



ASSESSMENT REPORT

MYUNA COLLIERY Production Increase Modification (MP 10_0080 Mod 1)

1. BACKGROUND

1.1 Overview and Regional Context

Myuna Colliery is located within the Lake Macquarie and Wyong local government areas (LGAs), approximately 25 kilometres (km) southwest of Newcastle (see Figure 1). The mine lies mostly under Lake Macquarie and the suburbs of Arcadia Vale, Wangi Wangi, Myuna Bay, Morisset Peninsula and Point Wolstoncroft (see Figure 2).



Figure 1: Regional context of Myuna Colliery

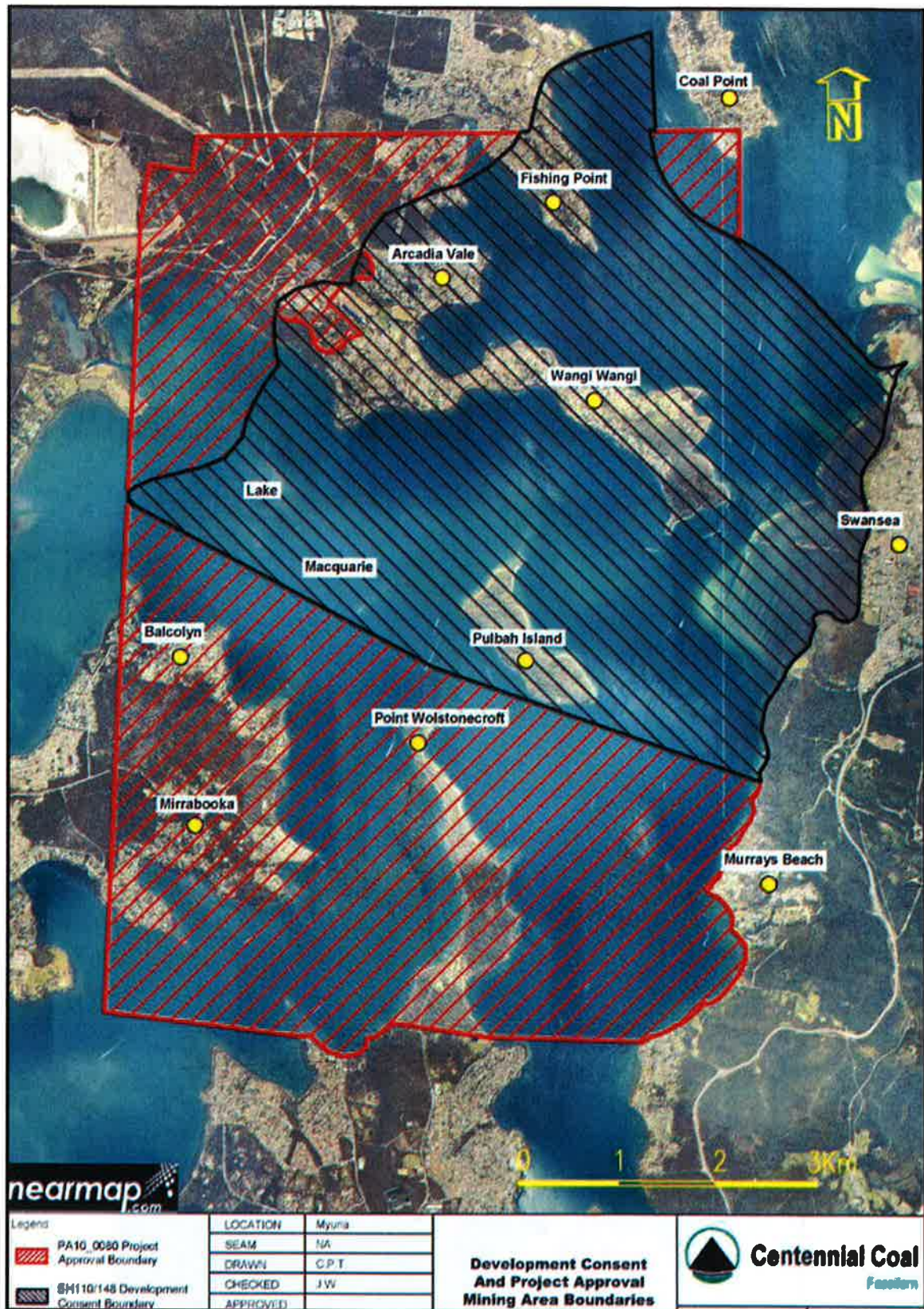


Figure 2: Project approval and development consent boundaries

Myuna Colliery is owned and operated by Centennial Myuna Pty Ltd (Centennial), a wholly owned subsidiary of Centennial Coal Company Pty Ltd, which is in turn a subsidiary of Banpu Public Company Limited. The mine has been in operation since 1982, and currently employs around 200 people. The mine extracts coal from the Wallarah, Great Northern and Fassifern seams. All coal extracted from Myuna supplies the nearby Eraring Power Station.

The mine includes a pit-top site adjacent to the former Wangi Power Station site near Wangi Wangi (see Figure 3), which incorporates a range of ancillary infrastructure, including a Coal Handling Plant (CHP). Coal is crushed at the CHP before being transported to Origin Energy's Eraring Power Station via the Eraring Overland Conveyor, which is also owned and operated by Origin Energy. Coal is not washed at Myuna, and accordingly no coal rejects are produced.

Myuna is one of three mines that Centennial operates in the Newcastle Coalfield, the others being Mandalong Mine and Newstan Colliery.

1.2 Regulatory Framework

Part of Myuna Colliery is subject to a development consent granted by Lake Macquarie City Council in 1977 under the *Local Government Act 1919* (SH 110/148, shown in black hatch in Figure 2). Mining under this consent commenced at Myuna in 1982.

The current mining operations at Myuna are regulated under a project approval granted in 2012 by the Planning Assessment Commission, under delegation from the then Minister for Planning and Infrastructure (MP 10_0080, shown in red hatch in Figure 2). This is the dominant approval at the mine, and allows:

- up to 2 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal to be extracted within the project area from the Wallarah, Great Northern and Fassifern coal seams, until 2032;
- the operation of the Myuna pit-top, including the CHP;
- delivery of crushed coal to the Origin Energy overland conveyor; and
- the mine to operate 24 hours per day, 7 days a week.

1.3 Mine Design and Mining Systems

Given its focus on extraction beneath Lake Macquarie, mine design at Myuna is very conservative. The design is based on the following principles:

- multi heading layout (generally 7 parallel mine headings) with 30 m x 30 m centre pillars and extraction roadways 5.5 m in width;
- minimum of 30 m of solid rock strata between mined areas of the three coal seams;
- minimum of 40 m of solid rock strata (excludes lake sediments) between the Lake bed and the uppermost mined coal seam;
- pillar stability factor criterion of 2.11, which represents a probability of pillar failure of 1 in 1,000,000; and
- partial pillar extraction only after a pillar-specific assessment by geotechnical experts.

Two distinct mining zones are worked, known as Zones A and B (see Figure 4). Zone A includes all land above the high-water mark of Lake Macquarie, a foreshore fringing zone known as the High Water Subsidence Control Zone, and all seagrass beds. Vertical subsidence in Zone A is limited to 20 millimetres (mm), to ensure no surface impacts occur. Only first workings are undertaken, with coal pillars which support the roof being designed to be long-term stable.

Zone B covers the deepest areas of Lake Macquarie. Vertical subsidence in Zone B is restricted to not more than 650 mm. First workings is the primary mining method in Zone B. Limited partial pillar extraction second workings can take place within the Great Northern and Fassifern seams (ie the two deeper seams), but only after the approval of a comprehensive Extraction Plan. Centennial is yet to undertake any second workings beneath Lake Macquarie.

As the subsidence limits are substantially different in Zone A and Zone B, a transitional area is in place at the zone boundaries. The transitional area limits the use of Zone B mining systems by an angle of draw of 26.5° from the deepest extent of any nearby seagrass bed, or otherwise by an angle of draw of 35° from the high-water mark of the Lake.



Figure 3: Myuna pit-top layout



Figure 4: Subsidence Zones A and B

2. PROPOSED MODIFICATION

In November 2014, Centennial requested a modification to project approval MP 10_0080 to permit:

- an increase in production from 2 Mtpa to 3 Mtpa (and consequent increase in coal delivered to the overland coal conveyor); and
- an increase in the mine's workforce from 210 – 300 people.

Centennial is proposing the modification as part of a program to maximise the efficiencies in production at its three mines in the Newcastle Coalfield. At the present time, all coal from Myuna and a percentage of coal from both Mandalong and Newstan supply Eraring Power Station. Centennial has recently reviewed its Newstan operations, in response to the significant downturn in prices for thermal coal. This has resulted in Newstan being placed on "care and maintenance" for the foreseeable future, which has significant implications for the 148 workers that were employed there.

Coal produced at Mandalong typically is of higher quality, and therefore attracts a higher sale price if sold on the export market. Therefore, Centennial would prefer to export as much Mandalong coal as possible, rather than sending it to the power station. However, ceasing production at Newstan would require more Mandalong coal to be diverted from the export market to the power station to meet contract obligations.

Consequently, Centennial wishes to gain greater flexibility in the supply of coal from its local operations to export and domestic markets, and is proposing to increase production at Myuna to facilitate these outcomes. The proposed additional 1 Mtpa of production at Myuna would offset the Newstan coal that would otherwise be delivered to the power station, and would also "free-up" a greater proportion of coal from Mandalong for sale into the export market.

Centennial has advanced a number of other reasons to support the proposed modification, including:

- around 90 workers from Newstan would retain employment by being transferred to Myuna;
- mining equipment currently underground at Newstan could continue to be utilised, and not lay idle during the care and maintenance period;
- no new infrastructure is required at the Myuna pit-top, and no upgrades to existing infrastructure are required to handle the additional coal; and
- increased production can be undertaken generally within the existing regulatory framework.

No other changes to the existing approved operations are sought. The modification would not change the mining methods, the target seams, or have any significant effect at the Myuna pit-top site. However, the increased coal production would require the underground conveyor belt speed to slightly increase, and the rotary breaker at the CHP to operate for longer hours than it does currently.

3. STATUTORY CONTEXT

3.1 Section 75W Modification

Under Schedule 6A of the *Environmental Planning & Assessment Act 1979* (EP&A Act), the Myuna Colliery Mining Project (MP 10_0080) is classified as a "transitional Part 3A project" and can continue to be modified under the former section 75W of the EP&A Act. The Department is satisfied that the proposed modification is within the scope of section 75W. The proposed modification involves no change to approved mining methods and systems, no change to the approved mining area, no change to processing infrastructure, and the resulting environmental impacts would be substantially the same as those approved for the original project.

3.2 Approval Authority

The Minister for Planning is the approval authority for the application. However, the Executive Director, Resource Assessments & Compliance, may determine the application under the Minister's delegation of 16 February 2015; as Centennial has not made reportable political donations, neither Lake Macquarie City Council nor Wyong Shire Council has objected to the application, and less than 10 public objections were received.

4. CONSULTATION

4.1 Exhibition and Notification

The Department made the Environmental Assessment (EA, see Appendix A) available on its website, and publicly exhibited the EA from 27 November to 19 December 2014 at:

- the Department's Information Centre;
- the offices of Lake Macquarie City Council (LMCC) and Wyong Shire Council (WSC);
- Myuna Colliery; and
- the offices of Nature Conservation Council.

The Department also notified relevant public authorities of the proposal in writing, and invited comment from these authorities.

4.2 Submissions

The Department received submissions from nine public authorities, two from special interest groups (one objecting submission from the Community Environment Network and one supporting submission from the Construction, Forestry, Mining and Energy Union (CFMEU)) and 11 from the general public (one objecting and 10 supporting). The submissions (see Appendix B) were made available on the Department's website.

The **Environment Protection Authority (EPA)** and **LMCC** initially raised concerns over emission factor calculations in the EA's Air Quality Assessment. EPA accepted that the existing approved noise limits should apply to the modification but suggested that approved noise monitoring requirements could be modified to align with the monitoring requirements in the site's environment protection licence (EPL). Centennial revised its air quality assessment to rectify these matters. EPA subsequently accepted the revised Air Quality Assessment and LMCC offered no further comment on the issue.

NSW Trade and Investment's **Division of Resources and Energy (DRE)** commented that the proposed modification would not change overall subsidence profiles above the mining area, and that the Extraction Plan process would continue to effectively manage potential subsidence impacts. DRE recommended that the approval is modified to provide rehabilitation objectives for the mine's final landforms, and the preparation of a Rehabilitation Management Plan.

WSC considered that Centennial should be required to provide it with financial contributions towards community improvements to mitigate the impacts of the project.

NSW Health, Office of Environment and Heritage, NSW Office of Water, NSW Agriculture, Roads and Maritime Services and Dams Safety Committee raised no objections or concerns that required further assessment.

The **Community Environment Network** and the sole community objector raised similar concerns. These included that the proposed modification would increase local air quality impacts, and accelerate climate change by producing increased greenhouse gas emissions.

CFMEU and the ten supporting submissions from the community highlighted the social benefits of the proposed modification, including continued employment opportunities and flow-on economic benefits for the local area and the region.

Centennial provided a Response to Submissions document on 27 January 2015 (see Appendix C). The issues raised in submissions and the company's responses have been fully considered in the Department's assessment (see Section 5).

5. ASSESSMENT

The Department's assessment of the environmental impacts of the proposed modification is summarised in Table 1.

Table 1 – Assessment of Environmental Impacts

Issue	Assessment	Recommendation
Subsidence	- The proposed modification would not affect mining operations in the established subsidence Zones A and B or in the transitional zone. Therefore the resulting subsidence impacts to natural and built features would not increase over approved levels. - Subsidence impacts from second workings would be appropriately managed under the comprehensive Extraction Plan process. Any Extraction Plan is required to include a subsidence monitoring program for second workings. Strict subsidence performance measures would continue to apply, to limit impacts at all built and natural features. - Subsidence monitoring to date shows that the mine is complying with the 20 mm vertical subsidence limit. This monitoring program would be continued under the proposed modification. - The Department considers the current subsidence management regime remains appropriate for the proposed increased levels of production.	No additional conditions of approval are required.
Air Quality & Greenhouse Gas Emissions (GHGEs)	- The primary source of dust emissions is from the pit-top's Emergency Coal Stockpile, which is only used during maintenance of the Eraring Coal Conveyor. Conservative assumptions were used in the revised Air Quality Assessment, including continuous use of the stockpile and associated truck movements to and from the power station. - The EA compared air quality predictions for the increased level of production with those for the original project. This comparison shows little difference in resulting impacts at all nearby receivers. Air quality impacts are predicted to remain well within approved limits. - The current air quality management system includes real-time monitoring, dust deposition gauges, an on-site meteorological station, and regular unattended monitoring. The Department considers this system to be robust, and suitable for the increased production level. Notwithstanding, the mine's air quality management plan would be revised and, if necessary, updated, in accordance with existing conditions of approval. - The proposed modification would not increase the approved amount of coal produced by Centennial in its Newcastle Coalfield mines. Rather, it would transfer approved coal production from Newstan to Myuna. Therefore, whenever Newstan remains on care and maintenance, the proposed modification would have a negligible effect on existing reportable Scope 1, 2 and 3 GHGEs.	No change to existing conditions.
Water Management	- The mine's water management system does not require upgrading to handle the proposed increase in coal production. The system provides initial storage of minewater inflows in underground dams and settling ponds, delivery of this water to the surface for further storage, and then discharge to Lake Macquarie via the Wangi Power Station outflow canal under the conditions of the site's EPL. - The underground minewater storage system has sufficient capacity to handle the predicted increase in inflows associated with an increased mining rate. The proposed increase in extraction rate is predicted to result in only a small increase in groundwater inflow to the underground workings (from 7.5 to 7.9 ML/day). - Water discharges are expected to remain largely unchanged and within current licenced discharge limits. Myuna discharges water into the North Lake Macquarie water source which is managed under the <i>Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources</i>. Water discharges are overwhelmingly dominated by discharges from the Eraring Power Station (approximately 4,000,000 ML/year) and will continue to be so until the station is decommissioned in 2030. Excluding discharges from the power station, total discharges into the North Lake Macquarie water source are approximately 8,900 ML/year. - Peak discharges as a result of the proposed modification are predicted to be 2,050 ML/year in 2019, which would represent about 20% of discharges, if discharges from the power station are excluded. - In any case, current reported discharge rates are well below those predicted for the original Myuna project. The proposed modification is not predicted to exceed the previously-predicted average discharge rate for the existing approved production rate.	No change to existing conditions.

	- Centennial has a pollution reduction program on its EPL to ensure water quality impacts are minimised, and when the program is complete, EPA would review the current water quality limits on the EPL. - The mine's approved Water Management Plan would be reviewed and updated as necessary, which would include recalculating the mine's water balance in response to current (ie lower) groundwater extraction and discharge rates. - NOW raised no objection to the proposed modification, and considers that the existing conditions of approval remain suitable. A Water Sharing Plan for the <i>North Coast Fractured and Porous Rock Groundwater Sources</i> is currently being developed. Centennial would require a licence to extract groundwater from this source following commencement of this plan. The existing approval already requires Centennial to hold appropriate water licences for its operations.	
<i>Socio-economic Impacts</i>	- Around 90 workers from Newstan would transfer to Myuna. This would ensure continuity of employment for these workers, and avoid significant job losses within the company. - As Newstan Colliery is also located within Lake Macquarie City LGA, the Department considers that the proposed modification is unlikely to result in an increased demand for services within the LGA, and no additional socio-economic impacts would result from the proposal. - Only a small portion of the project falls within Wyong LGA. The project does not trigger any legislative requirement to make financial contributions to either WSC or LMCC. - The proposed modification would increase the royalty revenue stream to the Government from Myuna that has ceased since Newstan was placed on care and maintenance. Making additional Mandalong coal available to the export market would attract an increased royalty rate.	No change to existing conditions
<i>Biodiversity</i>	- Subsidence has not resulted in any impact to Lake Macquarie, including seagrass beds and benthic communities. - The proposal would not increase the approved subsidence levels or resulting impacts and environmental consequences. Approved mining systems and subsidence performance measures would continue to ensure that benthic communities of Lake Macquarie are appropriately protected from impacts. - Further, if second workings are undertaken in future, impacts to benthic communities and seagrasses would be effectively managed under the relevant management plans required under the Extraction Plan regime. - The approved Biodiversity Management Plan remains appropriate for the proposed modification. This plan includes measures to manage and enhance areas of <i>Swamp Sclerophyll Forest on Coastal Floodplains EEC</i> which occur along Wangi Creek.	No change to existing conditions.
<i>Traffic</i>	The proposed modification would add around 120 traffic movements (ie total in and out) a day to the local road network. The existing mine access intersection can adequately handle this increase. All local roads near the mine exhibit level of service "A". The proposed modification would not affect this level of service. No road upgrades are required to accommodate the proposed increase in staffing.	No change to existing conditions.
<i>Rehabilitation</i>	DRE recommended rehabilitation performance measures for the proposed modification. However, the Department considers the existing rehabilitation objectives adequately addresses the recommendations in DRE's submission, noting that DRE approved Centennial's Rehabilitation Management Plan (RMP) in October 2013 which satisfies the relevant project approval conditions as well as DRE's Mining Operations Plan requirements. Notwithstanding, the RMP is required to be reviewed and revised under existing conditions of approval, in consultation with DRE. This review process should allow for any changes to the RMP considered necessary by DRE.	No change to existing conditions
<i>Noise</i>	- The proposed modification would not result in any changes to approved surface activities. Operational noise levels are not predicted to increase over those predicted for the original project, and would continue to meet the criteria specified in the approval. - The Department considers that the noise monitoring program contained in the approved Noise Management Plan remains adequate for the proposed modification.	No change to existing conditions.

6. CONCLUSION

The Department has assessed the application in accordance with the relevant requirements of the EP&A Act and is satisfied that the impacts of the proposed modification would be effectively managed within the existing regulatory framework for the mine.

The proposed modification has a number of benefits, including:

- allowing continuity of employment for a significant proportion of Newstan Colliery's workforce,
- providing Centennial the ability to satisfy coal supply contracts with the power station with Myuna coal instead of Newstan coal or Mandalong coal; and
- allowing Centennial to export more of its high quality Mandalong coal.

The proposal would not substantially increase any of the approved impacts of the original project, and no upgrades to existing infrastructure are required to facilitate the increased production.

The Department considers that the existing mining systems would continue to limit subsidence impacts at built and natural features, including the biodiversity of Lake Macquarie. The current conditions of project approval would continue to effectively regulate the residual environmental impacts of the project. Consequently the Department believes the proposed modification is in the public interest and should be approved.

7. CONDITIONS

The Department considers the existing project approval provides a robust framework which allows the mine to operate efficiently and limits environmental impacts. No substantial changes to the existing conditions are recommended, except to change the approved production limit as the application has requested, and to update references to agency names and other administrative details.

The Department has accordingly prepared a Notice of Modification for the proposed modification (see Appendix D) and a consolidated project approval (ie as proposed to be modified, see Appendix E).

8. RECOMMENDATION

It is **RECOMMENDED** that the Executive Director, Resource Assessments & Compliance, as delegate of the Minister for Planning:

- **consider** the findings and recommendations of this report;
- **determine** that the proposed modification falls within the scope of section 75W of the EP&A Act;
- **approve** the modification application, subject to conditions; and
- **sign** the attached Notice of Modification in Appendix D.



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27.2.15



Oliver Holm
Executive Director
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27/2/15