*
- *a sensitivity analysis of the various inputs in the water balance model;*
- *an assessment of whether the action will cause an increase in dissolved metals entering the Goulburn River; and*
- *developing water quality objectives for a greater range of contaminants downstream of the discharge point.*

The proponent’s key mitigation measures for the action are the construction of a water treatment plant and the relocation of the surface water discharge point to a more appropriate location.”

The full IESC advice can be found on the Commission’s website.

31. The Department’s AR also stated that in May 2018 the Proponent provided a formal Response to Submissions (**RtS**) seeking to address issues and concerns raised during the exhibition period. This was also made publicly available by the Department. In its RtS, the Proponent adopted the EPA’s initial recommendation, stating:

“Staged Volume Limits

MCO accepts the following staged increase to volume limits in any variation to EPL 12932:

up to 15 ML/day following commencement of first workings to UG4;

up to 20 ML/day following commencement of secondary extraction in UG4; and

up to 15 ML/day two years after completion of mining in UG4 (subject to site water balance review).”

32. The EPA provided a response to the RtS, dated 18 September 2018, which recommended conditions on discharge limits and electrical conductivity. The Proponent accepted the EPA's conditions, which included:

- “1. *Water discharged from mine water dams at the premises must comply with:*
 - a. *“Site-specific trigger values for metals developed in accordance with the [Australian and New Zealand Guidelines for Fresh and Marine Water Quality] ANZECC methodology, being either ‘default’ 95% species protection trigger levels, or where background metal concentrations naturally exceed the 95% species protection level, ‘site specific’ trigger levels based on the 80th percentile concentration.*
 - b. *An electrical conductivity limit of 685 micro siemens per centimetre and a volumetric discharge limit of 10 ML/day until 31 December 2021;*
 - c. *An electrical conductivity limit of 600 micro siemens per centimetre and a volumetric discharge limit of 15 ML/day between 1 January 2022 and 31 December 2027;*
 - d. *An electrical conductivity limit of 600 micro siemens per centimetre and a volumetric discharge limit of 10 ML/day between 1 January 2028 and 31 December 2038*
 - e. *If the proponent does not support conditions c and d above, the proponent may engage an independent scientific organization to undertake a water quality monitoring program, consistent with ANZECC using a reference point endorsed by the EPA and representative data to further inform the agreed background salinity levels. Once this data is available, further consideration may be given to an alternative salinity limit to be placed on the Environment Protection Licence for the premises by 1 June 2021.”*

(the EPA Approach).

33. The Department's AR identified the following issues as the key impacts associated with the Modifications:

- water (including groundwater, water balance and surface water);
- brine management;
- aquatic ecology;
- biodiversity impacts and offsets; and
- air quality.

34. According to the Department's AR, the Modifications have been assessed in accordance with the relevant provisions of the EP&A Act, including the principles of ecologically sustainable development. The Department's AR included the following statements:

- *“The proposed modifications would allow an increase in the amount of coal mined at the Moolarben Coal Mine each year by 3 million tonnes.”*
- *“...operational efficiencies would allow this additional coal to be mined without changing the existing mine fleet or increase the workforce.”*
- *“...the treatment of water to a higher standard before discharge, and the independent water quality would result in a significant improvement compared with the current situation and ensures that the water quality objectives in the longer term are informed by sufficient baseline data and are derived in accordance with applicable guidelines.”*
- *“...the proposed clearing for the modifications is relatively minor, and that residual impacts can be mitigated through the proposed land-based offset and mine site rehabilitation.”*
- *“...the proposed development would result in a range of benefits for the local and regional economy and is of public benefit.”*
- *“...social and economic benefits for the Mid-Western Regional Council local government area, and the State of NSW, ...would accrue:*
 - *temporary employment generated during the construction of site infrastructure;*
 - *continued direct employment of up to 740 persons at full production; and*

- *increased royalty payments of around \$82 million to the NSW Government over the life of the Moolarben Coal Complex.*

35. The Department's AR concluded that: *"...recommended revisions to the conditions of approval provide a comprehensive, strict and precautionary approach to ensuring the project would continue to comply with performance measures and standards, and that the predicted residual impacts would be effectively avoided, minimised, mitigated and/or compensated."*

3. THE COMMISSION'S MEETINGS AND SITE VISIT

36. As part of its determination of the Modifications, the Commission met with the Department and the Proponent. The Commission also conducted a public meeting and inspected the site accompanied by the Proponent and representatives from two local community groups. Transcripts from these meetings were made publicly available on the Commission's website, as are notes from the site inspection on 12 April 2019.

37. The Commission provided an opportunity for MWRC to address the Commission; however, on 18 March 2019, MWRC advised the Commission that it had no outstanding concerns with the modifications and, thus, did not require a meeting with the Commission.

3.1. Meeting with the Department

38. On 27 March 2019, the Commission met with the Department to discuss the Department's AR and the Modifications.

3.2. Meeting with the Proponent

39. On 27 March 2019, the Commission met with the Proponent to discuss the Department's AR and the Modifications.

3.3. Public Meeting

40. The Commission held a public meeting at the Parklands Resort Conference Centre, 121 Ulan Road, Putta Bucca, near Mudgee, NSW, on 2 April 2019. A list of the 13 speakers who presented to the Commission is available on the Commission's website. A transcript of the public meeting was published on the Commission's website on 4 April 2019. A copy of the material tendered at the public meeting was also made available on the Commission's website on 4 April 2019.

41. Several speakers at the public meeting expressed their objection to the Modifications . A summary of those objections is provided below:

- the updated groundwater model indicates that the assessment of the original model was not adequate as predictions for water inflows have significantly changed;
- salinity levels resulting from the increase inflows would impact the Hunter River and the Hunter River Salinity Trading Scheme (**HRSTS**); and cumulative impacts of salinity loads have not been considered; and
- Scope 3 greenhouse gas emissions have not been adequately addressed.

3.4. Site inspection

42. On 2 April 2019, the Commission inspected the site with the Proponent. The Commission invited local community group representatives to attend the site inspection as independent observers. The following representatives accepted the invitation:

- Beverly Smiles from the Wollar Progress Association; and
- Julia Imrie from the Mudgee District Environment Group.

43. The site inspection commenced at the mining complex car park. The Proponent took the Commission and community group representatives to the areas relevant to the scope of the Modifications and made various stops to understand the physical area, including:
- driving through the proposed area of OC3;
 - stopping at a location to point out the extension of the disturbance boundary for OC3;
 - driving north of the Moolarben Coal site to the proposed location of the discharge point and stepping out to understand the physical area; and
 - driving back through the mine site to the proposed location of the water treatment facility.

3.5. Public Comments

44. The Commission accepted written comments on the Modifications and on the transcripts from the public meeting until 11 April 2019. The Commission received a total of 132 written comments, which were made public on the Commission's website between 3 April and 12 April 2019.

4. ADDITIONAL INFORMATION REQUESTS

45. On 3 April 2019, the Commission sought further information from the Proponent on the differences between the groundwater models, salinity content resulting from the additional water, scope 3 emissions; and the handover status of the natural landmark of the "Drip" to NSW National Parks.
46. On 17 April 2019, the Proponent provided its response to the Commission. This response, which was dated 16 April 2019, was made available on the Commission's website on the same day.
47. On 8 May 2019, the Commission sought further advice from the Department in relation to the limits and total amount of coal that would be extracted as a result of the Modifications. The Department responded on 13 May 2019, stating that the *"...estimated total run-of-mine coal extraction from the project including proposed modifications, is 292.6 million tonnes. This represents an increase of 2.6 million tonnes above the estimated resource for the approved project."*
48. The Department's response also stated that the *"...increase is associated with the minor changes to the open-cut pit limits, as described in the Environmental Assessment documentation."*
49. On 4 June 2019, the Commission sought further clarification from the Proponent in relation to production of brine that would result from the Modifications. The Proponent provided a response on 6 June 2019. The Commission was satisfied with the information.

5. THE COMMISSION'S CONSIDERATION

5.1 Material considered by the Commission

50. In determining these Modifications, the Commission has carefully considered the following material (the **Material**):
- Stage 1 development consents 05_0117 as currently approved;
 - Stage 2 development consents 08_0135 as currently approved;
 - the Proponent's EA and Appendices A-1, for Stage 1 Modification 14 Moolarben Coal Mine Stage 1 Project (05_0117) and the Stage 2 Modification 3 Moolarben Coal Mine Stage 2 Project, dated November 2017;
 - the Proponent's RtS dated May 2018;
 - the IESC Advice, dated 15 December 2017;
 - all public submissions made to the Department in respect of the Modifications

- during the public exhibition of the EA; ;
- all government agencies' submissions made to the Department in respect of the proposed modifications during the public exhibition of the EA ;
- all public and government agencies' comments made to the Department in respect of the Proponent's RtS;
- the Department's AR, dated 6 February 2019, and the proposed draft notice of modifications for Stage 1 05_0117 and Stage 2 08_0135;
- the visual observations made at the site and locality inspection on 2 April 2019;
- oral comments from speakers at the public meeting on 2 April 2019;
- written comments received after the public meeting up to 11 April 2019;
- the Proponent's response dated 16 April 2019, to the Commission's request dated 3 April 2018;
- the Department's response dated 13 May 2019, to the Commission's request dated 8 April 2018;
- the Proponent's further comments dated 30 May 2019; and
- the Proponent's response dated 6 June 2019, to the Commission's request dated 4 June 2019.

5.2 Scope of the Modifications within section 75W of the EP&A Act

Proponent's consideration

51. Table 3 of the Proponent's EA, which has been extracted and is shown on the next page, provides a summary comparison of the approved Project and the Project as it is proposed to be modified.

Department's assessment

52. The Department stated in its AR, "*the current proposed modifications can be characterised as modifications to the current project approvals, as*
- *there would be limited change to the physical extent of the approved mining operations;*
 - *there would be no material change to the existing mining fleet;*
 - *there would be no change to the approved hours of operation or operational mine life;*
 - *there would be no change to the underground coal extraction limits or mine layouts;*
 - *the changes to the existing surface infrastructure would be relatively minor; and*
 - *although open cut coal production rates would increase, this increase would not significantly increase the environmental impacts of the Stage 1 and Stage 2 projects beyond that which has already been assessed and approved (refer to Section 5).*

Consequently, the Department considers the proposed modifications to be within the scope of Section 75W of the EP&A Act."

Commission's findings

53. The Commission has reviewed the content of the Modifications, discussed in paragraph 19, against the Stage 1 Project Approval and Stage 2 Project Approval, (original approved applications), and considers the summary in table 3 as being accurate. On the basis of its review, the Commission agrees the Department's assessment, set out in paragraph 52, that the Modifications are within the scope of Section 75W of the EP&A Act.

Table 3
Summary Comparison of Approved and Modified Moolarben Coal Project

Relevant Approval Component	Moolarben Coal Complex		Moolarben Coal Complex (including the Modification)	
	Stage 1 Project Approval (05_0117)	Stage 2 Project Approval (08_0135)	Stage 1 Project Approval (05_0117)	Stage 2 Project Approval (08_0135)
Operational Mine Life	Mining operations can be carried out until 31 December 2038.		Unchanged.	
Hours of Operation	Mining operations can be carried out 24 hours per day, 7 days per week.		Unchanged.	
Coal Extraction Limits	Up to 8 million tonnes (Mt) of ROM coal can be extracted from the open cut mining operations in any calendar year.	Up to 12 Mt of ROM coal can be extracted from the open cut mining operations in any calendar year.	Up to 10 Mt of ROM coal extracted from the open cut mining operations in any calendar year.	Up to 16 Mt of ROM coal extracted from the open cut mining operations in any calendar year.
	Up to 13 Mt (total) of ROM coal can be extracted from the open cut operations at the Moolarben Coal Complex in any calendar year.		Up to 16 Mt (total) of ROM coal extracted from the open cut operations at the Moolarben Coal Complex in any calendar year.	
Underground Coal Extraction Limits	Up to 8 Mt (total) of ROM coal can be extracted from the underground mining operations at the Moolarben Coal Complex in any calendar year.		Unchanged.	
Coal Processing and Offsite Transport	Up to 13 Mt (total) of ROM coal from the Moolarben Coal Complex can be processed (washed) in any calendar year, except in the year 2017.	The Proponent shall ensure that all coal extracted from the site is sent to the Moolarben Stage 1 mine surface infrastructure area for processing (washing) and/or transport to market.	Up to 16 Mtpa of ROM coal from the Moolarben Coal Complex can be processed (washed) in any calendar year.	Unchanged.
	Up to 13.5 Mt (total) of ROM coal from the Moolarben Coal Complex can be processed (washed) in 2017.			
	Total coal production of 18 Mtpa.			
	All coal is to be transported from the site by rail (average of 7 trains per day and peak of 9 trains per day).		Total coal production of 22 Mtpa.	
			Average of 8 trains per day and peak of 11 trains per day.	
Blasting Frequency Limits	A maximum of 2 blasts per day and 9 blasts per week (averaged over a calendar year) can be carried out at the Moolarben Coal Complex.		Unchanged.	
	Blasting can be carried out on site between 9:00 am and 5:00 pm Monday to Saturday inclusive. No blasting allowed on Sundays, public holidays, or at any other time without written approval of the Secretary.			
Biodiversity Offset Strategy	The Biodiversity Offset Strategy is shown in Appendix 8 of the Project Approval (05_0117).	The Biodiversity Offset Strategy is shown in Appendix 7 of the Project Approval (08_0135).	Updated Biodiversity Offset Strategy to account for additional disturbances as required.	
Site Access	Site access via Ulan Road and Ulan-Wollar Road.		Unchanged.	

Table 3 (Continued)
Summary Comparison of Approved and Modified Moolarben Coal Project

Relevant Approval Component	Moolarben Coal Complex		Moolarben Coal Complex (including the Modification)	
	Stage 1 Project Approval (05_0117)	Stage 2 Project Approval (08_0135)	Stage 1 Project Approval (05_0117)	Stage 2 Project Approval (08_0135)
Water Management Design and Objectives	Design, install and maintain the dams generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries</i> .		Unchanged.	
	Ensure there is sufficient water for all stages of the project in accordance with Condition 29, Schedule 3 of Stage 1 Project Approval (05_0117) and Condition 25, Schedule 3 of Stage 2 Project Approval (08_0135).			
	Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site.			
	Mine water storage infrastructure is designed to store a 50 year average recurrence interval 72 hour storm event.	Mine water storage infrastructure is designed to store a 100 year average recurrence interval 72 hour storm event.		
	On-site storages (including tailings dams, mine infrastructure dams, groundwater storage and treatment dams) are suitably lined to comply with a permeability standard of less than 1×10^{-9} metres per second (m/s).	On-site storages (including tailings dams, mine infrastructure dams, groundwater storage and treatment dams) are suitably lined to comply with a permeability standard of less than 1×10^{-9} m/s.		
	Unless an EPL authorises otherwise, MCO will comply with section 120 of the NSW <i>Protection of the Environment Operations Act, 1997</i> (PoEO Act). (EPL 12932 currently authorises controlled releases of up to 10 megalitres per day [ML/day] to the Goulburn River)	Unchanged. Water treatment facilities to support authorised discharge under EPL water release limits and increase in maximum rate of controlled releases from 10 to 20 ML/day, when required.		
Coal rejects	Co-disposal of coal rejects with waste rock in the open cut voids.		Unchanged.	
Employment	Peak operational workforce of 740 personnel. Average operational workforce of 667 personnel. Peak construction workforce of 250 personnel. Average construction workforce of 120 personnel.		Unchanged.	

5.3 Likely impact of the Modifications

5.3.1 Greenhouse gas emissions - Scope 3

54. The Commission has considered the Material insofar as it relates to potential impacts from the predicted Scope 3 greenhouse gas (**GHG**) emissions.

Comments received

55. The Commission heard concerns from speakers at the public meeting, which were also raised in written comments, regarding the GHG emissions that would be generated as a result of the Project if the Modifications were to be approved. Specific concerns were raised that the Proponent had not appropriately considered Scope 3 emissions generated outside Australia as a result of the Modifications.

Proponent's considerations

56. As part of its EA, the Proponent provided an air quality assessment (**AQA**) prepared by Todoroski Air Sciences Pty Ltd, which assessed the potential impacts of the Modifications and the relevant air quality criteria; and included a GHG inventory which referenced Scope 1, 2 and 3 emissions. In its EA, the Proponent stated:

"The greenhouse gas emissions are categorised into three scopes (Scopes 1, 2 and 3) based on the source of the emissions. Scope 1 emissions encompass direct sources from a project, Scope 2 emissions encompass indirect sources from a project associated with the generation of purchased and consumed electricity, and Scope 3 emissions encompass indirect sources from a project associated with other indirect greenhouse gas emissions, including the downstream combustion of coal (TAS, 2017).

...

Assuming the product coal from the Moolarben Coal Complex is combusted following export, the Scope 3 emissions of this additional 3 Mtpa of coal combustion would be approximately 7.3 Mt of CO₂-e per annum (based on 2017 National Greenhouse Account Factors for bituminous coal).

These Scope 3 emissions would not physically occur in NSW or Australia as product coal would be exported to overseas customers."

57. On 3 April 2019, the Commission sought additional information from the Proponent on the considerations of Scope 3 emissions. In its response, dated 16 April 2019, the Proponent stated:

"The proposed increase in annual production would generally bring forward coal that is already approved to be mined albeit at a reduced rate of production. As noted in the EA, the Modification would only change total life of mine run-of-mine (ROM) coal by about 1%. Therefore, Scope 3 emissions associated with the Moolarben Coal Complex incorporating the Modification are largely the same as those associated with the assessed and approved Moolarben Coal Complex operations (i.e. incorporating the extraction, processing and sale of coal from Stage 1 and Stage 2 Projects up to 31 December 2038)."

58. As to the extent of effects of Scope 3 emissions, the Proponent stated:

"Currently, 95% of Moolarben Coal Complex coal is exported to customers in countries that are signatories of the Paris Agreement (e.g. Japan, South Korea, China, Singapore, Malaysia and India) and therefore emissions inventories would be managed by these countries. The remaining 5% is sold to Coal Traders and MCO has no control on the end user of this coal.

Scope 3 emissions that occur in New South Wales (NSW) (i.e. rail transport) are already occurring and would be accounted in NSW's and Australia's greenhouse gas emissions inventories.

The extent to which Scope 3 emissions from the Moolarben Coal Complex impacts global climate change, and how this would/would not be felt in NSW or Australia, would be proportional to the contribution of these emissions to total global greenhouse gas emissions. The Modification would marginally increase the total life-of-mine open cut coal production by approximately 1% compared to the approved Moolarben Coal Complex. The Scope 3 greenhouse gas emissions from the end use of this minor increase in coal production and end use would be minimal compared to the assessed and approved total greenhouse gas emissions (including Scope 3 emissions from the burning of the coal) for the Moolarben Coal Complex and negligible in the context of global greenhouse gas emissions.”

Department's assessment

59. The Department's AR refers generally to GHG emissions. The Department stated:

“Greenhouse Gas

The updated greenhouse gas emissions assessment shows that increasing the open-cut ROM coal extraction by 3 Mtpa would result in an increase in emissions of 0.038 MtCO₂-e.

The Department notes that the estimated increase in emissions as a result of the modifications is equivalent to 0.029% of the emissions in NSW during 2014 and 0.0069% of the emissions in Australia during 2016.

Moolarben Coal would continue to undertake a range of standard operating procedures to minimise its emissions. The increase in production would not require changes to the existing mining fleet, and the fleet would continue to be regularly maintained. Its emissions would be monitored and reported in accordance with the with the existing Greenhouse Gas Minimisation Plan, which would be updated to incorporate the proposed modifications.

The Department accepts that the GHG emissions predicted to be generated by the proposed modifications are negligible in the state and national context, and that they can be minimised appropriately under the existing Greenhouse Gas Minimisation Plan.”

Commission's findings

60. The Commission notes the concerns raised at the public meeting and in written comments that that the Proponent had not appropriately considered Scope 3 emissions as a result of the Modifications.
61. The Commission notes from paragraph 58 that there will be an increase in all emissions as a result of the Modifications, and that the increase would be minimal compared the Project as currently approved. The Commission further notes from paragraph 59 that the overall increase in GHG emissions (including Scope 3 emissions) generated by the proposed modifications are considered to be negligible in the state and national context.
62. The Commission finds that the increase in GHG emissions is acceptable because:
- additional GHG emissions, including Scope 3 emissions, resulting from the Modifications have been correctly identified and calculated by the Proponent and assessed by the Department as discussed in paragraphs 54, 55, 58 and 57;
 - the Modifications represent a marginal increase to the total life-of-mine GHG emissions compared to the approved Project, as discussed in paragraphs 54, 55, 58 and 57.

5.3.2 Groundwater model update and increased water inflows and salinity

63. The Commission heard from speakers at the public meeting and received written comments raising concerns about:
- the predictions of additional water inflows in the new groundwater model included in the Modifications;
 - the adequacy of the groundwater model; and
 - that salinity levels resulting from the increased inflows would impact on water quality in the Goulburn River and be inconsistent with the HRSTS.
64. Existing conditions of approval provide for the Proponent to update its Groundwater Management Plan, which include validation, re-calibration and re-running of the groundwater model. Notwithstanding the above, the Commission sought further advice from the Proponent on 3 April 2019 in relation to differences between the previous model and the current model that was included for the Modifications, that lead to the increase water inflows.

Proponent's comments

65. As stated in paragraph 32, the Proponent adopted the EPA's recommendation for the EPA Approach on the discharge and electrical conductivity limits, in response to the issues raised by the EPA and public comments. In addition, the Proponent further explained the differences between the models and the reasons for the predicted increase water inflows in its response to the Commission dated 16 April 2019, . The Proponent's response included the following in that regard:

“The Moolarben groundwater model was updated by HydroSimulations (2017) to incorporate up-to-date monitoring data, improved geological understanding and use of best practice numerical modelling software (i.e. MODFLOW-USG). This software did not exist at the time the MODFLOW-SURFACT models were developed for the original Stage 1 and Stage 2 approvals, and provides a significant advancement in groundwater modelling.

The key factors that have resulted in increased predicted mine inflows, particularly when mining in the approved UG4 area commences, includes information that was either not available at the time of the development of the previous groundwater models or information that has been updated following assessment using the previous groundwater models...

...

Other changes to the model are documented in the Modification Environmental Assessment (EA) (e.g. increased production rate at UG1/UG4 resulting from the approved Moolarben Coal Complex UG1 Optimisation Modification).

If the updated information available from factors 1 to 5 above was used to recalibrate the previous model it would likely also predict increased inflows when mining commences in UG4. However, given MODFLOW-USG is recognised as best practice software, and given the significant effort that has been invested to update the Moolarben Coal Complex groundwater model, it is not proposed, nor warranted, to update the now redundant prior model using this new information.”

66. In relation to the potential salinity increase, the Proponent stated the following in its response of 16 April 2019:

*“Controlled releases from the Moolarben Coal Complex are **not** predicted to increase the salinity of the Goulburn River or the Hunter River (i.e. downstream of the proposed relocated discharge point) for the reasons that follow.*

The Modification EA, Response to Submissions and development of the agreed revised salinity limit of 685 microSiemens per centimetre ($\mu\text{S}/\text{cm}$) have considered downstream water quality and the objectives of the Hunter River Salinity Trading Scheme (HRSTS).

Advisian (2017) considered the HRSTS in the Controlled Water Release Impact Assessment for the Goulburn River undertaken for the Modification EA as follows:

“The HRSTS does not apply to discharges from the MCC. Notwithstanding, the proposed increase in discharge would result in negligible impacts to entities discharging under the HRSTS given the salt load from the MCC would represent a negligible proportion of the total salt load in the Hunter River during high flow and flood flow conditions.”

The above assessment by Advisian (2017) was in consideration of the originally proposed discharges of 20 ML/day at 900 $\mu\text{S}/\text{cm}$. The Modification now proposes to reduce MCO’s currently authorised discharge salinity limit from 900 to 685 $\mu\text{S}/\text{cm}$ and controlled releases would remain as per the currently authorised volumetric limit of 10 ML/day for the majority of the mine life. The effect of this would be a reduced salt load (compared to what is currently authorised and what was assessed in the EA) for the majority of the mine life when controlled release volumes are limited to 10 ML/day.

The NSW Environment Protection Authority (2018) describes the “central idea of the [HRSTS] scheme is to only discharge salty water when there is lots of low salt, fresh water in the river.”

Participants in the HRSTS are authorised to discharge water with salinity greater than 900 $\mu\text{S}/\text{cm}$ during “high flow” events (i.e. greater than 1,800 ML/day in the middle Hunter River sector), subject to holding appropriate “credits” and salinity in the Hunter River remaining below the target level of 900 $\mu\text{S}/\text{cm}$.”

Department’s assessment

67. In relation to the updated groundwater model, the Department stated in its AR:

“The predicted increase in groundwater inflow does not relate to any changes associated with the proposed modifications. It is related to updated groundwater modelling, previous changes to the sequence and rate of underground mining, which include a delay to UG4 dewatering operations, and additional inflow from the open cut pit at the nearby Ulan Coal Mine. The increased inflow would result in a surplus of water on the site under certain climatic conditions and operating scenarios, particularly once mining in UG4 commences. The surplus water would be managed in surface storage dams, with excess water treated in a new reverse-osmosis water treatment facility before being discharged to the Goulburn River.”

...

“The updated groundwater model inputs are based on the most up-to-date information available, including many years of groundwater monitoring data from existing mining operations in the region. The model calibration statistics are better than the Australian Groundwater Modelling Guideline values for acceptable model calibration.”

68. As to the increase in salinity and in addition to the recommendation made by the EPA, discussed in paragraph 32, the Department stated in its AR:

“The EPA also recommended a water study to be undertaken by an independent scientific organisation and consistent with the ANZECC Guideline to determine the long-term salinity EC [electrical conductivity] limit for discharges from the Moolarben Coal Mine. Moolarben Coal has committed to undertake the study, which would involve sampling from locations endorsed by the EPA.”

...

“The Department and EPA agree that there is scope for the mine to improve the quality of water it discharges and that treating the water to further reduce its salinity and metals concentrations would have beneficial effects for the Goulburn River. The Department also agrees with EPA that an independent water study would determine the background EC concentration target for the mine to achieve as it increases its discharges over time.”

69. In relation to the EPA Approach, discussed in paragraph 65 above, the Department stated in its AR:

“Both the Department and the EPA have accepted this approach [Approach] to limiting the discharge volumes from the Moolarben Coal Mine and consider that it more realistically reflects the actual discharge requirements from the approved mining operations.

While Moolarben Coal is allowed under its EPL to discharge up to 10 ML/day, no discharges have occurred from the site since 2011. The Department considers that for the majority of the life of the mine, the actual discharge volumes would be less than the existing 10 ML/day discharge limit. During median climatic conditions (ie 50%ile) only 4 ML/day on average would need to be discharged. The Department and EPA accept that the water make would increase once underground mining commences in UG4, however this would only be for a 5 year period, and would result in discharges of less than 11 ML/day under average climatic conditions (compared to the current EPL discharge limit of 10 ML/day).

...

The Department accepts that there needs to be strict controls in place to manage temporary higher volume releases during prolonged wet periods. Consequently, the Department has recommended conditions that reflect the proposed staged discharge volume limits and requires Moolarben to obtain authorisation from the EPA before any additional release volumes above 15 ML/day can be discharged.”

70. As to the impacts on water quality, the Department stated in its AR:

*“Moolarben Coal initially proposed to treat water it proposes to be discharged to a quality that complies with the existing EPL EC concentration limit of 900 $\mu\text{s/cm}$ and other water quality indicators (pH, soil & grease, total suspended solids and turbidity). Moolarben Coal proposed this EC limit as this is the limit currently allowed under the EPL, and it is the limit that Ulan Coal Mine treats its surplus water to before discharging to the Goulburn River diversion (see **Figure 8**).*

The assessment showed that at the proposed maximum discharge of 20 ML/day at 900 $\mu\text{s/cm}$, and together with the discharges from the Ulan Coal Mine, there would be negligible adverse change in downstream water quality when compared to historic water quality recorded in the Goulburn River”

71. As to the recommendations made by the EPA, the Department stated in its AR:

“...the Department has recommended that an independent water quality study to be completed by June 2021 which:

- is undertaken by an independent scientific organisation with suitable water expertise;*
- collects and utilises additional water quality data in the Goulburn River from locations endorsed by the EPA;*
- determines appropriate background salinity and heavy metal levels for the Goulburn River upstream of the project site; and*
- recommends an EC limit for treated water discharges to the Goulburn River when mining is undertaken in UG4 and thereafter.*

The Department has also recommended that:

- all discharges are to meet an EC concentration limit of 685 $\mu\text{s/cm}$ until the end of*

- December 2021; and
- all discharges after the end of December 2021 to meet an EC limit derived by the independent water quality study.

The EPA has reviewed the Department's recommended water quality conditions and does not object to them."

...
 "In line with the EPA's advice in relation to discharge quality, the Department has recommended that the independent water quality study determine the appropriate metals concentrations in accordance with the ANZECC Guidelines and in consultation with the EPA. It is acknowledged that this may include a wider suite of metals and major ions to those proposed by Moolarben Coal."

Commission's findings

- The Commission notes the concerns raised at the public meeting and in written comments in relation to the predictions of additional water inflows, and salinity levels that would impact on water quality in the Goulburn River, as a result of the Modifications.
- The Commission notes that the existing conditions of approval require the validation, re-calibration and re-running of the groundwater model; as discussed in paragraph 64.
- The Commission finds that the increased electrical conductivity (salinity) impacts resulting from the Modifications are acceptable, subject to the Proponent adhering to the recommended conditions of approval for the Modifications; having consideration to the following:
 - the predicted increase in groundwater inflow is not a consequence of any changes associated with the proposed modifications; as discussed in paragraph 67;
 - the Proponent's updated groundwater model is consistent with the Project's existing requirements in the conditions of approval, as discussed in paragraph 73;
 - the Proponent has accepted the EPA Approach required by EPA, as discussed in paragraph 65;
 - the EPA has reviewed the Department's recommended water quality conditions and does not object to them; as discussed in paragraph 71;
 - the Department has recommended that the independent water quality study determine the appropriate metals concentrations and background salinity levels in accordance with the ANZECC Guidelines and in consultation with the EPA, as discussed in paragraph 71; and
 - the EPA has reviewed the Department's recommended water quality conditions and does not object to them; as discussed paragraph 69 and 71.

5.3.3 Brine Impacts and Management

- The Commission heard concerns from speakers at the public meeting, and received written comments raising concerns, relating to:
 - the quality of the high concentration of solution of salt in water (**brine**) management is unknown;
 - disposal of brine into a highly disturbed strata is of high risk; and
 - brine should be disposed in a manner that does not connect back to the environment.

Proponent's comments

- In its EA, the Proponent indicated that there will be a brine discharge rate of 2.5 ML/day. The Proponent stated:

“Brine will be temporarily stored in dedicated brine storage dams prior to disposal. The brine management strategy may include, but is not necessarily limited to, the following disposal options:

- *Disposal via water trucks (i.e. use in haul road dust suppression);*
- *Storage in isolated dams within the OC2 and OC3 mining areas following completion of mining; and*
- *Disposal in underground mining areas following completion of mining.”*

77. The Proponent’s RtS provided additional analysis prepared by Dr Noel Merrick regarding the suitability of underground mine voids for the permanent storage of brine from the water treatment facilities, in response to EPA comments. The analysis stated:

“...MCO’s preference [is] to store brine permanently underground rather than in surface storages, for the following reasons:

- *Suitable storage is available in underground void space to store all brine produced over the life of the Moolarben Coal Complex, removing any requirement for permanent surface storages.*
- *There are no known other users of groundwater in the Ulan Seam.*

78. In addition, the Proponent’s RtS stated:

“Brine generated from the treatment process would be diluted with mine water and used for dust suppression on haul roads, active mining areas and coal stockpile areas. Any runoff from dust suppression would be recaptured in the mine water dam catchments of the water management system. Residual brine would be:

- *temporarily stored in dedicated by-product storage dams, or other mine water storages (e.g. OC2 and OC3 mine water dams following the completion of mining in these areas);*
- *reticulated to mining or waste emplacement areas draining to internal catchments with any runoff recaptured in the mine water management system; and/or*
- *evaporated in dams or via other evaporative techniques.*

Once void space is available in the underground workings (i.e. down gradient of longwall mining) brine generated from the treatment process would be permanently stored underground within the coal seam aquifer.

The estimated annual volume of brine generated under 10th percentile (wet) and 50th percentile climatic scenarios is shown on the Graph 4, below.

If brine accumulation during the period prior to permanent storage in the UG4 void exceeds the currently planned storage capacity, then additional temporary storage capacity will be constructed as required. For example, additional storages would be constructed in approved disturbance areas associated with open pits. Any additional temporary storages would be constructed consistent with existing mine water dams.”

79. On 24 August 2018, the Proponent provided a response to an additional information request from the EPA on the Proponent’s RtS. The response stated:

*“It is noted the reduction in proposed controlled release volume limits **[as originally proposed by the EPA]** would also result in reduced brine generation over the life of the mine.”*

80. The response also provided a further additional analysis by Dr Noel Merrick *“in consideration of the reduced brine to be produced for the reduced controlled release volume limits...”* The analysis noted the proposed reduction in controlled release salinity limit of 685 µS/cm and the proposed reduction in volume of water to be released from the 20 ML/day previously assessed to 10 ML/day (except during UG4 [15 ML/day] or following periods of prolonged wet weather). The analysis stated:

- compared to long-term storage of brine at the surface, permanent underground storage of brine in the UG4 void “...is the superior option for operational, economic and environmental reasons (e.g. it avoids the need to build and maintain additional dams and eliminates the risk of uncontrolled spills to surface water following extreme weather events);”
- “Any salt that could migrate from the UG4 void following recovery would be at a salinity significantly lower than brine, would be subject to significant dilution from groundwater in the surrounding and overlying strata and, as such, would not significantly change the quality of the surrounding groundwater;” and
- “No change to solute concentrations at sensitive receptors (i.e. significant creeks and rivers), dependent ecosystems, significant sites or water supply works due to brine storage in the UG4 void is predicted for more than 200 years.”

81. The further additional analysis overall concluded:

- “...the potential impact of brine storage in the UG4 void to the quality of groundwater would be less than what was previously assessed (i.e. as per previous assessment, there is expected to be an insignificant impact to groundwater quality);”
- “The proposed reduction in the volume of controlled release water would reduce the quantity of water required to be treated, with an associated reduction in brine production;” and
- “As a result, the potential impact of brine storage in the UG4 void would be less than what has previously been assessed (i.e. there is expected to be an insignificant impact to groundwater quality).”

Department’s assessment

82. In relation to brine management, the Department referenced in its AR to the Proponent’s comments, set out in paragraph 78 above, that most of the brine from the water treatment process would be “...managed at the surface by diluting it with stored water and using it for dust suppression across the site;” and that “...a small residual volume of brine is likely to require long term storage in the underground workings.”
83. In response to concerns about the potential impacts of using brine water for dust suppression, the Department stated in its AR that the Proponent confirmed that “...brine water would only be used on active mining areas where runoff would be recaptured in the water management system.”
84. The Department’s AR also stated that “...the potential impact of brine storage in UG4 void to the quality of groundwater would be less than what was previously assessed (i.e. insignificant impact to groundwater);” and that the impacts of “...molecular diffusion of salts in the brine...would be negligible compared to the macro transport mechanisms that were considered in the original analysis.”
85. The Department concluded in its AR that the brine management “...would not significantly impact groundwater resources...;” and that “underground storage of brine represents the lowest environmental risk...” because:
- “...brine stored at the surface would not leach to surface water...” because the new brine storage dams “...would be designed to meet EPA’s design criteria;”
 - “...brine would be diluted with the much larger volume of saline groundwater in the surrounding coal seam aquifers...;”
 - “...it would avoid the need to build and maintain additional brine storage dams...;” and
 - “...it would eliminate the risk of uncontrolled discharge during extreme climatic events.”

86. In relation to the management of brine, the Department stated in its AR:

“To describe the disposal and storage options, and to manage unforeseen impacts, in accordance with EPA’s recommendation, the Department has recommended that Moolarben Coal prepares a Brine Management Plan prior to operating the water treatment facility. The plan would detail the methods that would be used to manage brine; the proposed brine storage locations and the volumes of brine that would be managed at each location; details the measures that would be implemented to minimise impacts from the storage of brine at the surface, and the transfer and disposal of brine in underground workings.”

Commission’s findings

87. The Commission notes the concerns raised at the public meeting and in written comments in relation to the quality and disposal of the brine, as a result of the Modifications.

88. The Commission finds that the potential brine impacts to surface and groundwater quality as a result of the Modification are acceptable, having consideration to the following:

- the Approach in the reduction in proposed controlled release volume limits including the salinity limit of 685 $\mu\text{S}/\text{cm}$ and the proposed reduction in volume of water to be released from the 20 ML/day, to 10 ML/day would result in reduced brine generation over the life of the mine when compared to the original EA, as discussed in paragraphs 79 - 81
- potential impact on groundwater quality, would be less than what was proposed in the original EA and represents a low environmental risk; as discussed in paragraphs 79 - 81.; and
- the Proponent’s mitigation measures for potential brine impacts would be included in the Brine Management Plan, which the Department has included as a condition of consent. This is consistent with the EPA’s recommendations, as discussed in paragraph 84.

5.3.4 Other matters

89. The Commission notes that some concerns raised at the public meeting are outside the scope of the Modification. The Commission has nonetheless considered these concerns in the sections below.

“The Drip” handover

90. The Commission heard concerns from speakers at the public meeting and received written comments enquiring on the status of “The Drip” handover to NSW National Parks.

91. In response to the Commission’s request, dated 3 April 2019, the Proponent stated in its response, dated 16 April 2019:

“Land encompassing the “Drip” and the “Corner Gorges” (the Drip land) was handed over to the NSW Government in March 2018 with the land title now in the name of the Minister Administering the National Parks and Wildlife Act 1974.

MCO will also be handing over additional land surrounding the Drip land to the NSW Government, and both parties continue to work collaboratively to expedite the finalisation of the handover of this additional land.”

92. On the basis of the Proponent’s response, the Commission finds that the Proponent has handed over the Drip land to NSW National Parks. Further enquiries about the

status of the handover, should be directed to the Proponent and/or NSW National Parks.

5.3.5 Objects of the EP&A Act and Public Interest

93. In determining the public interest merits of the Modifications, the Commission has had regard to the objects of the EP&A Act.

Proponent's consideration

94. In its EA, the Proponent states

"The Modification is considered to be generally consistent with the objects of the EP&A Act, because it is a modification which:

- incorporates measures for the management and conservation of natural resources...;*
- would enable more efficient recovery of open cut coal and the extraction of additional coal reserves with no material change to potential environmental impacts (when considering the implementation of proposed environmental management measures);*
- would result in no significant impact on threatened species, their population and ecological communities or their habitats;*
- allows continued development of the State's mineral resources (i.e. coal resources) in a manner that minimises environmental impacts through the implementation of the Moolarben Coal Complex Environmental Management Strategy ... and other measures ...; and*
- allows public involvement and participation through consultation activities ... , which would be ongoing following the public exhibition of this EA document and DPE assessment of the Modification in accordance with the requirements of the EP&A Act."*

Department's assessment

95. The Department states in its AR: *"Based on its assessment, the Department considers that the proposed modification requests are in the public interest and should be approved;"* and *"The Department considers that the project, if undertaken in accordance with the recommended conditions of consent, would be consistent with the principles of ESD."*

96. In relation to threatened species and ecological communities, the Department stated in its AR:

"The Department notes that:

- Ecological Australia, Moolarben Coal Mine's ecological consultant, assessed the significance of impacts on threatened species and concluded that there would be no significant impact on threatened species, including MNES;*
- the area of net clearance (27 ha) is relatively minor and confined to incremental clearing along the approved edge of the open cut pit area, compared to the wider habitat distribution of the potentially affected species and communities surrounding the project area;*
- native woodland/forest would be progressively re-established on rehabilitated areas; and*
- Moolarben Coal's supplementary land-based Biodiversity Offset Strategy (BOS), would largely compensate any residual impacts (see below), with mine site rehabilitation proposed to contribute 28% of total ecosystem impact credits.*

The Department considers that the proposed impacts are acceptable, subject to the identified avoidance, mitigation and offsetting measures, including the relinquishment

of the equivalent vegetation type and quality of land which was previously approved for clearing would further avoid impact to native vegetation.”

97. In relation to Cultural and Historic Heritage, the Department stated in its AR:

“Cultural and Historic Heritage:

- OEH did not object to the proposed modifications based on impacts to Aboriginal cultural heritage.*
- Archaeological surveys and an Aboriginal Cultural Heritage Assessment was undertaken for the areas related to the proposed changes to the pits in consultation with registered Aboriginal parties.*
- The 9 new sites identified in the additional disturbance areas are not considered to be scientifically or aesthetically significant. Notwithstanding, the Department acknowledges that these sites have significance to the Aboriginal community.*
- However only 2 of these sites would be impacted, and the Department considers that they would be salvaged prior to any disturbance in accordance with procedures and protocols described in the approved Heritage Management Plan for the mine, which would be updated to incorporate the new sites.*
- The Department considers that in context, the additional impacts to cultural heritage are not significant. Considerable conservation areas are located near the mine, including the Munghorn Gap Nature Reserve and the Goulburn River National Park, which contain a greater amount of similar and representative heritage evidence to that identified within the modification areas.*
- There were no historic heritage items identified within the modification areas.*
- The Department considers that the proposed modifications would not have a significant impact on the Aboriginal cultural heritage values of the locality or region, and notes that Moolarben Coal would be required to update the existing approved Heritage Management Plan to incorporate the recommended management requirements for the additional Aboriginal sites identified.”*

98. In relation to the proposed water treatment facility, the Department stated in its AR:

“Moolarben Coal proposes to design its water treatment facility design to meet ANZECC trigger levels for metals concentrations at the point of release. The EPA supports this commitment and requested that appropriate trigger levels are better defined by further review and analysis of background surface water quality monitoring data.

The ANZECC Guideline provides that trigger levels for metals should be based on either a “default” 95% species protection trigger levels, or where metal concentrations in the Goulburn River naturally exceed the 95% species protection level, “site-specific” trigger levels would be developed based on the 80th percentile concentration of historic monitoring data.

The proposed design criteria for metal concentrations are consistent with the ANZECC Guideline “default” trigger values, with the exception of aluminium (where the site-specific 80th percentile value is greater than the default value).

99. In relation to the amenity of the built environment, the Department stated in its AR:

“The modifications would not result in materially increased dust levels to those already approved and the impacts can be managed appropriately under the existing conditions of the approvals. However, the contemporary 2016 standards for PM2.5 and PM10 impacts provided in the EPA’s Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales, 2016 have been included in the conditions of approval for both stages of the mine. The contemporary standards tighten the regulation of ambient air quality impacts.

The Department's assessment also considered operational noise, rail noise, blasting, Aboriginal cultural heritage, visual, traffic, and socio-economics. In general, the proposed modifications would not significantly increase these impacts, and the existing conditions of the approvals would effectively manage and minimise any residual impacts to achieve an acceptable level of environmental performance. "

Commission's consideration

100. Under section 5.5 of the EP&A Act, the determining authority must take into account the objects in section 1.3 of the EP&A Act, applicable to the Modifications. These are:
- a) 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,*
 - b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
 - c) to promote the orderly and economic use and development of land,*
 - e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
 - f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*
 - i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State, and*
 - j) to provide increased opportunity for community participation in environmental planning and assessment.*
101. The Commission finds that the Modifications, are generally consistent with the objects of the EP&A Act, set out in paragraph 100 above. The Modifications:
- meet object (a) of the EP&A Act because they would result in a range of benefits for the local and regional economy and would continue to accrue social and economic benefits for the Mid-Western Regional Council local government area, and the State of NSW including through:
 - temporary employment during the construction of site infrastructure;
 - continued direct employment of up to 740 persons at full production; and
 - additional royalty payments of around \$82 million to the NSW Government over the life of the Moolarben Coal Complex; as discussed in paragraph 34;
 - meet object (b) of the EP&A Act; through:
 - operational efficiencies with a relative minor vegetation clearing, improved management of water and control of discharges; and the inclusion of the Approved Methods 2016 for PM 2.5 and PM10 in the recommended conditions of approval; as discussed in paragraph 103 below;
 - meet object (c) of the EP&A Act because it would allow an increase in the combined amount of ROM coal mined each year by 3 million tonnes without changing the existing mine fleet or increase the workforce; as discussed in paragraph 34;
 - meet object (e) of the EP&A Act because:
 - the project proposes avoidance, mitigation and offsetting measures so as to avoid further impact to native vegetation, as discussed in paragraph 96;
 - the Proponent's has demonstrated a commitment to design the proposed water treatment facility to meet ANZECC trigger levels for metals concentrations at the point of discharge as discussed in paragraph 98, which the EPA supports;
 - the new brine storage dams would be designed to meet EPA's design criteria and the Department has recommended that the Proponent prepares a Brine Management Plan prior to operating the water treatment facility, as discussed in paragraph 98; and

- although the modifications would not result in significantly increased dust levels to those already approved, the contemporary 2016 standards for PM_{2.5} and PM₁₀ impacts have been included in the conditions of approval for the Modifications; as discussed in paragraph 99;
 - meet object (f) of the EP&A Act because:
 - two sites of significance to the Aboriginal community would be salvaged prior to any disturbance, and the Proponent is required to update the existing approved Heritage Management Plan to incorporate the recommended management requirements for the additional Aboriginal sites identified, as discussed in paragraph 97;
 - meet object (i) of the EP&A Act because:
 - the Department has assessed the Modifications in consultation with the relevant Council, and given consideration to the issues raised by the Community and other Government agencies, during the exhibition period, as discussed in paragraphs 25 to 26;
 - meet object (j) of the EP&A Act because:
 - the Department publicly exhibited the Modifications, as discussed in paragraph 25.
102. A relevant object of the EP&A Act to the Modifications, as outlined in paragraph 100, is the facilitation of ESD. The Commission notes that section 6(2) of the *Protection of the Environment Administration Act 1991* (the **POEA Act**) 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:
- (a) the precautionary principle;
 - (b) inter-generational equity;
 - (c) conservation of biological diversity and ecological integrity; and
 - (d) improved valuation, pricing and incentive mechanisms.
103. The Commission finds that the Modifications, are consistent with the ESD principles because the Commission acknowledges that the Modifications, if approved would have:
- operational efficiencies that would allow for an increase in the combined amount of annual ROM coal mined at the site by 3 million tonnes with a relative minor vegetation clearing, and without changing the existing mine fleet or increase the workforce to which residual impacts can be mitigated through the proposed land-based offset and mine site rehabilitation; as discussed in paragraph 34;
 - management of water, including treatment to reduce salinity below approved levels and improved control of the discharges; as discussed in paragraph 65;
 - a requirement for a water study to be undertaken by an independent scientific organisation and consistent with the ANZECC Guideline to determine the long-term salinity EC limit for discharges from the Moolarben Coal Mine; as discussed in paragraph 98;
 - a requirement for the preparation of a Brine Management Plan, in consultation with EPA; as discussed in paragraph 98; and
 - the inclusion of the Approved Methods 2016 for PM_{2.5} and PM₁₀ in the recommended conditions of consent; as discussed in paragraph 99.
104. On balance and because of the matters discussed in paragraphs 101 to 103, the Commission finds that the Modifications are in the public interest.

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

105. The views of the community were expressed through:
- public submissions and comments received (as part of exhibition, during and after the public meeting; and as part of the Commission's determination process) as discussed in paragraphs 42 - 44, 55, 60, 63, 72, 75, 87, 90, and 104.
106. The Commission carefully considered all submissions and comments in making the findings on the issues set out in **section 5** above.

7. DETERMINATION

107. The Commission has carefully considered the Material before it, as set out in paragraph 50 of **section 5** above.
108. The Commission has also considered the matters for consideration specified by the EP&A Act, including section 75W of the EP&A Act and the matters it requires the Commission to consider, as discussed in paragraph 50.
109. From the Material, the Commission finds that the Modifications should be approved subject to the conditions of approval, because:
- the increase in GHG emissions are acceptable as discussed in paragraph 62;
 - the electrical conductivity (salinity) impacts resulting from the Modifications are acceptable, subject to the Proponent adhering to the conditions of consent; as discussed in paragraph 74;
 - the potential brine impacts to surface and groundwater quality as a result of the Modification are acceptable, as discussed in paragraph 88;
 - the Modifications, are not inconsistent with the ESD principles; as discussed in paragraph 103;
 - the Modifications, are in the public interest; as discussed in paragraph 104;
 - the Modifications are within the scope of Section 75W of the EP&A Act; as discussed in paragraph 52; and
 - the Modifications, are generally consistent with the objects of the EP&A Act, as discussed in paragraph 101.
110. The Commission has determined that the Modifications should be approved subject to conditions. These conditions are designed to:
- prevent, minimise and/or offset adverse social and environmental impacts;
 - set standards and performance measures for acceptable environmental performance;
 - require regular monitoring and reporting; and
 - provide for the ongoing environmental management of the development.
111. The reasons for this Decision are given in this Statement of Reasons for Decision dated 19 June 2019.



Gordon Kirkby (Chair)
Commission Member



Prof. Chris Fell
Commission Member