

Wongawilli Modification 2 – North West Mains Development

Modification Assessment (MP 09_0161 Mod 2)

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Cover image: *View of coal storage loading bins, Wongawilli Colliery*

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Executive Summary

Wongawilli Colliery is an existing underground coal mine located around 14 kilometres (km) south-west of Wollongong on Dharawal land in the Southern Coalfield of NSW.

Wongawilli Colliery operates under development consent MP 09_0161, which permits the extraction of two million tonnes of coal per annum (Mtpa) from six longwall panels until December 2020 and the development of main headings to the northwest (first workings only). Mining at the site ceased in 2019 and the mine operators, Wollongong Coal Limited (WCL), committed to no longer undertake mining via longwall extraction methods. The colliery has been in care and maintenance since that time.

Proposed modification

The proposed modification seeks to extend the life of Wongawilli Colliery by five years to enable continued first workings. No longwall mining is proposed. The Department publicly exhibited the Modification Report and received 29 submissions from the general public and 4 from special interest groups. Of these, 30 submissions objected to the proposed modification. The Department also received advice from 13 government agencies and a submission from Wollongong City Council.

The key concerns raised were the potential impact on Lake Avon and the drinking water catchment, greenhouse gas emissions, and concerns regarding the potential for future mining applications.

Evaluation

The Department considers that WCL has demonstrated that the first workings-only mine design presents a low risk of impact to Lake Avon and the drinking water catchment. WCL has committed to implement the recommendations of WaterNSW, Dams Safety NSW and the Department's Water Group, and these agencies have no residual concerns. The Department has also recommended a condition requiring the applicant to prepare a Dam Safety Management Plan (prior to mining within 150 metres of Lake Avon) and a revised Water Management Plan, both in consultation with the relevant agencies.

The Department acknowledges that the proposed modification would result in additional amenity impacts compared to the period since the mine was placed into care and maintenance in 2019. However, the Department notes that WCL has committed to relocating some processing infrastructure underground, revised noise criteria to reflect reduced noise levels, restricting various activities to day-time only, and reducing daily train movements. Consequently, the proposed modification would result in reduced amenity impacts on the local community compared to those of the approved operations.

The proposed modification would result in direct and indirect greenhouse gas emissions, primarily from the mining of coal. The Department has recommended a condition requiring WCL to prepare a Sustainability and Emission Reduction Strategy, which includes the requirement to reduce or offset emissions by 4% each year over the extended life of the project. The Department considers that the proposed modification would not significantly increase greenhouse gas emissions in NSW or constrain the ability to achieve the target of a 50% reduction in emissions by 2030.

The Department also notes that the proposed modification would result in the employment of 150 workers for five years and raise up to \$3.7 million in additional royalties (current dollars). Further, the modification would enable completion of the approved main headings, and facilitate access to coal reserves within the north-western portion of the mining lease. Importantly, any future mining of that coal would need to be subject to a separate application and comprehensive merits-based assessment.

Overall, the Department considers that there would not be any additional significant impacts to the environment or surrounding community from those previously assessed and approved for the project. On balance, the Department considers that the proposed modification can be carried out in an environmentally sustainable manner and should be approved, subject to revised conditions.

RECOMMENDATION

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1 Introduction

1.1 Background

Wongawilli Colliery is an underground coal mine located around 14 kilometres (km) south-west of Wollongong on Dharawal land in the Southern Coalfield of NSW, within the Wollongong and Wingecarribee local government areas (LGAs) (see **Figure 1**).

The project is located within the Lake Avon reservoir catchment area which is part of the Sydney drinking water catchment. The Colliery is owned and operated by Wollongong Coal Limited (WCL) and primarily produces metallurgical coal for steel production.

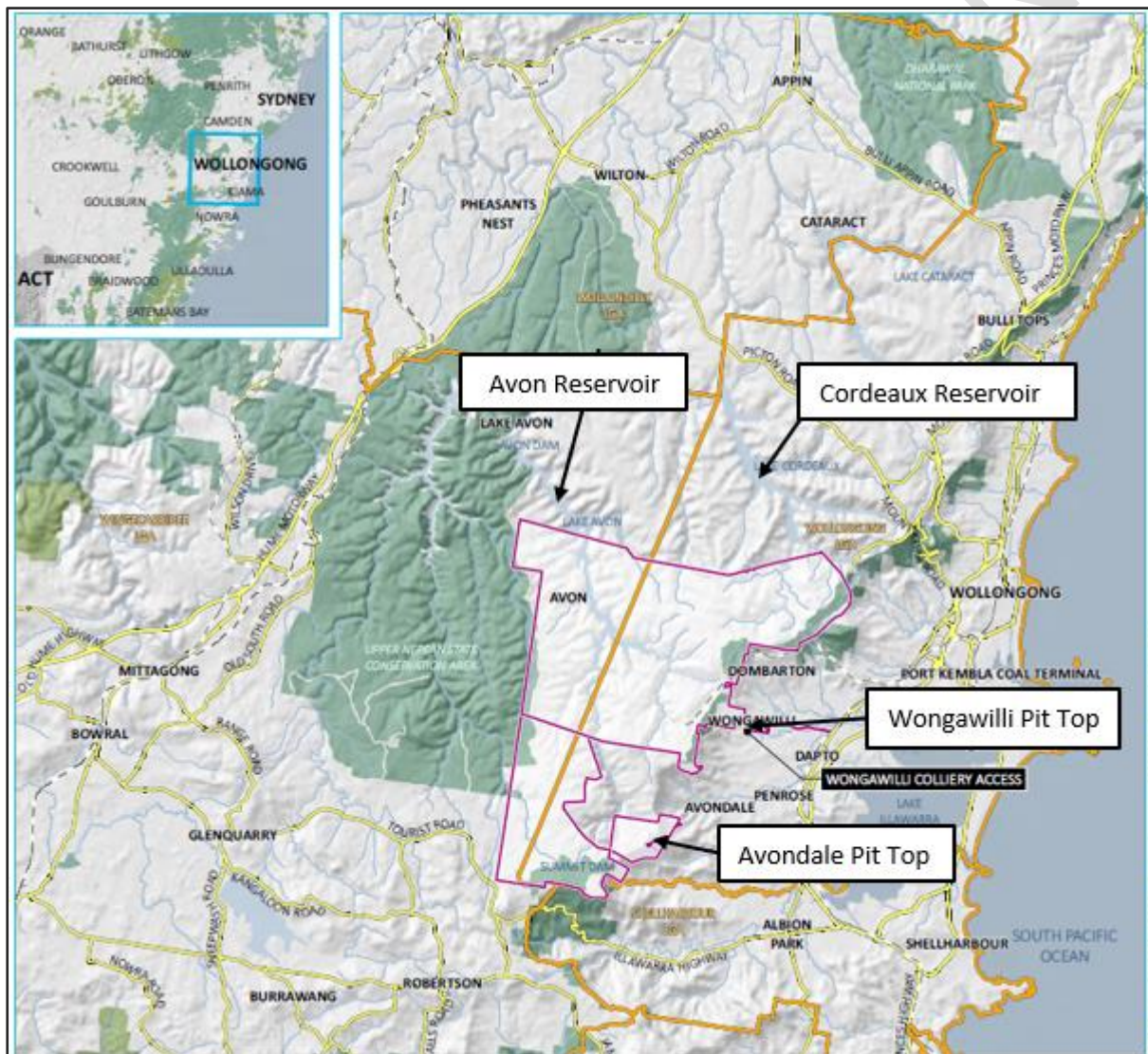


Figure 1 | Wongawilli Colliery regional context

1.2 Consent

In 2011, the then Planning Assessment Commission (the Commission) approved a major project (MP 09_0161) for continuation of mining at Wongawilli under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The consent allowed the extraction of two million tonnes per annum (Mtpa) from six longwall panels in the Nebo Area until December 2015. It also allowed the development of first workings main headings in a separate area of the mine, referred to as the North West Mains Development (NWMD) (see **Figure 2**).

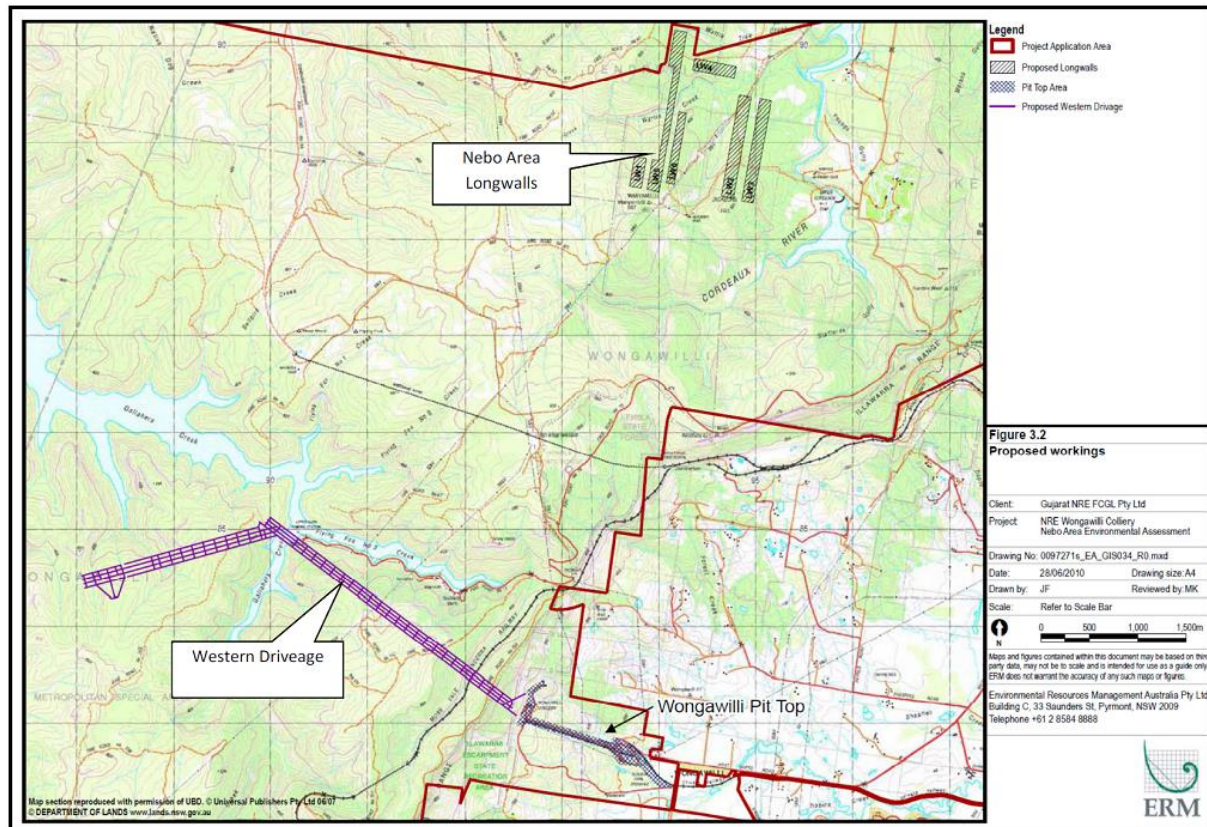


Figure 2 | 2011 Approval longwall panels and Western Driveage

In 2015, the Commission approved a modification (MP 09_0161 Mod 1) under Section 75W of the EP&A Act, permitting approved mining in the Nebo Area and NWMD to continue for a further 5 years, until December 2020.

Mining at the colliery ceased in 2019 and the site is currently in care and maintenance.

Prior to going into care and maintenance in 2019, approximately 500 metres of the approved 4,990 m long NWMD had been developed, and approximately 2.66 million tonnes of the approved 3.3 million tonnes of coal had been extracted from the Nebo Project Area longwall panels.

2 Proposed modification

The proposed modification seeks to extend the life of Wongawilli Colliery by five years (from the date of this modification application) to enable continued development of the NWMD (first workings only).

The modification is described in detail in the Modification Report (**Appendix A1**) and additional information (**Appendix A3**) and is summarised below in **Table 1** and shown in **Figure 3**.

Table 1 | Proposed modification

Component	Approved project	Proposed modification	Change
Coal production	2 million tonnes per annum	486,000 tonnes over 5 years	Reduction in annual coal production
Mine life	Until 31 December 2020	Until 30 June 2027	Extension of five years
Mining method	Longwall and first workings	First workings	No longwall mining
NWMD workings	Four 5.5 m wide and 3.6 m high headings, roadways and associated cut-throughs, around 4,990 metres in length. Access from existing mine portals.	Four 5.5 m wide and 2.4 m high headings, roadways and associated cut-throughs, around 7,890 m in length. Access from existing mine portals and from existing Wongawilli Shaft 1.	Extension of existing workings by around 1,300 m to the north west and around 1,600 m to the north east Reduced cutting height
Depth of mining below Lake Avon	60 m at approved NWMD crossing point (refer to Figure 3)	<ul style="list-style-type: none"> 60 m at approved NWMD crossing point 113 m at the second proposed crossing point 134 m at the third proposed crossing point 	Two additional crossings below Lake Avon at increased depth
Surface facilities	Refer to Figure 4 and Figure 5	<ul style="list-style-type: none"> Relocation of crusher, sizer and screen underground New 60 m conveyor section and minor modifications to existing conveyor at upper pit top New coal storage bin at upper pit top Extension of existing lower pit top noise wall by 100 m Use of existing Portals W9 and W10 for mine access 	
Transport	<ul style="list-style-type: none"> 8 movements a day 3-4 movements/night. 	<ul style="list-style-type: none"> 4 movements a day No night movements. 	Reduced day movements and no night movements.
Hours of operation	24 hours per day, seven days per week Coal handling and train loading unloading: <ul style="list-style-type: none"> 7 am to 6 pm Mon to Fri 8 am to 4 pm Saturday. 	24 hours per day, seven days per week Restriction of all activities at the lower pit top to: <ul style="list-style-type: none"> 7 am to 6 pm Mon to Fri 8 am to 4 pm Saturday. 	Additional restrictions on surface activities limiting operation to daytime period only
Workforce	Up to 300	Up to 150	Reduction of 150

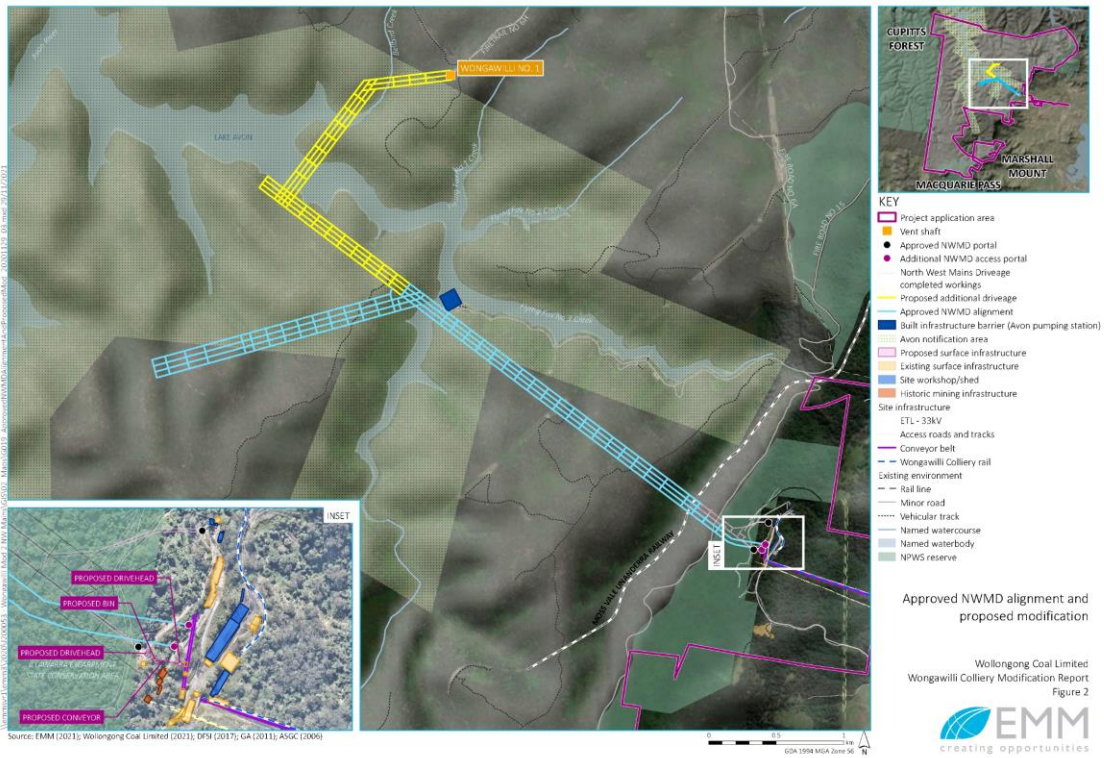


Figure 3 | Proposed modification – overview and North West Mains Development

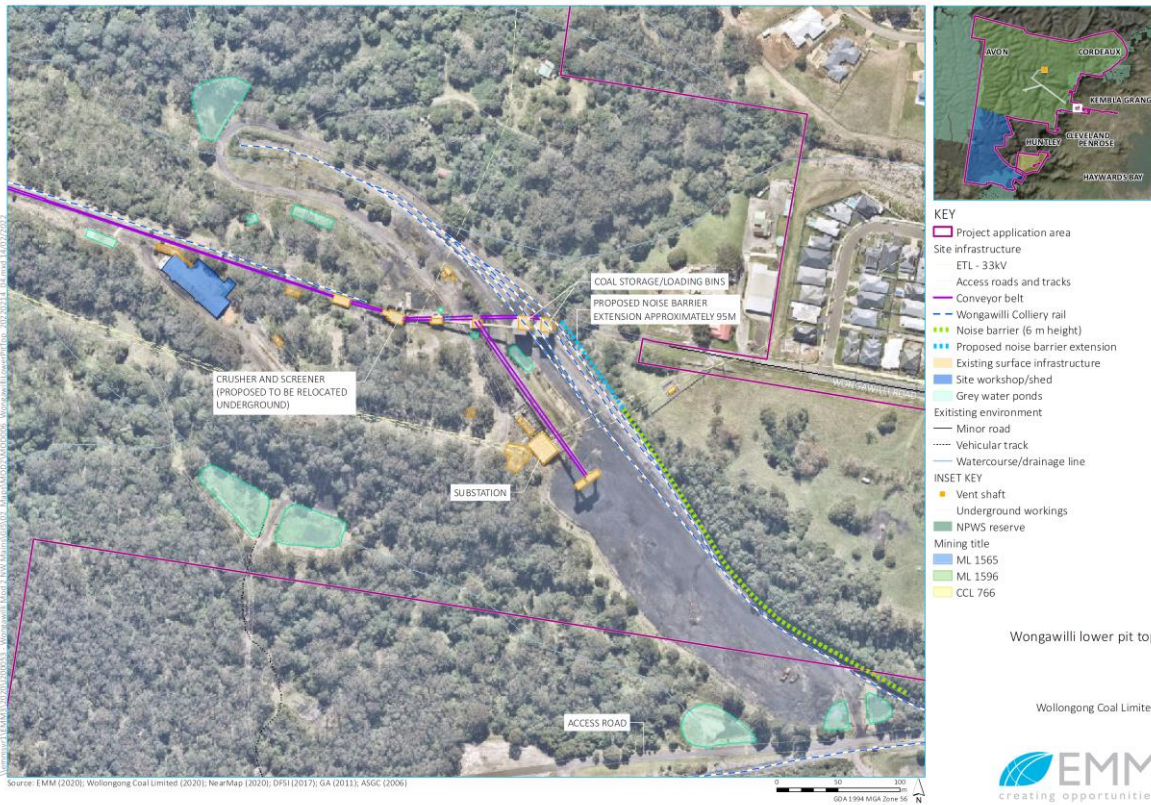


Figure 4 | Proposed modification – surface infrastructure (lower pit top)



Source: EMM (2020); WCL (2020); DFSI (2017); GA (2011); ASGC (2006)

KEY

- | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> Project application area Approved NWMD portal Additional NWMD access portal | <ul style="list-style-type: none"> Proposed surface infrastructure Existing surface infrastructure Existing site workshop/shed Historic mining infrastructure Existing environment Minor road Watercourse/drainage line NPWS reserve | <p>PROJECT APPLICATION AREA INSET KEY</p> <ul style="list-style-type: none"> Vent shaft Underground workings <p>Mining title</p> <ul style="list-style-type: none"> ML 1565 ML 1596 CCL 766 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

0 50 100
m
GDA 1994 MGA Zone 56

Wongawilli upper pit top

Wollongong Coal Limited
Modification assessment report
Figure 3.4

Figure 5 | Proposed modification – surface infrastructure (upper pit top)

3 Strategic context

3.1 Site history

The Colliery is comprised of the former Elouera, Avondale and Huntley collieries. Mining has been undertaken in the Wongawilli area since 1912. Until 2011, the Colliery operated under a “continuing use” rights provision, which allowed the extraction of up to 2 million tonnes of coal a year (Mtpa) from five longwall panels in the Old Elouera area, in accordance with an approved Subsidence Management Plan (see **Figure 6**). The continuing rights also allowed extracted coal to be processed at the Wongawilli Pit Top and railed to the Port Kembla Coal Terminal for export.

3.2 NSW Government’s Strategic Statement on Coal Exploration and Mining in NSW

The NSW Government’s Strategic Statement on Coal Exploration and Mining in NSW (the Statement) notes that in the short to medium term, coal mining for export will continue to have an important role to play in NSW. The Statement identifies the ongoing importance of metallurgical coal in the manufacture of steel as there are currently limited practical substitutes available at a commercial scale.

3.3 Greenhouse gas emissions

The NSW Government’s objective is to achieve net zero emissions by 2050, consistent with the target of the Australian Government outlined in *Australia’s Long Term Emissions Reduction Plan*. The *Net Zero Plan Stage 1: 2020–2030(2020)* sets out how the NSW Government will deliver on this objective over the next decade. In the *Net Zero: Stage 1:2020-2030 Implementation Update (2021)*, the NSW Government committed to reducing NSW’s emissions by between 47-52% compared to 2005 levels by 2030, which is expected to be achieved through current policy settings.

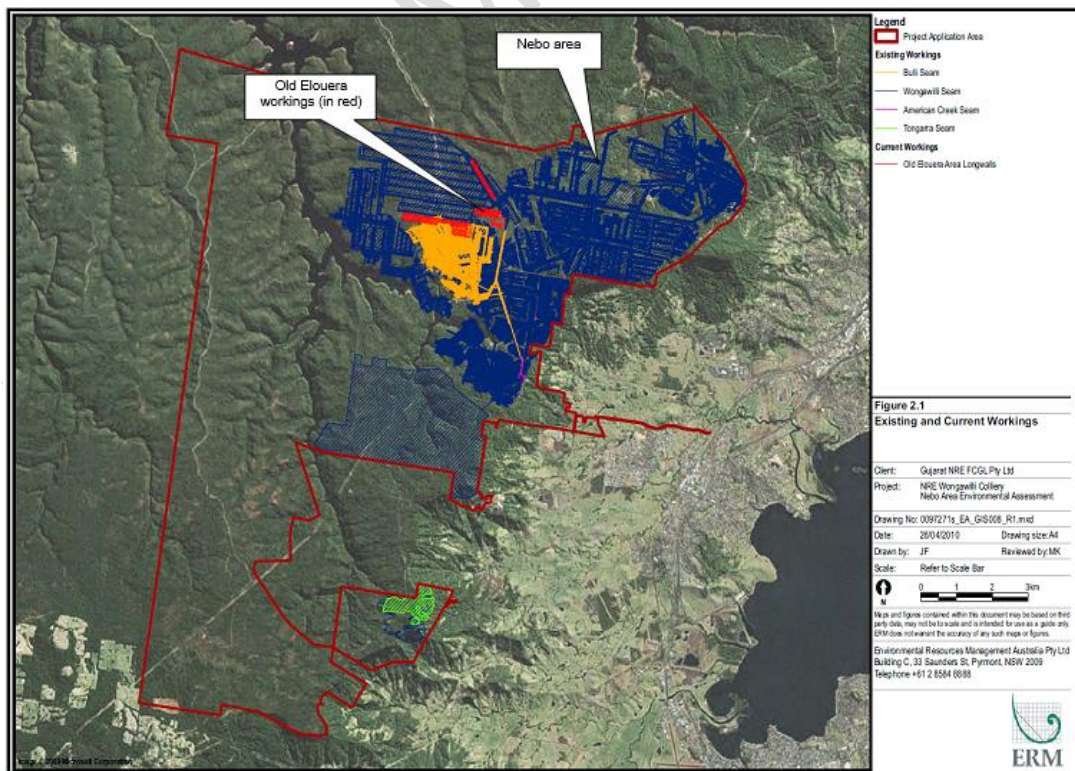


Figure 6 | Old Elouera Workings

4 Statutory context

4.1 Transition to State significant development

MP 09_0161 was approved under the now repealed Part 3A of the EP&A Act. Under clause 6 of Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*, the project was transitioned to State Significant Development (SSD) by order that took effect by publication in the NSW Government Gazette on 17 August 2018.

4.2 Scope of modifications

This application seeks to modify MP 09_0161 in accordance with Section 4.55(2) of the EP&A Act. A development consent cannot be modified under section 4.55(2) unless the consent authority is satisfied that the proposed modification would remain substantially the same as the development for which consent was originally granted.

The Department has reviewed the scope of the modification and considers that:

- the proposed changes to surface facilities are minor and would result in reduced amenity impacts to the neighbouring community compared to those of the approved project; and
- the impacts of the development as modified would be similar to, or less than, those of the originally approved project, with no new significant environmental impacts predicted.

Consequently, the Department is satisfied that the proposed modification is within the scope of section 4.55(2) of the EP&A Act and can be assessed and determined under this section.

4.3 Consent authority

The Minister for Planning (Minister) is the consent authority for the application under section 4.5(a) of the EP&A Act. However, under the Minister's delegation dated 26 April 2021, the Executive Director, Energy, Resources and Industry Assessments, may determine the application because there were less than 50 unique submissions by way of objection, Wollongong City Council (Council) did not object to the proposal and WCL has not made any reportable political donations.

4.4 Mandatory matters for consideration

The Department has considered the relevant considerations for the modification application under sections 4.15(1) and 4.55(3) of the EP&A Act, and summarised the findings in **Sections 5, 6 and 7**.

4.5 Objects of the Act

The Department has assessed the modification against the objects found in section 1.3 of the EP&A Act and this assessment is provided in **Appendix B**.

4.6 Impacts on biodiversity values

Under the relevant provisions of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*, the Department and its Biodiversity, Conservation and Science Directorate (BCS) require that the modification application must include a Biodiversity Development Assessment Report (BDAR), as the proposed modification would disturb additional land compared to the approved project. The Department's assessment of biodiversity impacts is described in **Section 6.2**.

5 Engagement

5.1 Department's Engagement

The Department publicly exhibited the Modification Report for 21 days from 11 February 2021 to 3 March 2021. The Department notified three previous submitters on the original application and 395 surrounding landowners of the proposed modification via letter on 8 February 2021. The application was also advertised in the Illawarra Mercury on 10 February 2021 and referred to relevant NSW Government agencies and Wollongong City Council (WCC).

5.2 Summary of Submissions

During the exhibition period the Department received 29 submissions from the general public, four from special interest groups (Lock the Gate Alliance, National Parks Association of NSW, Sutherland Shire Environment Centre and Oatley Flora and Fauna Conservation Society), a submission from Wollongong City Council and advice from 13 government agencies. Of the 29 public and four special interest group submissions, 30 were in the form of an objection and three were in the form of comments. No submissions in support of the modification were received.

A summary of the advice received from agencies and the issues raised in submissions is provided below. Copies of all advice and submissions are provided in **Appendix A**.

5.3 Key issues - Community and Special Interest Groups

The key concerns raised in community submissions were the potential for the proposed modification to impact on Lake Avon and the Sydney drinking water catchment, greenhouse gas emissions and concern regarding the potential for future mining applications separate to the existing approval. Other concerns raised included:

- characterisation of the proposed development as a modification;
- clarification regarding approved and proposed quantities of coal to be extracted;
- cumulative groundwater impacts of the proposed modification and other mining developments;
- potential surface water impacts including existing impacts from the approved development;
- concern regarding the assumptions of the economic assessment, including around future mining applications; and
- impacts to biodiversity from vegetation clearing.

Where relevant to the modification application, the Department's consideration of these matters is provided in **Sections 6** and **7** of this report.

The community also raised a number of issues outside the scope of the Department's assessment, namely the financial position of WCL (and its ability to pay for rehabilitation measures) and its status as a 'fit and proper person' to hold a mining licence. The Department notes that WCL must provide a rehabilitation security bond prior to mining activities, which is held by the NSW Government and is only returned once rehabilitation has been completed. WCL's status as a 'fit and proper person' is regulated by the NSW Resources Regulator under the *Mining Act 1992*. A fit and proper test is not a requirement

under the EP&A Act and is an irrelevant consideration for a consent authority when making a determination on a development application

5.4 Key issues – Government Agencies

None of the government agencies objected to the modification. However, they provided comments on the key aspects of the proposed modification and recommended conditions of consent. A summary of the key matters raised in agency submissions and recommendations is provided in **Table 2**.

Table 2 | Summary of Government Agency Advice

Agency	Key issues	Consideration
Dams Safety NSW	<ul style="list-style-type: none"> Concern about mining depth beneath Lake Avon. Noted that while geological features in the Southern Coalfields have not been found to contain water, this may not be the case for the proposed modification given the depth of mining Recommended the development of subsidence monitoring programs, in-seam drilling ahead of mains development, emergency Trigger Action Response Plans (TARPs) and a Contingency Plan for if water is encountered during mining 	<ul style="list-style-type: none"> WCL provided additional assessment and committed to the recommendations of Dams Safety NSW in its Submissions Report Dams Safety NSW advised it had no residual concerns.
WaterNSW	<ul style="list-style-type: none"> Concern regarding potential cracking beneath Lake Avon and requested further information regarding the extent of potential cracking Requested further detail regarding subsidence impacts Concerns regarding the groundwater modelling Request for WCL to consider the potential for impact on a future water pipeline. 	<ul style="list-style-type: none"> Following provision of advice from Dams Safety NSW and further information from WCL including additional commitments, WaterNSW confirmed it had no residual concerns.
Water Group	<ul style="list-style-type: none"> Request for the revision of the groundwater modelling WCL prepared revised groundwater modelling in its Submissions Report. 	<ul style="list-style-type: none"> Water Group were satisfied with the revisions to the groundwater modelling.
Biodiversity, Conservation and Science Directorate	<ul style="list-style-type: none"> Noted the biodiversity assessment satisfactory assessed potential impacts Supported the commitment for no future longwall mining at Wongawilli Colliery 	<ul style="list-style-type: none"> Noted
Subsidence Advisory	<ul style="list-style-type: none"> Noted that the subsidence assessments completed by WCL concluded the proposed modification would not result in any perceptible subsidence effects. 	<ul style="list-style-type: none"> Noted

Environment Protection Authority (EPA)	<ul style="list-style-type: none"> Noted that revised modelling indicates the proposal would reduce noise impacts Requested to be consulted during the preparation of management plans for the proposed modification 	<ul style="list-style-type: none"> Noted
Transport for NSW	<ul style="list-style-type: none"> Noted the reduced workforce would reduce traffic impacts compared to the existing approval. 	<ul style="list-style-type: none"> Noted
Heritage NSW (Heritage Council)	<ul style="list-style-type: none"> Concern regarding mining beneath Lake Avon, given it is a state-listed heritage item WCL provided further clarification regarding potential subsidence impacts in its Submissions Report 	<ul style="list-style-type: none"> Heritage NSW did not have residual concerns subject to the outcomes of the heritage assessment being implemented WCL committed to implementing the heritage assessment outcomes
Heritage NSW - Aboriginal Cultural Heritage (ACH)	<ul style="list-style-type: none"> Recommended additional assessment be carried out, including appropriate consultation with Aboriginal stakeholders, including the Illawarra Local Aboriginal Land Council 	<ul style="list-style-type: none"> WCL undertook additional consultation and assessment and presented this in its Submissions Report. Heritage NSW ACH was satisfied with the additional consultation and assessment.
Mining, Exploration & Geoscience	<ul style="list-style-type: none"> Noted the proposed modification would provide an appropriate return to the NSW Government of around \$3.7 million in total additional royalties Noted the proposed modification is considered to be an efficient use of resources 	<ul style="list-style-type: none"> Noted
Wollongong City Council	<ul style="list-style-type: none"> Supported to the proposed five-year extension to the approval Noted noise impacts on nearby residential development has been adequately addressed and supported noise mitigation Requested management of surface water impacts consistent with existing Environmental Protection Licence and appropriate modified conditions of consent 	<ul style="list-style-type: none"> Noted
Resources Regulator	<ul style="list-style-type: none"> Requested WCL review the existing Inrush and Inundation Risk Assessment and the Inrush and Inundation Principal Hazard Management Plan prior to commencing mining Requested development and implementation of effective subsidence monitoring programs and risk management plans surface features 	<ul style="list-style-type: none"> WCL committed to the recommendations made by the Resources Regulator in its Submissions Report

5.5 Response to Submissions

Following the exhibition of the Modification Report, the Department requested WCL provide a response to the issues raised in submissions. In September 2021, WCL provided a Submissions Report to the Department (see **Appendix A3**). The Submissions Report included revised or additional assessment of environmental aspects in response to submissions and agency advice (refer to **Table 2**). The Department made the Submissions Report publicly available and referred it to relevant government agencies.

6 Assessment

The Department considers the key matters for consideration for the proposed modification are subsidence and subsidence-related impacts to surface and groundwater, specifically, how the proposed modification may impact Lake Avon and the Sydney drinking water catchment. These matters have been addressed in **Section 6.1**. The Department has considered a range of other issues relevant to the proposed modification in **Section 6.2**.

6.1 Subsidence and subsidence-related impacts

Introduction

The mining method for the proposed modification would limit all mining carried out under the consent to first workings mining methods. First workings mining methods leave pillars intact to avoid the collapse of the overlying strata and therefore avoid subsidence effects, impacts and environmental consequences.

The Modification Report includes a Subsidence and Geotechnical Assessment prepared by SCT Operations. The Subsidence and Geotechnical Assessment have informed the assessment of potential environmental consequences, including for surface water, groundwater and biodiversity.

The Subsidence and Geotechnical Assessment concluded that there is no potential for the proposed headings to cause surface ground movements of any consequence. The assessment noted that surface subsidence is expected to be so small as to be imperceptible for all practical purposes and that impacts to natural and built features are also expected to be imperceptible. The pillar stability assessment concluded that proposed pillars would be long-term stable, including in areas where there has been secondary extraction of pillars in the underlying Wongawilli coal seam.

Nevertheless, a number of potential impacts were raised during the assessment, including:

- Interactions with Lake Avon;
- Water inflows due to geological structures;
- Geological stresses from historical mining;
- Surface water discharges; and
- Groundwater impacts.

These are discussed in detail below.

Interactions with Lake Avon

The approved NWMD includes one crossing beneath Lake Avon. The modification proposes an additional two crossings (see **Figure 3**). The approved crossing occurs at a depth of around 60 metres

beneath the base of the dam and the proposed crossings would be at a depth of around 113 m and 134 m respectively.

WaterNSW initially raised concerns about the potential for cracking extending to the base of the dam. An additional geotechnical assessment identified that the height of cracking would not be expected to extend above 2-2.5 m above the headings, which is minor in the context of the clearance of 60 m (approved), 113 m and 134 m (proposed) to the base of Lake Avon. Following review of this additional geotechnical assessment, WaterNSW had no residual concerns regarding the potential for cracking.

The Department has recommended a condition requiring WCL prepare a Dam Safety Management Plan in consultation with WaterNSW and Dam Safety NSW to manage mining operations in proximity to the dam (refer below).

Water inflows due to geological structures

There are two major geological fault structures in the vicinity of the proposed NWMD. The proposed modification would involve mining through the Wongawilli Fault, while a second parallel fault is located approximately 750 m to the south of the NWMD between Wongawilli and Avon Collieries. Several major dykes have also been identified and mapped within the area of the proposed modification.

WCL notes in its subsidence assessment that in a review of experience of mining through geological structures in the Dendrobium area of the Southern Coalfields, that geological fault structures do not contain water. However, WaterNSW noted that while geological features in the Southern Coalfields have so far not been found to contain water, this may not be the case for the proposed modification given the depth of mining compared to other projects.

WCL provided an additional geotechnical assessment as part of the Submissions Report in response to the concerns raised by WaterNSW. The assessment noted that there has been historic mining through the Wongawilli Fault and no significant inflows have been encountered. This includes construction of Sydney Water's Avon-Illawarra Tunnel through the same fault with no significant inflow recorded (SCT 2021). The crossing point for the proposed headings is approximately 400 m from the base of Lake Avon and therefore no impact to Lake Avon is anticipated.

WCL acknowledge that there is the potential for the dyke beneath the Lake Avon crossing to contain or transmit water, despite previous experience in the Southern Coalfields that these features do not contain water. Consequently, WCL has committed to a precautionary approach to manage the potential for inflows to occur where the main headings cross below Avon Reservoir, including in seam drilling ahead of workings to identify any areas of increased hydraulic conductivity.

The Department has recommended conditions to formalise these commitments in a Dam Safety Management Plan to be prepared in consultation with Dam Safety NSW and WaterNSW.

Following the additional assessment and commitments made by WCL, Dams Safety and WaterNSW had no residual concerns regarding potential impacts to Lake Avon. Dams Safety and Water NSW were also consulted by the Department in the preparation of the condition requiring the Dam Safety Management Plan and noted that the condition adequately covers the issues and requirements raised by the respective agencies.

Based on the evidence provided by historical mining in the region, and the proposed mitigation measures described above, the Department considers that the NWMD can be managed appropriately to avoid additional inflow.

Geological stresses from historical mining

The Southern Coalfields has a long history of mining, including mining in the vicinity of the proposed modification. The proposed NWMD would pass above areas of previous first workings and secondary extraction in the underlying Wongawilli Seam.

The proposed additional headings have been designed to avoid potential interactions as far as practicable with these historic mine workings. The subsidence assessment (refer **Appendix A1**) considered the impacts of previous mine workings on the NWMD.

The assessment noted there is some potential for increased vertical stresses when mining is above the edges of areas of secondary extraction in the underlying Wongawilli Seam and reduced vertical stress directly above the areas of secondary extraction. The assessment noted these conditions would likely require additional roof reinforcement, however there is no potential for there to be additional surface subsidence or other perceptible impacts due to this previous mining (SCT, 2021).

The underlying Wongawilli Seam workings are understood to be flooded and the water level in these flooded workings would need to be drawn down by around 10 metres to avoid water entering the NWMD. Water from dewatering activities is pumped to a tributary of Robins Creek, where it enters a mine dam for use at the mine. Overflows from the dam discharge into another tributary of Robins Creek. The discharge is licenced under EPL 1087.

Surface water discharges

Under the Sydney Drinking Water SEPP, all development in the Sydney drinking water catchment is required to demonstrate a neutral or beneficial effect on water quality.

The proposed mining would not result in any subsidence-related ground movements or perceptible impacts on natural features, including water courses and Lake Avon. There are also no surface works proposed within the Lake Avon catchment.

The Wongawilli pit top and associated surface water management system discharges to Robins Creek, outside the Sydney drinking water catchment. The existing pit top surface water management system would be maintained, including the rate of discharge to licenced discharge points.

Based on the findings of the surface water assessment (refer to **Appendix A1**), the Department considers that the proposed modification would have a neutral effect on water quality in the Sydney drinking water catchment. WaterNSW did not raise concerns about surface water discharges.

WCL has committed to incorporating additional measures into its existing Surface Water Management Plan including recommencement of surface water monitoring in the Lake Avon catchment, additional water quality monitoring in Robins Creek catchment, monitoring of additional water quality parameters and metering of pumped volumes from key water storages. The additional water quality monitoring was supported by the EPA. The Department has recommended conditions requiring the Surface Water Management Plan to be updated prior to the recommencement of mining operations.

Groundwater impacts

The Supplementary Groundwater Impact Assessment (**Appendix A3**) prepared for the modification concludes that due to the first workings mining method, any additional impacts on groundwater would be limited, including:

- no groundwater drawdown in the alluvium/weathered zone or Hawkesbury Sandstone, and therefore no predicted losses or diversions of surface water;
- no predicted additional impacts to upland swamp water conditions;
- no impact to groundwater quality;
- no drawdown of the water table and no predicted changes to hydraulic connectivity above the workings;
- negligible impact on baseflow to rivers and creeks;
- no impact predicted on private bores; and
- an increase to predicted mine inflows associated with the progression of development headings into the lower Wongawilli seam at the western end of the NWMD, which can be accounted for within the existing entitlements of the current water access licence held by WCL.

WCL operates an existing groundwater monitoring network at the site and has committed to installing seven new monitoring sites targeted at identifying any impacts to swamps and overlying sandstone due to the proposed modification. The Department has recommended that a detailed groundwater monitoring plan be developed in consultation with DPIE Water and WaterNSW as part of the Water Management Plan required under the consent.

Summary

The Department accepts that the proposed first workings mining method would result in negligible subsidence or subsidence related impacts to natural or built features.

The Department considers that WCL has demonstrated there is a low risk of impact to Lake Avon and the Metropolitan Special area, including impacts to surface water or groundwater. WaterNSW, Dams Safety NSW and Water Group noted their initial concerns have been addressed through the assessment process and WCL has committed to the recommendations of the relevant agencies, including precautionary measures to identify the presence of water ahead of mining, monitoring measures and contingency measures in the unlikely event there are greater than negligible impacts.

The Department notes that WCL's commitment to no longer undertake longwall mining would avoid additional impacts associated with approved longwall mining under this approval. This approach is supported by the Department's Biodiversity Conservation and Science Directorate (BCS) which noted this change would minimise subsidence impacts on upland swamps and other sensitive threatened species habitats and watercourses.

6.2 Other issues

The Department's consideration of other issues is provided in **Table 3**.

Table 3 | Assessment of other issues

Issue	Assessment	Recommendations
Noise	<ul style="list-style-type: none"> • The existing approval establishes noise limits associated with the Wongawilli pit top and rail operations. The Department notes however that much of this surface infrastructure has not been in regular operation since 2019 when the mine entered care and maintenance. • Noise impacts would generally decrease for the proposed modification due to: <ul style="list-style-type: none"> - the proposed relocation of surface infrastructure underground; - upgrades to conveyor systems and the restriction of the operation of the conveyors and noisy mobile plant to the daytime period; - extension of the existing noise wall at the lower pit top; - reduction in the number of train movements and restriction of train movements to the daytime period; and - significant reduction in production levels. • WCL prepared a noise assessment for the proposed modification in accordance with the methodology outlined in the <i>Noise Policy for Industry</i> (NPI) for existing sites. This included noise modelling against project noise trigger levels and the identification of reasonable and feasible mitigation measures • The noise assessment identified that the predicted noise levels are estimated to reduce by 3-8 dB at most assessment locations when reasonable and feasible mitigation measures are implemented • This reduction in noise impacts is reflected in the changes to residual noise impact categorisations under Table 1 <i>The Voluntary Land Acquisition and Mitigation Policy</i> (VLAMP) (DPE 2018) as below for the proposed modification: <ul style="list-style-type: none"> - 0 receivers are predicted to experience significant impacts, compared to one receiver for existing operations; - 0 receivers are predicted to experience moderate impacts, compared to six receivers for existing operations; - 1 receiver is predicted to experience marginal impacts, compared to 22 receivers for existing operations; - 6 receivers are predicted to experience negligible impacts, compared to 14 receivers for existing operations; and - 36 receivers who were considered noise-affected for existing operations would no longer be considered noise-affected under the proposed modification. 	<p>The Department recommends that:</p> <ul style="list-style-type: none"> • coal processing and transport be restricted to 486,000 tonnes per annum of ROM coal to reflect the available resource • contemporary noise impact assessment criteria be adopted • limits be placed on the hours of operation of various pit top plant and equipment and on train loading and train movements • the number of permissible daily train movements be reduced from eight to four per day • a reasonable timeframe be adopted for the implementation of proposed noise mitigation measures; • contemporary noise mitigation, management and monitoring procedures be adopted. <p>The Department has revised the conditions to this effect.</p>

Issue	Assessment	Recommendations
Air quality	<ul style="list-style-type: none"> The key air quality emission from the Colliery is particulate matter (dust) from coal handling activities. Impacts are managed under an existing Air Quality and Greenhouse Gas Management Plan and WCL must comply with the air quality criteria in the existing approval and minimise air quality emissions The relocation of the crusher, sizer and screen underground and the enclosure of existing coal conveyors would generally reduce the potential for air quality impacts An Air Quality Impact Assessment (AQIA) was completed for the proposed modification in accordance with <i>Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales</i> (NSW EPA 2016); The assessment identified that the predicted impacts from Colliery operations would not result in exceedance of any applicable criteria at any neighbouring assessment locations. 	The Department recommends that contemporary air quality criteria be adopted and has revised the conditions to this effect.
Greenhouse gas	<ul style="list-style-type: none"> The proposed modification would result in direct and indirect greenhouse gas emissions, primarily from the mining of coal. Greenhouse gas emissions and climate change was a key issue raised in community submissions A Greenhouse Gas Assessment was completed as part of the Modification Report and greenhouse gas calculations were revised and additional commitments relating to greenhouse gas mitigation measures were made by WCL in response to a request for information from the Department Over the proposed extended life of the project, it is estimated that the project would generate around 210 kilotonnes (kt) of direct emissions and 106kt of emissions from electricity consumption. This represents around 0.046% of total annual NSW emissions and 0.012% of annual Australian emissions WCL has committed to a range of measures to reduce emissions, including the preparation of a Sustainability and Emission Reduction Strategy which would include: <ul style="list-style-type: none"> measures to reduce indirect emissions from electricity consumption; and reduce or offset emissions by 4% each year over the extended life of the project The Department considers that the proposed modification would not significantly increase greenhouse gas emissions in NSW or constrain the ability to achieve the target of a 50% reduction in emissions by 2030. 	<p>The Department recommends that the conditions be revised to require the Air Quality and Greenhouse Gas Management Plan describe measures that would be implemented to:</p> <ul style="list-style-type: none"> ensure best practice management of greenhouse gas emissions is being employed at the site in respect of minimising greenhouse gas emissions and energy efficiency reduce or offset greenhouse gas emissions by four per cent per year monitor and report on the project's Scope 1 and Scope 2 greenhouse gas emissions

Issue	Assessment	Recommendations
Biodiversity	<ul style="list-style-type: none"> • The proposed modification would require clearing of 0.04 hectares of vegetation at the Wongawilli pit top, primarily for the proposed new conveyor • A Biodiversity Development Assessment Report (BDAR) was completed for the proposed modification in accordance with the <i>NSW Biodiversity Assessment Method (BAM)</i> (OEH 2017a) • The BDAR identified the proposed modification would directly impact 0.03 hectares of native vegetation comprising two plant community types, and 0.01 hectares of vegetation that met the listing for two threatened ecological communities • No threatened fauna species were recorded however the assessment assumes the presence of four species credit species (including three microbats) identified by the BAM calculator, due to the presence of appropriate habitat • Potential habitat for microbats includes the existing mine tunnel entrance and old gantry and tumbler house • A range of mitigation measures have been identified in the BDAR, including measures to avoid and minimise potential impacts to microbats • BCS noted that impacts to biodiversity would be minimal and would occur in a heavily modified environment • BCS supported the surrender of approval for longwall mining given this would avoid potential impacts to upland swamps, and other sensitive threatened species habitats and watercourses 	<p>The Department recommends that the conditions be revised:</p> <ul style="list-style-type: none"> • to include a requirement to retire biodiversity offset credits for proposed clearing • to include a requirement to prepare a Biodiversity Management Plan in consultation with BCS
Aboriginal heritage	<ul style="list-style-type: none"> • An Aboriginal Cultural Heritage Assessment (AHCA) was completed for the proposed modification, including consultation with Aboriginal Stakeholders. • No Aboriginal heritage sites or areas of archaeological sensitivity were identified above the proposed NWMD or in the vicinity of proposed works at Wongawilli pit top • Proposed first workings would result in negligible subsidence and would not impact any known Aboriginal heritage sites • WCL currently implements an approved Heritage Management Plan, which addresses both Aboriginal and non-Aboriginal heritage. WCL has committed to prepare a stand-alone Aboriginal Cultural Heritage Management Plan in consultation with the Aboriginal community to guide the management and monitoring of Aboriginal cultural heritage sites and values within the colliery lease holding. 	<p>The Department recommends that the conditions be revised to include a requirement to prepare a stand-alone Aboriginal Cultural Heritage Management Plan</p>

Issue	Assessment	Recommendations
Non-Aboriginal heritage	<ul style="list-style-type: none"> Listed non-Aboriginal heritage items in the vicinity of the proposed modification include the Wongawilli Colliery itself (local significance), Avon Dam (state significance) and the Illawarra Local Escarpment Landscape Area (local significance) WCL prepared a Historical Heritage Assessment and Statement of Heritage Impact for the proposed modification in accordance with <i>Assessing Heritage Significance, Assessing Significance for Historical Archaeological Sites</i> and <i>'Relics'</i> (Heritage Office, 2001) and the Burra Charter (ICOMOS, 2013) The existing conveyor and Dumper House are items of heritage significance within the colliery that may be impacted by the proposed modification. There would be alteration to the fabric of the conveyor where it connects to the proposed new conveyor and there is the potential for the Dumper House to be impacted by the movement of machinery for nearby works at the conveyor WCL has committed to archival recording of the Wongawilli pit top, fencing of the Dumper House to protect the item from the movement of machinery nearby and development of an unexpected finds procedure Consideration of potential impacts to Avon Dam (Lake Avon) is provided in Section 6.1. Potential impacts to the heritage values of Avon Dam are considered to be unlikely Initial concerns raised by Heritage NSW regarding impacts to Avon Dam were addressed through the assessment. Heritage NSW did not have residual concerns subject to the implementation of the commitments made by WCL outline above. The Department has included these commitments in the revised Statement of Commitments No works for the proposed modification would occur within the curtilage of the Illawarra Local Escarpment Landscape Area and the subsidence assessment for the proposed modification has identified that impacts to surface features would be imperceptible. WCL currently implements an approved Heritage Management Plan, which addresses both Aboriginal and non-Aboriginal heritage. WCL has committed to preparing a stand-alone Heritage Management Plan for non-Aboriginal heritage in consultation with Heritage NSW and Wollongong City Council. 	The Department recommends that the conditions be revised to include a requirement to prepared to prepare a stand-alone Heritage Management Plan
Traffic	<ul style="list-style-type: none"> A Traffic Impact Assessment (TIA) was completed for the proposed modification in accordance with TfNSW's <i>Guide to Traffic Generating Developments</i> Given there would be a reduction in the approved workforce from 300 FTEs to 150 FTEs, traffic impacts to the surrounding road network would be reduced from those of the approved project. Consistent with existing operations, all intersections assessed in the TIA would continue to operate at the highest level of service. 	No change to existing conditions required

Issue	Assessment	Recommendations
Rehabilitation	<ul style="list-style-type: none"> The proposed modification does not seek to change the approved rehabilitation activities, with the exception of changes to surface infrastructure that would be removed or relocated underground. The existing approval includes rehabilitation objectives and requires WCL to update its Rehabilitation Management Plan for the proposed modification. 	The Department recommends that the conditions be revised to reflect contemporary rehabilitation requirements under the <i>Mining Act 1992</i> .
Future mining applications	<ul style="list-style-type: none"> A key issue raised in submissions was concern regarding potential future mining applications that may be facilitated by the proposed modification It is noted by WCL in the Modification Report that the proposed modification could provide ventilation for future mining areas. The Environmental Assessment (EA) for the original application identifies a future 'Western Area' Notwithstanding, the Department notes that any future application would be assessed on its own merits, in accordance with the EP&A Act. The proposed modification would not prejudice the assessment for any future application for mining elsewhere within the colliery lease holding The existing approval notes in condition 2 of Schedule 2 <i>that approval of the Western Driveage component of the project does not indicate or imply any approval of future mining in the Western Area (as defined in the EA), which will be subject to a separate planning process and full merit assessment.</i> 	No change to existing conditions required
Social and economic	<ul style="list-style-type: none"> The proposed modification would generally result in improvements to amenity compared to approved impacts, however it is noted that given the colliery is currently in care and maintenance, the recommencement of operations would result in an increase in the impacts experienced by the nearby community over the past two to three years. The proposed modification would enable the employment of up to 150 FTE employees, a substantial increase from the current care and maintenance workforce. The Department notes that the employment benefits of the proposed 	No change to existing conditions required

Issue	Assessment	Recommendations
	<p>modification are less than the currently approved maximum workforce of 300 FTE that was required for longwall mining operations, however are still significant in a local context</p> <ul style="list-style-type: none"> • The coal produced by this modification would be exported, contributing to the ongoing demand for high-quality metallurgical coal from JSPL, an Indian based business entity that forms part of the OP Jindal Group that produced approximately 32 Mt (25%) of India's steel in 2019. • The Economic Assessment for the proposed modification identified the following economic benefits: <ul style="list-style-type: none"> - up to around \$3.7 million in total additional royalties (current dollars); - around \$38 million additional total revenue (current dollars); - generate \$1.6 million (lower range) in Net Present Value (NPV) terms of total net production benefits to the NSW economy; and - Provide a capital investment of about \$37 million. • MEG considered the proposed modification to be an efficient use of resources. 	

RECOMMENDATION

7 Evaluation

The Department has assessed the modification application and supporting information in accordance with the relevant requirements and objects of the EP&A Act, including the relevant matters for consideration.

The Department considers the key matters for consideration for the proposed modification are subsidence and subsidence-related impacts to surface and groundwater, specifically, how the proposed modification may impact Lake Avon and the Sydney drinking water catchment.

The Department accepts that the proposed first workings have been designed to be long-term stable and would result in negligible subsidence or subsidence related impacts to natural or built features.

The Department considers that WCL has demonstrated there is a low risk of impact to Lake Avon and the drinking water catchment, including negligible impacts to surface water and groundwater. WCL has addressed the concerns of WaterNSW, Dams Safety NSW and Water Group and has committed to implement the recommendations of these agencies. WaterNSW, Dams Safety NSW and the Department's Water Group have advised they have no residual concerns following the commitments made by WCL.

The Department also considers that with the significantly lower levels of coal production and additional noise mitigation measures proposed by the modification, amenity impacts to the local community have been minimised. The Department is satisfied that that the modification would not result in any additional significant impacts to the environment or surrounding community from those previously assessed and approved for the project.

The Department notes that WCL's commitment to no longer undertake longwall mining would avoid impacts associated with approved longwall mining under this consent. This approach is supported by BCS, which noted this change would minimise subsidence impacts on upland swamps and other sensitive threatened species habitats and watercourses.

The key economic benefit of the proposed modification is related to the employment of 150 workers for five years. The project would also raise up to around \$3.7 million in total additional royalties (current dollars).

The Department has recommended a range of conditions to formalise the commitments made by WCL during the assessment process and to reflect contemporary guidelines and expectations relating to environmental management and monitoring (see **Appendix C**).

On balance, the Department considers that the proposed modification is in the public interest and can be carried out without any significant additional impacts to the environment or surrounding community compared to the approved project. Consistent with the reasons for granting the original approval, the Department considers that the economic benefits and reduction in amenity impacts associated with additional noise mitigation sufficiently outweigh the residual impacts associated with the additional first workings mining activities.

Accordingly, the Department recommends that the modification should be approved, subject to the revised conditions.

8 Recommendation

The Department recommends that the Executive Director, Energy and Resource Assessments, as delegate of the Minister for Planning and Public Spaces:

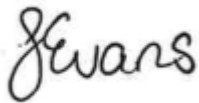
- **considers** the findings and recommendations of this report;
- **determines** that the application (MP 09_0161 Mod 2) falls within the scope of section 4.55(2) of the EP&A Act;
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to approve the modification;
- **agrees** with the key reasons for approval listed in the draft notice of decision;
- **modify** the consent; and
- **signs** the attached approval of the modification (**Appendix C**).

Prepared by:

Jack Turner

Senior Environmental Assessment Officer
Resource Assessments

Recommended by:



05/04/2022

Jessie Evans

Director
Resource Assessments

9 Determination

The recommendation is Adopted / Not adopted by:

Clay Preshaw

Executive Director

as delegate of the Minister for Planning and Public Spaces

RECOMMENDATION

Appendices

Appendix A – List of Key Documents

A1 – Modification Report: Refer to folder “Modification Application” on the NSW planning portal at: <https://www.planningportal.nsw.gov.au/major-projects/project/31026>

A2 – Submissions and Agency Advice: Refer to folder “Submissions” and “Agency Advice” on the NSW planning portal at: <https://www.planningportal.nsw.gov.au/major-projects/project/31026>

A3 – Submissions Report: Refer to folder “Response to Submissions” on the NSW planning portal at: <https://www.planningportal.nsw.gov.au/major-projects/project/31026>

A4 – Additional Information: Refer to folder “Additional Information” on the NSW planning portal at: <https://www.planningportal.nsw.gov.au/major-projects/project/31026>

Appendix B – Objects of the EP&A Act

Table B1 summarises how the Department considers that the Project can be undertaken in a manner that is consistent with these objectives, including Ecologically Sustainable Development (ESD).

Table B1 | Consideration of the proposed modification against the relevant objects of the EP&A Act

Objects of the EP&A Act	Consideration
(a) <i>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;</i>	The modification is consistent with this object because it would facilitate the recommencement of mining operations and maximise the recovery of coal resources within an existing mining lease area. The mine’s existing infrastructure would continue to be utilised.
(b) <i>to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment;</i>	The Department’s assessment has sought to integrate all significant environmental, social and economic considerations. The Department considers that the modification can be carried out in a manner that is consistent with the principles of ecologically sustainable development.
(c) <i>to promote the orderly and economic use and development of land;</i>	The proposed modification involves a permissible land use and would be carried out within existing project boundaries. The Department considers this represents an orderly and economic use of the land.
(e) <i>to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats;</i>	The proposed modification would require clearing of 0.04 hectares of native vegetation at the Wongawilli pit top. The Department considers that impacts to biodiversity would be minimal and would occur in a heavily modified environment The Department notes that the surrender of approval for longwall mining would avoid potential impacts to upland swamps, and other sensitive threatened species habitats and watercourses.

Objects of the EP&A Act	Consideration
(f) <i>to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage);</i>	The Department considers that the modification would be unlikely to result in impacts to listed non-Aboriginal heritage items in the vicinity, including the Wongawilli Colliery itself (local significance), Avon Dam (state significance) and the Illawarra Local Escarpment Landscape Area (local significance). No Aboriginal heritage sites or areas of archaeological sensitivity were identified above the proposed NWMD or in the vicinity of proposed works at Wongawilli pit top.
(i) <i>to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State; and</i>	The Department has assessed the modification application in consultation with Wollongong City Council and other relevant NSW government authorities including Water NSW and Dams Safety NSW and given consideration to the issues raised by these agencies in its assessment.
(j) <i>to provide increased opportunity for community participation in environmental planning and assessment.</i>	The Department publicly exhibited the modification application and considered all submissions in its assessment.

Appendix C – Notice of modification

Refer to the NSW planning portal at: <https://www.planningportal.nsw.gov.au/major-projects/project/31026>

Appendix D – Consolidated development consent

Refer to the NSW planning portal at: <https://www.planningportal.nsw.gov.au/major-projects/project/31026>