

Mount Pleasant Coal Mine Extension of Mine Life (DA 92/97 MOD 3)

Environmental Assessment Report

Section 75W of the *Environmental Planning and Assessment Act 1979*

1. BACKGROUND

MACH Energy Australia Pty Ltd (MACH) owns the Mount Pleasant Coal Mine (Mount Pleasant), an approved open cut coal mine located approximately 4 kilometres (km) northwest of Muswellbrook in the Upper Hunter Valley (see **Figure 1**).



Figure 1: Locality plan

Mount Pleasant is located either adjacent or close to a number of other large open cut coal mining operations, including Bengalla and Mt Arthur, open cut coal mines to the south, and Dartbrook, an underground coal mine to the north. The Hunter River and associated alluvial farmlands are located east of the mine, while the land to the west is generally dominated by agricultural grazing land.

A number of regional roads surround and/or cross the Mount Pleasant mining lease, including Wybong, Kayuga and Castlerock Roads. The New England Highway is located 3 km to the east, passing through the town of Muswellbrook. Coal would be transported to the Port of Newcastle via the Muswellbrook to Ulan railway line, located south of Bengalla Mine (Bengalla), and then via the Main North Railway (see **Figure 1**).

1.1 History of the Site

On 22 December 1999, Coal and Allied Operations Pty Ltd (Coal and Allied), then a Rio Tinto-owned corporate entity, obtained development consent for Mount Pleasant under DA 92/97 from the then Minister for Urban Affairs and Planning. DA 92/97 permits extraction of up to 10.5 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal until 22 December 2020. DA 92/97 also allows for the construction of a rail loop and ancillary infrastructure to the west of where Bengalla's approved mining operations were at the time.

Mount Pleasant is located adjacent to Bengalla Coal Mine, which was originally approved in August 1995, under DA 211/93, by the then Minister for Urban Affairs and Planning. Bengalla is operated by Bengalla Mining Company (BMC), a joint venture partnership. At the time of its approval, Coal and Allied owned a 40 percent stake in Bengalla and its joint venture partners were Wesfarmers, Mitsui & Co Ltd and Taiwan Power Company.

From 2003 to 2004, Coal and Allied undertook early geotechnical survey and construction works at Mount Pleasant. Soon after, Coal and Allied made a strategic corporate decision, influenced by various factors such as limited port capacity, to focus on development at its other coal mining projects in the Hunter Valley.

On 19 September 2011, DA 92/97 was modified (Modification 1) to amend the mine infrastructure layout and allow for the construction of a conveyor/service corridor connecting to Bengalla's coal processing and loading infrastructure as an alternate product coal transport option to the approved rail loop and related coal loading infrastructure. Modification 1 thereby allowed a second coal transportation option, but not the construction or use of both options. The Secretary must be notified of the preferred choice prior to construction commencing.

Mount Pleasant and Bengalla have well established and mutually beneficial interactions with both mine sites containing land owned by the other. Likewise, the conditions of consent for Modification 1 allow Mount Pleasant to construct either its conveyor/service or rail corridor within Bengalla's approved disturbance area. On the other hand, BMC has constructed the Dry Creek clean water diversion dam (CW1) on land within Mount Pleasant's mining lease, to facilitate the temporary diversion of Dry Creek and the westward extension of Bengalla's mining operations (see **Figure 2**).

Various obligations have historically been imposed on both parties under the respective development consents. These include a requirement on BMC, under DA 211/93, to negotiate an agreement to provide Mount Pleasant (or other mining operations) with access to Bengalla's approved and constructed rail loop, should it require access to rail and subject to meeting relevant requirements, including some compensation for spent capital. Likewise, Modification 1 to DA 92/97 included a requirement for Mount Pleasant to enter into an agreement with the Minister for Mineral Resources, in consultation with Bengalla, to undertake to relocate the Mount Pleasant rail corridor or conveyor/service corridor if, in future, Bengalla was approved to extend further west. In essence, these conditions sought to ensure that the operators of the two mines cooperated so that both mines could continue operating in a mutually beneficial way, with minimal impacts on each other.

In May 2011, a Master Co-operation Agreement (MCA) was entered into by the two mines to manage their interactions. At the time, both mines were owned or part-owned by Coal and Allied. The MCA allows the operator of Mount Pleasant to construct and operate its rail corridor within Bengalla's mining lease, south of Wybong Road and west of where Bengalla's approved mining operations were at the time. Conversely, it allows BMC to construct water diversion infrastructure north of Wybong Road, on land within the Mount Pleasant mining lease. The MCA was developed to satisfy the requirements of DA 92/97 which were introduced by Modification 1.

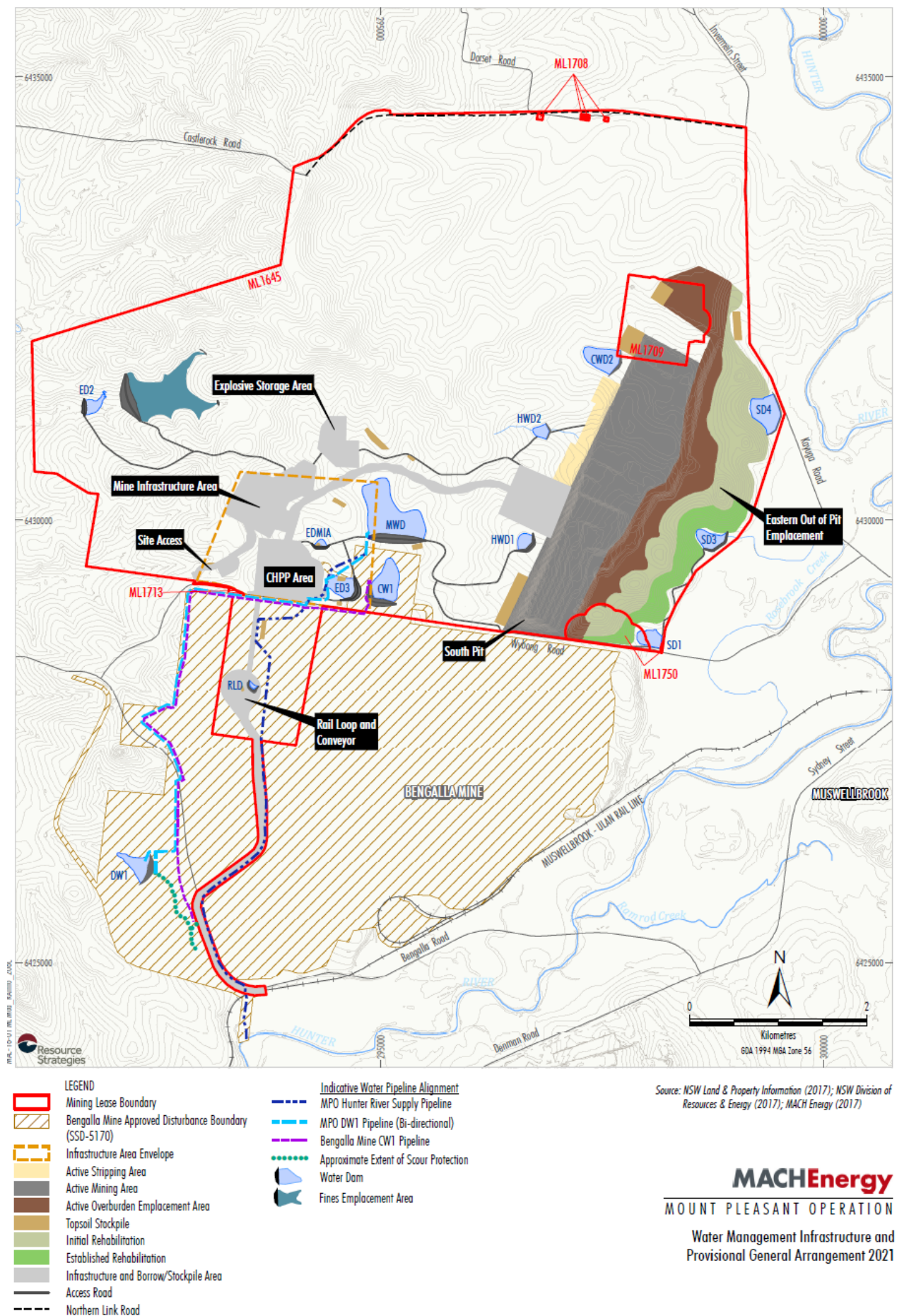


Figure 2: Interaction between Mount Pleasant and Bengalla

The MCA also allows BMC to require the operator of Mount Pleasant to relocate its infrastructure corridor if, amongst other circumstances, mining at Bengalla extends to the near vicinity of that infrastructure. To activate this provision of the MCA, BMC must issue a Relocation Notice to the operator of Mount Pleasant no later than 3 years and 6 months before the commencement of pre-mining activities in this area. The MCA requires both parties to engage in consultation to agree on a 'replacement coal transportation option', but also includes dispute resolution processes. The operator of Mount Pleasant is responsible for gaining the necessary approvals for the replacement option, and is not obliged to remove its existing conveyor or rail infrastructure until it obtains these approvals.

On 3 March 2015, the Minister for Planning approved the Bengalla Continuation Project (SSD 5170), which extended the life of Bengalla by 24 years until 28 February 2039. SSD 5170 allows for the progression of mining westwards through the area where Mount Pleasant's approved conveyor or rail infrastructure corridor would be located.

Later in 2015, Coal and Allied sold its stake in Bengalla to New Hope Group.

On 7 July 2016, Coal and Allied entered into a Deed of Undertaking with the Minister for Resources, Industry and Energy to comply with its obligations under both DA 92/97 and the MCA in relation to relocating the approved Mount Pleasant rail and ancillary infrastructure.

On 4 August 2016, Coal and Allied sold Mount Pleasant to MACH. The Deed of Undertaking (with the Minister for Resources, Industry and Energy) was subsequently novated to MACH in 2017.

1.2 Recent Development under MACH's Management

On 25 November 2016, substantial construction works commenced at Mount Pleasant. On 20 January 2017, MACH notified the Secretary that its preferred coal transportation option is by rail and construction of the rail spur and loop commenced shortly thereafter.

On 29 March 2017, DA 92/97 was modified for a second time (Modification 2) to relocate the South Pit Haul Road.

In April 2017, in anticipation of lodgement of the Modification 3 application for DA 92/97, BMC sought an order in the Land and Environment Court (LEC) restraining MACH from carrying out further development at Mount Pleasant.

On 31 May 2017, MACH lodged the Modification 3 application to extend the life of Mount Pleasant (see **Section 2**). During the exhibition period, BMC made a submission stating that it did not object to the extended life of Mount Pleasant, but had significant concerns around the interaction of the proposal with Bengalla's approved operations (see **Section 4.2**). These concerns centred around the proposed retention of Mount Pleasant's approved infrastructure corridor in the path of Bengalla's advancing mining operations. BMC stated that, if the modification were to be approved, it would impact on Bengalla's operations, potentially resulting in financial and employment losses.

In August 2017, as per the MCA, BMC served the Relocation Notice notifying MACH of the need to relocate its rail infrastructure, despite the fact its construction had only recently commenced.

On 22 September 2017, MACH lodged a separate modification application (Modification 4) for the relocation of the rail infrastructure. MACH identified that the purpose of Modification 4 would be to, in part, address the concerns over the potential impacts of the approved infrastructure corridor on the continued operations of Bengalla. Nonetheless, BMC continued to have reservations over the potential impact that an extension of Mount Pleasant's mine life, and any associated delay in removal of the rail infrastructure, may have on Bengalla's continued operations.

Following protracted out-of-court negotiations between MACH and BMC, the parties reached an agreed position on 24 April 2018. On the same date, the parties signed a Deed of Agreement (to complement the MCA), which details the actions both parties must take in respect of removal of the infrastructure corridor. The Agreement provides for the avoidance of the potential impact that the approved location of Mount Pleasant's infrastructure corridor would have had on the progress of mining at Bengalla. The Agreement requires that MACH takes all necessary measures to ensure that its infrastructure corridor does not interfere with Bengalla's future mining operations (see **Figure 2**). It also places obligations on BMC to allow its land to be used for a replacement rail loop location, if feasible.

The Deed of Agreement, and the parallel amendment of the Deed of Undertaking with the Minister for Mineral Resources, fully address BMC's concerns over possible future impacts on Bengalla's mining operations. MACH has accepted that the changes would require the future removal of the rail

infrastructure that it is currently constructing. It also accepts that development consent to locate rail infrastructure in an alternative corridor would be subject to a separate modification assessment (as this is outside the scope of the Modification 3 application).

The parties took the following actions to formalise the Agreement:

- MACH and BMC released a joint public statement on 24 April 2018 to notify the public of the parties' position;
- MACH and BMC discontinued the LEC proceedings, with each party bearing its own costs;
- BMC and the joint venture partners formally withdrew their objections to Modification 3 (see **Section 4.2.1**);
- BMC submitted a letter in support of Mount Pleasant, including proposed Modifications 3 and 4;
- MACH, with support from BMC, received approval from the Minister for Resources to amend the Deed of Undertaking in respect of the Agreed Infrastructure Relocation Terms; and
- MACH submitted a request, as part of Modification 3, for the amendment of the relevant condition of consent and inclusion of a new Statement of Commitment in DA 92/97 requiring the removal of the infrastructure corridor by 31 October 2022, to give effect to the agreed position.

The Department notes that the proposal to amend condition 37 (and the supplementary Statement of Commitment) reflects the future *removal* of the rail infrastructure, but not its *relocation*. The proposed deadline for removal (October 2022) reflects the fact that Mount Pleasant has no other alternative approved corridor for coal transportation at the current time, thus necessitating use of its recently constructed rail line on the Bengalla site for this relatively short period of time.

2. PROPOSED MODIFICATIONS

2.1 Modification 3

On 31 May 2017, MACH lodged an application to modify DA 92/27 under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposed modification seeks to:

- extend the life of the DA 92/97 for an additional six years until 22 December 2026;
- make minor changes to the approved mining methods;
- extend the Eastern Out of Pit Emplacement Area (OEA) by approximately 67 hectares (ha) and relinquish the northern portion of the South West OEA;
- increase the construction workforce from 250 to 350 people, to expedite construction; and
- remove the Mount Pleasant rail loop and associated infrastructure.

The proposed modification does not seek to change the rates of ROM coal production, coal processing or waste rock production. **Table 1** summarises the proposed modification in comparison with the existing approved operations. A detailed description of the modification is provided in the Environmental Assessment (EA) (see **Appendix A**).

Table 1: Comparison of approved and proposed operations

Component	Approved	Proposed
Mine Life	<ul style="list-style-type: none"> • Until 22 December 2020 	<ul style="list-style-type: none"> • Until 22 December 2026
ROM Coal Production	<ul style="list-style-type: none"> • Up to 10.5 Mtpa 	<ul style="list-style-type: none"> • No change
Mining Method	<ul style="list-style-type: none"> • Open cut mining methods including truck, shovel and dragline operations 	<ul style="list-style-type: none"> • Open cut mining methods including truck and shovel operations (ie no dragline)
Waste Rock Production	<ul style="list-style-type: none"> • Up to 53 million bank cubic metres (Mbcm) per annum 	<ul style="list-style-type: none"> • No change
Waste Rock Emplacement	<ul style="list-style-type: none"> • Waste rock emplaced in-pit and within four major out-of-pit emplacement areas to the east, southwest and northwest of the open cuts 	<ul style="list-style-type: none"> • Extension of the Eastern OEA by approximately 67 ha • Incorporation of micro-relief and macro-relief aspects into the Eastern OEA • Relinquishment of the northern portion of the South West OEA
Coal Handling	<ul style="list-style-type: none"> • Onsite Coal Handling and Preparation Plant (CHPP) 	<ul style="list-style-type: none"> • No change
Coal and Fine Rejects	<ul style="list-style-type: none"> • Coarse rejects placed within mined out voids, out-of-pit emplacements and to build fines emplacement walls. • Fine rejects stored in the Fines Emplacement Area 	<ul style="list-style-type: none"> • No change
Coal Transportation	<ul style="list-style-type: none"> • Coal transported to the 	<ul style="list-style-type: none"> • No change

	Muswellbrook – Ulan Rail Line by either: <ul style="list-style-type: none"> ○ a conveyor / service corridor to Bengalla's rail loop; or ○ Mount Pleasant's dedicated rail loop and loader facilities 	
Water Supply	<ul style="list-style-type: none"> • Groundwater inflows, catchment runoff and take from the Hunter River 	<ul style="list-style-type: none"> • Groundwater inflows, catchment runoff and take from the Hunter River • Water sourced from Bengalla and Dartbrook Mines to reduce take from Hunter River, when possible
Operational Workforce	<ul style="list-style-type: none"> • 380 people 	<ul style="list-style-type: none"> • No change
Construction Workforce	<ul style="list-style-type: none"> • 250 people 	<ul style="list-style-type: none"> • 350 people
Operational Hours	<ul style="list-style-type: none"> • 24 hours a day, 7 days a week 	<ul style="list-style-type: none"> • No change

MACH argues that Modification 3 would allow continued coal extraction for an additional 6 years, thereby providing continued coal production, additional revenue to NSW and employment within the Muswellbrook and wider Hunter Valley areas, without a significant increase in the environmental and social impacts beyond those already approved under DA 92/97.

2.2 Modification 4

On 22 September 2017, MACH lodged an application for Modification 4 of DA 92/97. The application, which is currently being assessed by the Department, seeks approval for the proposed relocation of the infrastructure corridor. The modification would entail:

- duplication of product coal transport infrastructure, including construction and operation of a rail spur, rail loop, conveyor, rail load-out facility and associated services;
- duplication of water supply infrastructure, including construction and operation of a pump station, water pipeline to the Hunter River and associated electricity supply; and
- demolition and removal of the existing approved product coal transport infrastructure and water supply infrastructure within the extent of Bengalla, once the new infrastructure is fully operational.

BMC has indicated its support for Modifications 3 and 4 and that it would assist in making land available for construction of long-term rail and ancillary infrastructure for Mount Pleasant. In the event that Modification 4 (addressing the relocation of the infrastructure corridor) is not approved, Mount Pleasant would not be able to transport coal directly from the site. Under these circumstances MACH would therefore need to seek alternative options for coal transportation, such as agreement with BMC to process and/or transport coal via its facilities or exploration of alternative transportation routes with other neighbouring operations.

3. STATUTORY CONTEXT

3.1 Section 75W

DA 92/97 was granted in 1999, under Part 4 of the EP&A Act. The project is a transitional Part 3A project under Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*. The power to modify transitional Part 3A projects under section 75W of the Act, as in force immediately before its repeal on 1 October 2011, has now been discontinued. However, as this modification request was made before the 'cut-off date' of 1 March 2018, the provisions of Schedule 2 (clause 3) of this Regulation continue to apply. Consequently, this report has been prepared in accordance with the requirements of Part 3A and the Regulation, and the approval authority may approve or disapprove the carrying out of the project under section 75W of the EP&A Act.

The Department is satisfied that the proposal can be characterised as a modification to the existing development consent. The core components of the development, such as the rates of ROM coal production, coal processing or waste rock production, wouldn't change. The proposed emplacement extension is located wholly within existing mining leases. The proposed emplacement area extension is a minor component of the site's total disturbance footprint and would result in smaller disturbance area in comparison with the approved surface disturbance area. The proposed modification represents a six-year life extension to the current 21-year mine life.

The Department is satisfied that the modification application is within the scope of section 75W, and may be determined accordingly.

3.2 Approval Authority

In accordance with section 4.5 of the EP&A Act and clause 8A(1) of *State Environmental Planning Policy (State and Regional Development) 2011*, the Independent Planning Commission of NSW (IPCN) is the approval authority and must determine the application, as more than 25 public submissions in the nature of objections were received.

3.3 Environmental Planning Instruments

A number of environmental planning instruments apply to the modification, including:

- *SEPP (Mining, Petroleum Production and Extractive Industries) 2007*;
- *SEPP (Infrastructure) 2007*;
- *SEPP (State and Regional Development) 2011*;
- *SEPP No. 33 – Hazardous and Offensive Development*;
- *SEPP No. 44 – Koala Habitat Protection*;
- *SEPP No. 55 – Remediation of Land*; and
- *Muswellbrook Local Environmental Plan 2009*.

The Department has considered the proposed modification against the relevant provisions of these instruments, as well as MACH's consideration of these instruments in the EA. Based on this assessment, the Department is satisfied that the proposed modification can be carried out in a manner that is generally consistent with the aims, objectives and provisions of these instruments.

3.4 Objects of the EP&A Act

The approval authority must consider the objects of the EP&A Act when making decisions under the Act. The objects of the EP&A Act changed on 1 March 2018. The Department has assessed the proposed modification against the current objects of the EP&A Act. The objects of most relevance to the decision on whether or not to approve the proposed modification are found in section 1.3 of the Act. They are:

- Object 1.3(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*;
- Object 1.3(b): *to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment*;
- Object 1.3(c): *to promote the orderly and economic use and development of land*;
- Object 1.3(e): *to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats*;
- Object 1.3(f): *to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)*;
- Object 1.3(i): *to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State*; and
- Object 1.3(j): *to provide increased opportunity for community participation in environmental planning and assessment*.

The Department is satisfied that the proposed modification encourages the proper management and development of resources (Object 1.3(a)) and the promotion of the orderly and economic use of land (Object 1.3(c)), since the:

- modification involves a permissible use of land on the subject land;
- targeted coal resource has been determined to be significant from a State and regional perspective;
- targeted coal resource is located within existing mining lease areas, in a region that is dominated by coal mining operations;
- modification can be largely carried out in conformity with the existing mine design; and
- modification would provide ongoing socio-economic benefits to the community of NSW.

The Department has considered the principles of ecologically sustainable development (ESD, Object 1.3(b)) in its assessment of the proposed modification. The Department has also noted MACH's consideration of these matters (see Section 6.1.1 of the EA), and considers that the proposed modification is able to be carried out in a manner that is consistent with the principles of ESD. The Department's assessment has sought to integrate all significant environmental, social and economic considerations.

Consideration of the protection of the environment and heritage (Objects 1.3(e) and (f)) is provided in **Section 5** of this report. The Department believes that the proposed modification has been designed to

minimise potential environmental and heritage impacts where practicable, including on threatened biodiversity and Aboriginal cultural heritage items.

The Department exhibited the modification application and made the accompanying EA publicly available (Object 1.3(j)). A number of submissions were received from public or special interest group (SIG) and Government agencies. The Department considered, in **Sections 3.5** and **5**, potential impacts of the proposed modification on the Commonwealth approval under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) and consulted, as noted in **Section 4.1**, with the Muswellbrook Shire Council (Object 1.3(i)).

3.5 Commonwealth Approval

Mount Pleasant was granted approval under the EPBC Act (EPBC 2011/5795). As DA 92/97 was approved in 1999, the Mount Pleasant development consent predates the *NSW Biodiversity Offsets Policy for Major Projects* and was not required to provide an offset under this policy. EPBC 2011/5795 required establishment of a 13,522-ha offset area.

4. CONSULTATION

After accepting the EA for the proposed modification, the Department:

- publicly exhibited the EA from 16 June to 17 July 2017 on the Department's website and at:
 - NSW Service Centres (electronic copy);
 - Muswellbrook Shire Council's office (hard copy); and
 - the Nature Conservation Council's office (hard copy); and
- advertised exhibition of the EA in the *Muswellbrook Chronicle* and *Hunter Valley News*; and
- notified relevant public authorities and Muswellbrook Shire Council (Council).

The Department is satisfied that the notification process met the requirements of the EP&A Act and the EP&A Regulation.

The Department received 355 submissions during the exhibition period, comprising:

- 11 from public authorities, including Council;
- 86 public and SIG submissions in support;
- 250 public and SIG submissions in objection; and
- 8 public and SIG submissions providing comment.

Four objectors (BMC and three of the joint venture partners) subsequently withdrew their submissions (see **Section 4.2.1**). One late submission, in the nature of an objection from a resident of Aberdeen, was received on 26 April 2018. MACH provided a response to submissions (RTS), including a specific response to the late submission. A summary of the issues raised by the submissions is provided below. A full copy of these submissions is provided in **Appendix B** and MACH's Response to Submission (RTS) is provided in **Appendix C**.

4.1 Agency submissions

The **Environment Protection Authority** (EPA) accepted the noise and blast components of the EA, subject to the following matters being addressed:

- provision of updated tables in DA 92/97 listing noise criteria and identifying land/receiver locations where additional mitigation is available or land subject to voluntary acquisition;
- exceptional meteorological conditions;
- modifying factor adjustments to proposed noise limits; and
- measurement of meteorological conditions at an onsite weather station.

In response to the last two matters, MACH stated that modifying factor adjustments would be applied consistently with the applicable policy and that it would use the sigma-theta method at an onsite monitoring station.

The EPA also noted that no correction factor had been added to noise levels to account for low frequency noise. MACH responded that, based on experience at other NSW operations, it is unlikely that low frequency noise would be a concern at Mount Pleasant. Matters related to noise impacts, mitigation and management are given consideration in **Section 5.1**.

The EPA noted that some of the figures in the EA appeared to depict unlicensed discharges to the Hunter River and Sandy and Rosebrook Creeks. In particular, it was unclear if the EA proposed to discharge from the Fines Emplacement Area (FEA) to Sandy Creek or from various dams to the Hunter River via Dry Creek, on Bengalla's site. The EPA recommended that all discharges from the FEA be

contained onsite and requested further information regarding the design and nature of potential discharges from dams. These matters are considered in **Section 5.3**.

The EPA also raised concerns regarding the depiction of 'active waste' in figures in the Site Water Balance Review and requested further information on the design criteria of the FEA. Additionally, the EPA requested information in relation to the proposed water supply arrangements with neighbouring mines. MACH clarified that 'active waste' was a reference to the default catchment type used for hydrology modelling and does not refer to active deposition of waste. Regarding water supply from neighbouring mines, MACH indicated its willingness to consider the option but noted that more information would be required to assess water availability and quality and the availability of this water resource would depend on its neighbouring mines.

In relation to air quality, the EPA noted that some receivers on privately-owned land were predicted to experience exceedances of the annual average PM₁₀ criterion in the absence of additional mitigation. Additionally, the EPA noted that 12 receivers could experience additional days above the 24-hour PM₁₀ and PM_{2.5} criteria, should proactive and reactive management measures not be implemented. This is further discussed in **Section 5.2**.

The **Department of Industry – Water** (Dol Water) raised no concerns over the proposed modification, but requested that MACH update the mine's Water, Rehabilitation and Waste Management Plans should the modification application be approved. Dol Water also advised that a Water Access Licence (WAL) should be obtained to accommodate groundwater inflows into the open cut pit until 2026 and that MACH should update its Groundwater Management Plan to reflect the extended mining period. The Department notes that, under DA 92/97, MACH is already required to revise its relevant strategies, plans and programs following a modification and to seek any relevant water licences under the *Water Act 1912* and/or *Water Management Act 2000*.

The Department's **Division of Resources and Geoscience** (DRG) verified that the extended mine life would deliver approximately 63 Mtpa of ROM coal and that the proposed product quality, market split and yield are achievable. DRG conducted an assessment of the resource and concluded that the mine plan would adequately recover coal resources and provide an appropriate return to the State.

DRG requested clarification regarding sustainable rehabilitation outcomes, post-mining land uses, final landform design, mine layout and scheduling, rehabilitation monitoring, and barriers and limitations to successful rehabilitation. In response, MACH met with DRG, included a detailed response to the queries in the RTS and provided a Preliminary Rehabilitation Strategy further detailing rehabilitation and post-mining land use aspects. The final landform and rehabilitation is considered in **Section 5.4**.

Council considered that the modification should require reconsideration of Mount Pleasant's overall impacts and that the assumptions underpinning the original development consent had since changed. Council advised that it required a number of experts to assess the impacts of the modification and as such, had not had enough time to assess the proposal. The Department received further comments from Council following its review of MACH's RTS.

Council's post-RTS comments included a recommendation that MACH be required to construct an alternate coal transportation route within two years of determination of the modification. This recommendation came in response to concerns raised by BMC that the extension of mine life at Mount Pleasant may interfere with the progression of mining operations at Bengalla. This matter was subsequently addressed by the Deed of Agreement (see **Sections 1 and 2**).

Council recommended that the improved final landform design be confirmed via an updated Rehabilitation Strategy and Closure Plan. The Department notes that, under DA 92/97, the Landscape and Rehabilitation Management Plans must be updated following modification and that compliance with the EAs for previous modifications, including the descriptions of the final landform, is already included as a consent condition. If Modification 3 is approved, the relevant management plans would be updated accordingly. Rehabilitation and the final landform are considered in **Section 5.4**.

Council advised that the Western Roads Strategy had been superseded by the Mining Affected Road Network Plan and recommended that MACH contribute to Council's review of the plan as it relates to the development and to the design of a link road between Denman Road and the New England Highway. Council also recommended that MACH pay contributions for the construction, renewal or maintenance of road infrastructure, in accordance with Council's Resourcing Strategy for the Funding of Mining Affected Roads. Council recommended conditions of consent imposing restrictions on the use of Wybong Road to the east of Rosebrook Creek and west of the Mangoola Mine Entrance. Matters related to roads are further considered in **Section 5.6**.

The **Upper Hunter Shire Council (UHSC)** acknowledged that Mount Pleasant is located outside of the UHSC local government area, but objected on the basis of concerns over cumulative impacts of coal mining across the Hunter region. In particular, UHSC noted the risks that coal mining poses to other critical industries of the region, including the viticulture and equine industry. This concern is addressed in **Section 4.2.1**.

UHSC referenced the Planning Assessment Commission's refusal of the Drayton South Project as an important precedent for other mining applications. UHSC identified that Mount Pleasant is one of three mines within the Muswellbrook region that are yet to commence coal extraction and raised concern regarding the cumulative impacts of these mines once in operation, as well as their proximity to the town of Aberdeen. Further, UHSC considered that a satisfactory methodology to assess cumulative impacts has not yet been established and that the EPA's air quality monitoring network had recorded exceedances of particulate matter emissions. Cumulative impacts on noise, air quality and visual amenity are discussed in **Sections 5.1, 5.2 and 5.6**, respectively.

Lastly, UHSC highlighted that the town of Aberdeen would likely encounter a loss of visual amenity from the Mount Pleasant and Dartbrook mines due to its location. Potential impacts on visual amenity are considered in **Section 5.6**.

NSW Health noted that additional receivers would be eligible for mitigation and acquisition rights due to predicted noise criteria exceedances following the proposed modification and requested that MACH undertake clear and open consultation with these receivers to ensure they are aware of the impacts and their rights. MACH agreed to this recommendation and advised that consultation had already been undertaken with receiver 136 (See **Section 5.1**).

NSW Health raised concerns over licensed discharges of surplus water into the Hunter River via the Hunter River Salinity Trading Scheme (HRSTS), and the potential impacts on the Muswellbrook drinking water supply. Concerns were also raised regarding the use of Hunter River water as potable water onsite. MACH advised that the proposed modification does not seek to alter the supply or storage of potable water onsite. However, potable water would be treated to the appropriate standard or supplied by a contractor, in accordance with the *Public Health Act 2010*. Management of potential surface water impacts is considered in **Section 5.3**.

NSW Health noted that the mine is located in close proximity to the town of Muswellbrook and that nine privately-owned receivers are predicted to experience exceedances of the current annual average PM₁₀ impact assessment criterion of 25 µg/m³. NSW Health emphasised that air quality goals for the development should be consistent with current impact assessment standards and not former development approvals. As noted above, MACH is not required to update impact studies unless they are relevant to the scope of modification. Nonetheless, the Department notes that MACH updated its existing air quality impact assessment (in accordance with the 2005 air quality standard) to verify whether the development would result in increased impacts on air quality since Modification 1 (see **Section 5.2**).

NSW Health also requested that the air quality assessment consider future air quality goals that the National Environment Protection Council (NEPC) is planning to implement by 2025. It was requested that isopleth diagrams be updated to reflect potential future air quality standards. MACH responded that it is unreasonable to assess the proposed modification against potential future standards that do not currently apply in NSW.

The **Office of Environment and Heritage (OEH)** raised no concerns over the proposed modification and noted that Aboriginal heritage sites within the emplacement extension footprint are appropriately managed under existing permits and management plans. OEH acknowledged the improved biodiversity outcomes associated with relinquishment of the northern portion of the South West OEA, which would result in retention of a larger area of land of greater biodiversity value.

Subsidence Advisory NSW raised no objections to the proposed modification, but commented that MACH should ensure it is aware of the proposed changes to the *Mine Subsidence Compensation Act 1961*, which have since taken effect.

The **Heritage Council of NSW** noted that no State Heritage Register items would be affected as a result of the proposed modification, and as such, no further comment was required.

The **Australian Rail Track Corporation** raised no objections, noting that the proposed modification would not affect the rail network capacity nor pose any material change to rail access arrangements for the development.

4.2 Public and Special Interest Group Submissions

4.2.1 Objections

The Department received 250 submissions in the nature of objections from the general public and SIGs during the exhibition period. The key issues raised by objectors are presented in **Figure 3**. A number of objectors raised more than one issue, but the most common issue raised was the potential interactions between Mount Pleasant and Bengalla.

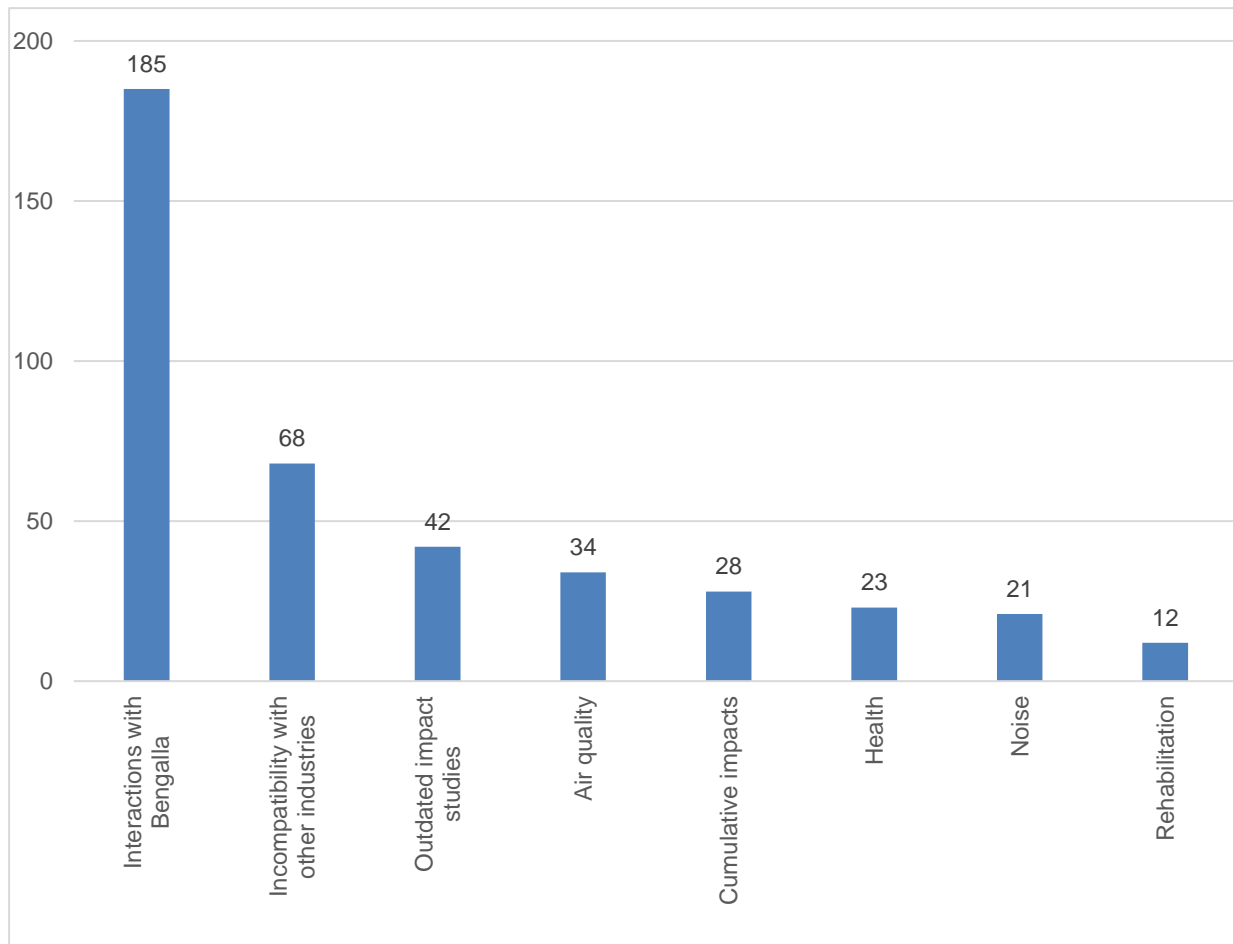


Figure 3: Issues raised in Objections

Interactions with Bengalla

As identified in **Section 1.2**, early in 2017 MACH commenced construction of its approved infrastructure corridor within Bengalla's approved disturbance area (see **Figure 2**). In the interim, Bengalla has been progressively mining towards the west and, in August 2017, formally notified MACH, as per the MCA, of the need to relocate the rail and ancillary infrastructure.

Figure 3 highlights that the potential disruption of Bengalla was raised in 185 of the 246 objections (75%). Objections were received from BMC, New Hope Group, Mitsui & Co Ltd and Taiwan Power Company. At least 68% of the remaining 246 objections were from entities, employees or people closely associated with Bengalla (eg contractors and family members of employees). These objections reflect concerns over the potential loss of employment that could occur if Bengalla were to cease operations due to Mount Pleasant, as well as other associated impacts to livelihoods and the local community. The majority of submissions was solely focused on the interactions with Bengalla rather than other issues (eg impacts on other industries or environmental and health impacts). Several objectors' comments failed to mention Mount Pleasant at all, instead discussing the merits of Bengalla. Other objectors expressed support for Mount Pleasant, should the issues around the interactions with Bengalla be resolved.

Following the settlement of the Deed of Agreement, BMC, New Hope Group, Mitsui & Co Ltd and Taiwan Power Company withdrew their submissions and the Department removed these objections from its website. BMC took no action to seek the withdrawal of these 'secondary' objections.

The Department notes that the Deed of Agreement has now resolved concerns over the interactions of Mount Pleasant with Bengalla, which is no longer considered to be an issue for assessment. As noted

above, BMC and three joint venture partners have withdrawn their objections. However, it was not considered readily feasible or necessary to provide an opportunity for all other relevant submitters to provide amended submissions.

Incompatibility with other Industries

The remaining objections were mainly from residents or SIGs in the Muswellbrook or Upper Hunter Shire local government areas. 68 objections raised concern with the incompatibility of coal mining with other industries in the region. Specifically, these objections referred to the viticulture, equine and tourism industries. Many submitters argued that the development had not substantially commenced mining operations, despite being approved in 1999. As land use conflicts had evolved throughout the region, it was argued that the commencement of mining operations at this late stage warrants greater consideration of the potential impacts on other industries.

SIGs, such as the Hunter Thoroughbred Breeders Association (HTBA) and Scone Equine Hospital, raised concern that the proposed modification has potentially significant impacts on many aspects of the equine industry, including their international industry reputation. Their submissions also raised broader concerns in relation to the proposed modification's impacts on the Hunter's water resources, air quality, noise and visual aesthetics. Similar concerns were also raised in relation to the viticulture and tourism industries. Impacts on amenity and surrounding land uses are considered in detail in **Section 5** below.

Outdated Impact Studies

42 submissions identified the significant delay in commencing major development works onsite and questioned the validity of the impact studies conducted in 1997. As coal extraction has not yet commenced, many submitters considered it appropriate for MACH to provide a current assessment of the mine's potential impacts. Particular attention was drawn to cumulative impacts (including air quality, noise and visual amenity) in light of the development of other mines and industries within the region. Cumulative impacts on air quality, noise and visual amenity are discussed in the relevant sub-sections of **Section 5**.

The Department notes that MACH is not required to update impact studies unless they are relevant to the scope of the modification. As part of the EA preparation, MACH contemporised a number of the impact studies and the Department is satisfied that the remaining studies from 1997 still remain relevant.

Cumulative Impacts

Collectively, 78 submissions raised concern over potential air quality, noise and health impacts associated with the proposed modification. The extension of the Eastern OEA would be closer to Muswellbrook and Aberdeen, which could exacerbate the air quality and noise emissions experienced by residents of these towns. Many submitters stated that the average cumulative PM₁₀ and PM_{2.5} concentrations recorded in the Muswellbrook region had exceeded relevant criteria in recent years. Cumulative impacts are considered in the relevant sub-sections of **Section 5**.

Rehabilitation

12 submissions expressed concern over rehabilitation. Some objections considered the conceptual rehabilitation plan for 2026 to be unrealistic, given the available timeframe, and expressed concern that MACH may therefore seek a further extension to the mine life. Other submissions raised concern that the proposed conceptual landform may not be achievable in the transition from active mining to a rehabilitated state. The Department has considered these matters further in **Section 5.4**.

4.2.2 Support

The Department also received 85 submissions from the general public and SIGs in support of the proposal, which are summarised in **Figure 4**. Approximately 65% of these submissions identified the employment opportunities that Mount Pleasant would provide, and that the extension of the mine's operating life would prolong these employment opportunities. Other submissions expressed general support for the benefits to the local economy, the support that the mine provides to the local community and the expected improved final landform design. Socio-economic impacts and benefits are addressed in **Section 5.5** below.

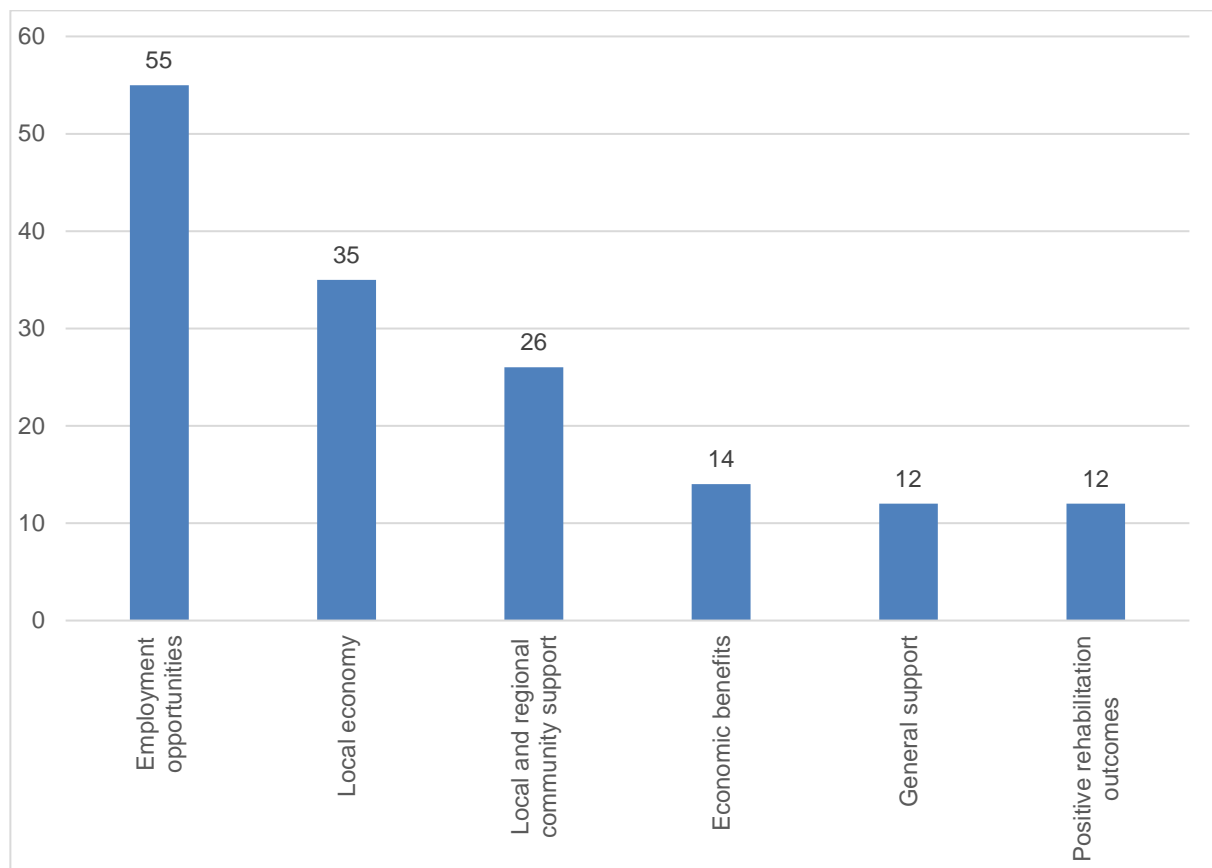


Figure 4: Matters raised in support

4.3 Response to Submissions

MACH provided a detailed RTS which addressed submissions from public authorities, the community and SIGs. The RTS and MACH's response to the late submission from a resident in Aberdeen were placed on the Department's website. The RTS summarised the submissions into four groups, being Government agencies, non-government organisations, BMC and the public, and provided responses to the specific issues raised in submissions by each group. The RTS also included analysis of the submissions, discussion of the engagement activities undertaken by MACH and a concluding statement that, following review of the issues raised by submissions, MACH did not propose any change to the requested modification. The submissions and RTS are attached in **Appendices C** and **D**, respectively.

5. ASSESSMENT

The Department has assessed the merits of the proposed modification in accordance with the relevant objects and requirements of the EP&A Act. In assessing these merits, the Department has considered the:

- Environmental Impact Statement (EIS) for the original development application;
- conditions of consent for the development, as amended by Modifications 1 and 2;
- the application for Modification 3, the associated EA and accompanying documents; and
- relevant environmental planning instruments, policies and guidelines.

The Department considers the key matters for consideration to be the potential impacts on noise, air quality, surface water, the proposed rehabilitation and final landform and the potential socio-economic impacts and benefits. These, and minor impacts, are considered below. The proposed modification is not considered to substantially change the approved groundwater or blasting impacts.

5.1 Noise

The ambient noise environment is complex and affected by several significant noise sources. The existing conditions of consent distinguish between construction, operational, low frequency and rail noise. The conditions also require MACH to manage both project-specific and cumulative noise.

MACH is required to implement best practice noise management to minimise construction, operational and rail noise, undertake real-time noise and meteorological monitoring and take responsive action, in coordination with nearby mines, to ensure compliance with its consent requirements. These

management measures must be documented and implemented in accordance with the mine's Noise Management Plan.

MACH prepared an Environmental Noise Model (ENM) to predict whether the operational aspects of the proposed modification would alter noise emissions at individual receivers and within the NAGs.

5.1.1 Updated Receivers

Noise receivers surrounding the project are classified as being in either rural, suburban or industrial noise environments. The existing conditions of consent group noise receivers within 11 Noise Assessment Groups (NAGs) which were used, in accordance with the *NSW Industrial Noise Policy 2000* (INP), to determine the noise criteria for Modification 1 in 2011.

As part of the proposed Modification 3, MACH reviewed all current receivers located in the vicinity of Mount Pleasant. The review considered 199 privately-owned dwellings, as well as 58 mine-owned dwellings and 25 commercial receivers. The review considered the specific noise criteria already applying to individual receivers and whether rights for additional noise mitigation or voluntary acquisition had already been applied under conditions of consent. The review also included receivers which were newly identified or had been omitted in error from the Modification 1 EA. These were assigned specific noise criteria based on their location within existing NAGs or close to other specific receivers.

Twelve existing receivers with voluntary acquisition rights (101, 107, 129, 130, 135, 137, 138a, 146, 263, 309, C and D) were identified as having been acquired by MACH since Modification 1. MACH also identified that the residence at Receiver 229 was incorrectly identified in the Modification 1 EA and is actually located further to the east at the location shown in the current EA as Receiver 35b. These receiver numbers have therefore been removed from the proposed list of receivers with acquisition rights. In addition, five existing receivers with rights for additional noise mitigation measures (78, 240, 242, 279 and 290) were identified as having no dwelling or having been acquired by MACH and were also removed from the proposed list of receivers with mitigation rights.

MACH also recommended renumbering various existing receivers to maintain consistency with an updated list of receivers. It is proposed that this updated numbering is reflected in updated tables and figures in the recommended conditions of consent.

5.1.2 Updated NAG Boundaries

The proposed modification presents an opportunity to amend and simplify the existing 11 NAGs. MACH has proposed to adjust the boundaries of NAGs 5 and 11 to include additional receivers who are mainly impacted by traffic noise, due to their proximity to either the New England Highway or Denman Road.

Further, the noise criteria generally applicable to NAGs 1, 2, 3, 4 and 10 are equivalent to the default background criteria (ie 35 dB(A) during day, evening and night). In order to simplify the expression of the criteria in the consent, it is proposed that these NAGs are removed. All receivers within these NAGs (other than those specifically named) would remain subject to these same criteria (ie 35 dB(A) during day, evening and night).

The Department concurs with MACH's proposals and recommends that the NAGs are updated and simplified by:

- including new receivers;
- removing incorrect and acquired receiver locations;
- removing NAGs 1, 2, 3, 4 and 10; and
- adjusting the boundaries for NAGs 5 and 11 (see **Figure 5**).

The EA identifies that the modification would not be seeking to increase the currently approved noise limits for NAGs in Muswellbrook township. As such, the Department recommends that there are no changes to the existing noise criteria for individual receivers in NAGs 6, 7, 8 and 9. The Department notes that MACH is required to undertake real-time noise monitoring toward the western boundary of the NAGs located east of the mine, to demonstrate its compliance with these existing criteria within these NAGs.

However, the Department notes that the EPA's submission identified the need for further consideration of exceptional meteorological conditions as part of any monitoring program. To address this, the Department recommends that the conditions of consent are updated to require that monitoring account

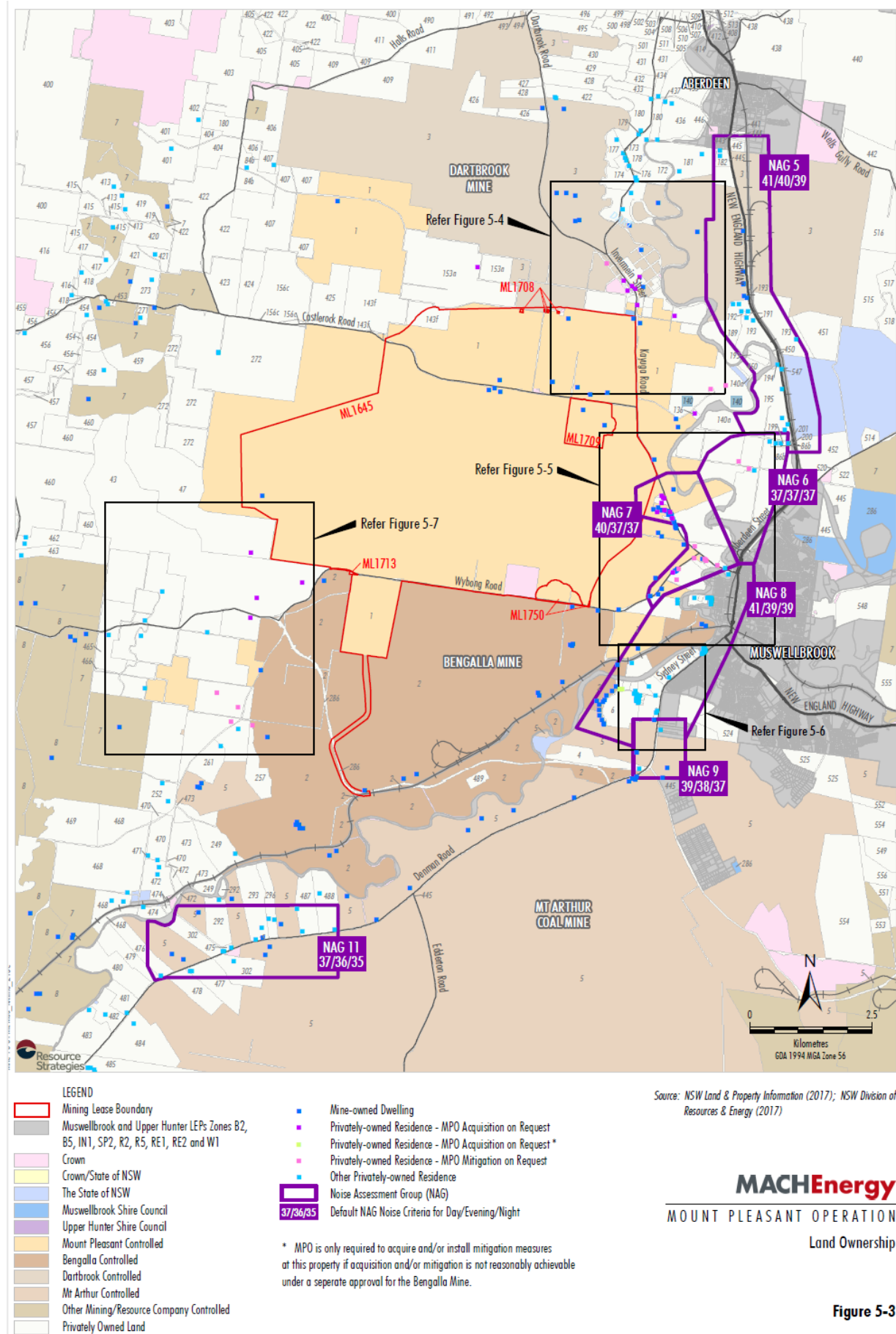


Figure 5-3

Figure 5: Amended Noise Assessment Groups (NAGs)

for the possibility of noise enhancing conditions, eg noise being deflected over the eastern site boundary due to wind or temperature inversions.

In addition to considering intrusive noise impacts at privately owned residences, the current VLAMP identifies that voluntary land acquisition rights should only be applied on land where the development is predicted to contribute to exceedances of the recommended maximum amenity criterion in Table 2.1 of the INP on more than 25% of any privately-owned land where there is an existing dwelling or where a dwelling could be built under existing planning controls. The essential purpose of the INP is to protect residential amenity, rather than to require purchase of unoccupied land if noise limits are exceeded. It is therefore recommended that existing consent conditions are made consistent with these provisions.

The Department notes that, previously standard conditions specifying noise acquisition criteria and cumulative noise acquisition criteria have become redundant since Modification 1 was determined. These criteria are no longer specified in contemporary conditions as these scenarios are now effectively addressed by application of the *Voluntary Land Acquisition and Mitigation Policy* (VLAMP) during the assessment stage. The Department therefore recommends that the consent be contemporised by removing these conditions.

5.1.3 Updated Noise Predictions

The ENM predicted emissions from Mount Pleasant, including the proposed modification, during representative years 2018, 2021 and 2025, which represent the worst-case operating scenarios over the proposed mine life extension. Overall, the ENM concluded that the modification would not materially change the approved operational noise impacts. With the exception of two residences (receivers 84a and 136), the project-only noise criteria would continue to be met through continued implementation of proactive and reactive noise management measures (eg real-time noise monitoring, optimised operational shielding and noise attenuation of mobile plant and equipment), as detailed in the mine's approved Noise Management Plan.

Receiver 84a is predicted to experience a moderate (3dB(A)) exceedance of the evening noise criterion of 37 dB(A) for NAG 7. Receiver 136 is predicted to exceed the 35 dB(A) day, evening and night time criteria that apply at this residence by 6 dB(A) during the day and evening and by 5 dB(A) at night. MACH identified that noise levels at this receiver had been incorrectly described in the Modification 1 EA. The then predicted noise levels were approximately 10 dB(A) lower than at adjacent receivers 135 (now owned by MACH) and 139. Receiver 135 was afforded acquisition rights and receiver 139 was afforded noise mitigation rights under Modification 1. To correct this oversight, MACH concluded that receiver 136 should also be afforded voluntary acquisition rights, even though the modification would not (in itself) result in additional noise at that location. The Department recommends the consent conditions are updated to afford Receiver 136 with acquisition rights and Receiver 84a with mitigation rights.

The ENM also included an assessment of cumulative noise levels resulting from Mount Pleasant, Bengalla, Mt Arthur and Dartbrook mines. Receivers 20, 21 and 23, southeast of the mine, were predicted to receive a minor exceedance of 1 dB(A) at night during year 2018. Mount Pleasant would be the dominant contributor to the exceedance. Although this increase is very small, and not discernible to the human ear, MACH considers that it can be avoided by applying noise mitigation measures in weather conditions which enhance noise for these receivers and would only be required for approximately 5% of 2018.

Receivers 488a and 488b, located a significant distance to the south, could also experience exceedance of the cumulative noise criteria by 1 or 2 dB(A). However, noise mitigation at Mount Pleasant would have limited effect due to Bengalla being located between the receivers and Mount Pleasant. Noise predictions show no other exceedances of cumulative noise criteria.

The proposed modification is not expected to alter the nature of construction noise impacts already approved under Modification 1.

5.1.4 Conclusion

The proposed modification would not materially change the impacts of either construction or operational noise and would not remove any existing entitlement for any receiver who currently has acquisition and/or mitigation rights.

The Department recommends minor modifications to the existing noise conditions of consent to reflect simplified NAGs, updated tables listing all current noise receivers and applicable noise criteria, additional acquisition rights for receiver 136 and additional mitigation rights for receiver 84a. These

amendments would correct, simplify and clarify existing noise criteria for all affected private receivers. The Department also recommends that a condition of consent is included to ensure that noise monitoring is undertaken in a manner which accounts for any noise enhancing meteorological conditions.

The Department considers that, with these minor amendments, existing conditions of consent would continue to suitably manage the development's noise impacts.

5.2 Air Quality

MACH is not proposing any major changes to the approved construction, mining methods or any other major dust generating activities that would materially increase air quality impacts. In fact, as the modification would not be using a dragline it would be expected to reduce dust emissions. Nonetheless, MACH commissioned an updated air quality impact assessment (AQIA) to consider whether any changes to air quality impacts, ie dust generating activities, could be expected due to the modification.

The existing conditions of consent address requirements in relation to air quality criteria, greenhouse gas emissions, operating conditions, meteorological monitoring and the preparation of an Air Quality and Greenhouse Gas Management Plan (AQGGMP). These requirements include the use of best practice air quality monitoring and management to minimise impacts on air quality during adverse weather conditions.

5.2.1 Air Quality Impact Assessment

The AQIA considered operational scenarios in 2018, 2021 and 2025 to reflect the expected emissions over the extended mine life. The model included emission estimates for various dust generating activities, utilisation of suitable emission factors and application of reasonable dust control measures.

The AQIA was based on the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2016)*. As the air quality impacts of the proposed modification are expected to remain consistent with the predictions under Modification 1, the AQIA also predicted potential air quality impacts based on current air quality criteria in the consent, ie in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2005)*. The 2016 standards introduced PM_{2.5} criteria over 24-hour and annual averaging periods (25 µg/m³ and 8 µg/m³, respectively) and lowered the annual average PM₁₀ criterion from 30 µg/m³ to 25 µg/m³.

5.2.2 Updated Air Quality Predictions

The AQIA predicted no exceedances of either the 2005 or 2016 air quality criteria at residential receivers for:

- incremental annual average deposited dust (2 g/m²/month);
- cumulative annual average deposited dust (4 g/m²/month);
- cumulative annual average total suspended particulates (90 µg/m³); or
- 24-hour average PM₁₀ (50 µg/m³).

The AQIA also did not predict any exceedance of the PM_{2.5} criteria over either the 24-hour or annual averaging periods.

The AQIA modelled that, on days with worst-case weather conditions and when proactive/reactive dust management measures are not implemented, the 24-hour average PM₁₀ (50 µg/m³) could be exceeded at 12 receiver locations. However, the AQIA also predicted that, with the implementation of proactive/reactive mitigation (eg limiting dust generating activities in-pit and around stockpile areas and increased dust suppression), no exceedances of this criterion would be experienced.

The Department notes that the proactive implementation of dust management measures depends on best practice monitoring. Mount Pleasant's monitoring program consists of a combination of dust deposition gauges, high volume samplers and continuous real-time Palas Fidas monitors. The availability of real-time monitoring allows MACH to undertake proactive and reactive dust management when conditions that are conducive to dust generation are detected. Existing conditions of consent require MACH to implement best practice air quality mitigation, in accordance with the AQGGMP, to minimise dust emissions. In addition, the Department notes that under EPL 20850, MACH is required to monitor PM₁₀ levels at the Muswellbrook NW Station of the Upper Hunter Air Quality Monitoring Network and to cease operation during adverse weather conditions.

The AQIA predicted exceedances of the annual average PM₁₀ criterion of 30 µg/m³ at three dwellings (receivers 43, 488a and 488b, see **Figure 5**). The Department notes that these receivers already have

existing acquisition rights and that this criterion would be exceeded at these receivers due to elevated background levels, including from Mt Arthur and Bengalla mines, regardless of whether Mount Pleasant was operating or not. However, the Department considers that the air quality criteria in the conditions of consent are updated to those in the Approved Methods 2016. This would bring the consent into line with contemporary standards and address the concerns expressed in many submissions.

In addition to the above, the EPA and NSW Health's submissions (see **Section 4.1**) identified that a total of nine receivers would experience exceedances under the new PM₁₀ criterion (ie 25 µg/m³) recommended in the EPA Approved Methods (2016). These receivers (4, 6, 20, 21, 43, 487a, 487b, 488a and 488b) correspond with nine separate dwellings located on seven properties. Three properties, representing five receivers (4, 487a, 487b, 488a and 488b), are located south of Mount Pleasant, between Mt Arthur and Bengalla, and already have voluntary acquisition rights under either the Mount Pleasant, Mt Arthur approval or Bengalla consent. The great majority of modelled cumulative impacts come from either Mt Arthur or Bengalla, and the Department sees no reason to make Mount Pleasant also liable for their acquisition. Receiver 6 (the Muswellbrook Race Club) is not a private residence, and therefore acquisition and mitigation rights are not available for this receiver. Receiver 43 already has acquisition rights under the existing Mount Pleasant consent.

Neither of the remaining two receivers (20 and 21) presently have acquisition rights for air quality under the conditions of consent for Mount Pleasant or any other mine. Receivers 20 and 21, located southeast of Mount Pleasant, have been predicted to experience annual PM₁₀ concentrations of 26 and 27 µg/m³, respectively, under the 2018 modelled scenario, being just higher than the new limit of 25 µg/m³. The AQIA indicates that background PM₁₀ air quality concentration at receivers 20 and 21 is 21 µg/m³. While Mount Pleasant is a minor source of overall impacts at these receivers, it would be responsible for elevating particulate matter levels above the recommended level of 25 µg/m³. The Department recommends that, in accordance with the current VLAMP, voluntary acquisition rights for air quality be extended to receivers 20 and 21.

As noted in **Section 5.1**, under the current VLAMP, voluntary land acquisition rights should only be applied on land where the development is predicted to contribute to exceedances on more than 25% of any privately-owned land where there is an existing dwelling or where a dwelling could be built under existing planning controls. It is therefore recommended that existing consent conditions are made consistent with this provision.

5.2.3 Conclusion

The Department recommends that the air quality criteria in the conditions of consent are updated to reflect contemporary standards, including air quality criteria in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2016)*.

A number of receivers are currently afforded acquisition and mitigation rights. The proposed modification would have no effect on these existing entitlements. The Department recommends that receivers 20, 21 and 43 are granted acquisition and mitigation rights for air quality.

The Department recommends that the AQGGMP be updated to incorporate changes, such as updated air quality criteria and receiver locations, since its last revision. This is already addressed by an existing condition of consent requiring the revision of strategies plans, and programs, should Modification 3 be approved. Further, the Department notes that further consideration is being given to potential impacts on air quality in respect of the proposed development under Modification 4.

5.3 Surface Water

The proposed modification would not significantly alter the currently approved mine design with respect to surface water management. However, Mount Pleasant is located within the Dry Creek Catchment, upstream of Bengalla. Since Mount Pleasant was approved in 1999, the Bengalla pit has progressed steadily towards the west. Bengalla's active operational areas are now located immediately downstream of Mount Pleasant's dams, thus permitting potential surface water interactions between the two mines (see **Figure 2**). Construction of the Mount Pleasant Discharge Dam within Bengalla's mining lease, in accordance with SSD 5170, also introduces another interaction between the two mines which has bearing on future water discharges from Mount Pleasant. These and other matters in relation to discharge water quality and water supply are considered below.

5.3.1 Surface Water Interactions with Bengalla

Mount Pleasant's Mine Water Dam (MWD) and Environment Dam 3 (ED3) are located near its boundary with Bengalla. While MACH has stated that it is not seeking approval to discharge directly to the Bengalla site itself, should rainfall occur in excess of the design criteria for MWD and/or ED3, it is

possible that water would overflow to either Bengalla's CW1 dam (located within the Mount Pleasant site) or from there to the Bengalla site. Overflow to the Bengalla site could potentially result in operational disruptions and/or pollution.

In order to address this concern, MACH considered constructing spillways to ensure that any overflows flow to the Mount Pleasant pit, east of MWD and ED3. However, this option was found to be impractical due to the local topography. Instead, MACH proposes the following design and operational features to mitigate potential risks:

- MWD has been designed to provide sufficient freeboard for a 1% Annual Exceedance Probability (AEP) storm event (ie 1 in 100-year Average Recurrence Interval (ARI)). The design capacity of MWD is approximately 2,000 megalitres (ML), which is more than double the capacity of CW1 (approximately 900 ML) which is immediately downstream;
- ED3 has also been designed with a capacity of approximately 300 ML and constructed for a 1% AEP storm event. A pump and pipeline from ED3 to MWD would allow transfer of water to the larger dam in the event of a larger storm event. ED3 is a prescribed dam under the *NSW Dams Safety Act 1978* and is therefore constructed and operated in accordance with the requirements of the Dams Safety Committee (DSC), including appropriate monitoring and surveillance; and
- all pumping of water to MWD, with the exception of pumping from ED3, would cease once the 1,300 ML level is reached, thus preserving approximately 700 ML of capacity to manage potential stormwater runoff and rainfall events.

In the unlikely event that these mitigation measures are insufficient, MACH proposes to manage any residual risk as follows:

- if MWD reaches a more critical water level (in excess of 1,300 ML), Mount Pleasant would commence dewatering MWD to alternative water storages, including the Mount Pleasant pit if required; and
- in the unlikely event that dewatering of MWD is insufficient and MWD were to spill water to CW1 (due to a pump or other operational failure), Mount Pleasant would consider transferring water back to MWD from CW1 once circumstances permit.

The Department also notes that the terms of the Deed of Agreement includes a requirement that the parties discuss, in good faith, appropriate arrangements to prevent discharge of water to Bengalla or its facilities from Mount Pleasant. The Department considers that MACH's proposals are reasonable and acceptable. Further, the potential interactions of these water management systems are subject to commercial agreement between MACH and Bengalla, which maintains no objections regarding MACH's proposed water management system.

5.3.2 Future Water Discharge System

In March 2015, Bengalla received approval under SSD 5170 to construct, but not operate, the Mount Pleasant Discharge Dam (DW1) south of Wybong Road, in the west of Bengalla's approved disturbance area (see **Figures 2 and 6**). The purpose was to provide discharge options for Mount Pleasant, because the westward expansion of Bengalla requires the temporary diversion of Dry Creek, which could impact on Mount Pleasant's future water discharge routes (see **Figure 6**).

Bengalla has not yet commenced constructing this water discharge system. This is because the Mount Pleasant water balance indicates that water discharge would not be required until mining at Mount Pleasant is well progressed and the resulting catchment area much larger. However, once constructed, this water discharge system would provide Mount Pleasant with a new discharge route towards the south. This would serve as an additional surface water management option in the event of a major storm event (see **Section 5.3.1**).

The controlled water discharge system would entail the construction (see **Figure 2**) of:

- a 300 ML dam (DW1) in the west of Bengalla's approved disturbance area (referred to in the EIS for SSD 5170 as the 'Mount Pleasant Discharge Dam (MTP DW1)');
- a 6.4 km bi-directional pipeline and associated pumping system connecting MWD and DW1;
- a discharge channel to the Hunter River; and
- electrical work associated with construction and operation of the water discharge system.

MACH has indicated that it would seek the necessary water licences closer to the commencement of construction of this discharge system. The Department notes that MACH must comply with the provisions of the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002*, including obtaining any necessary

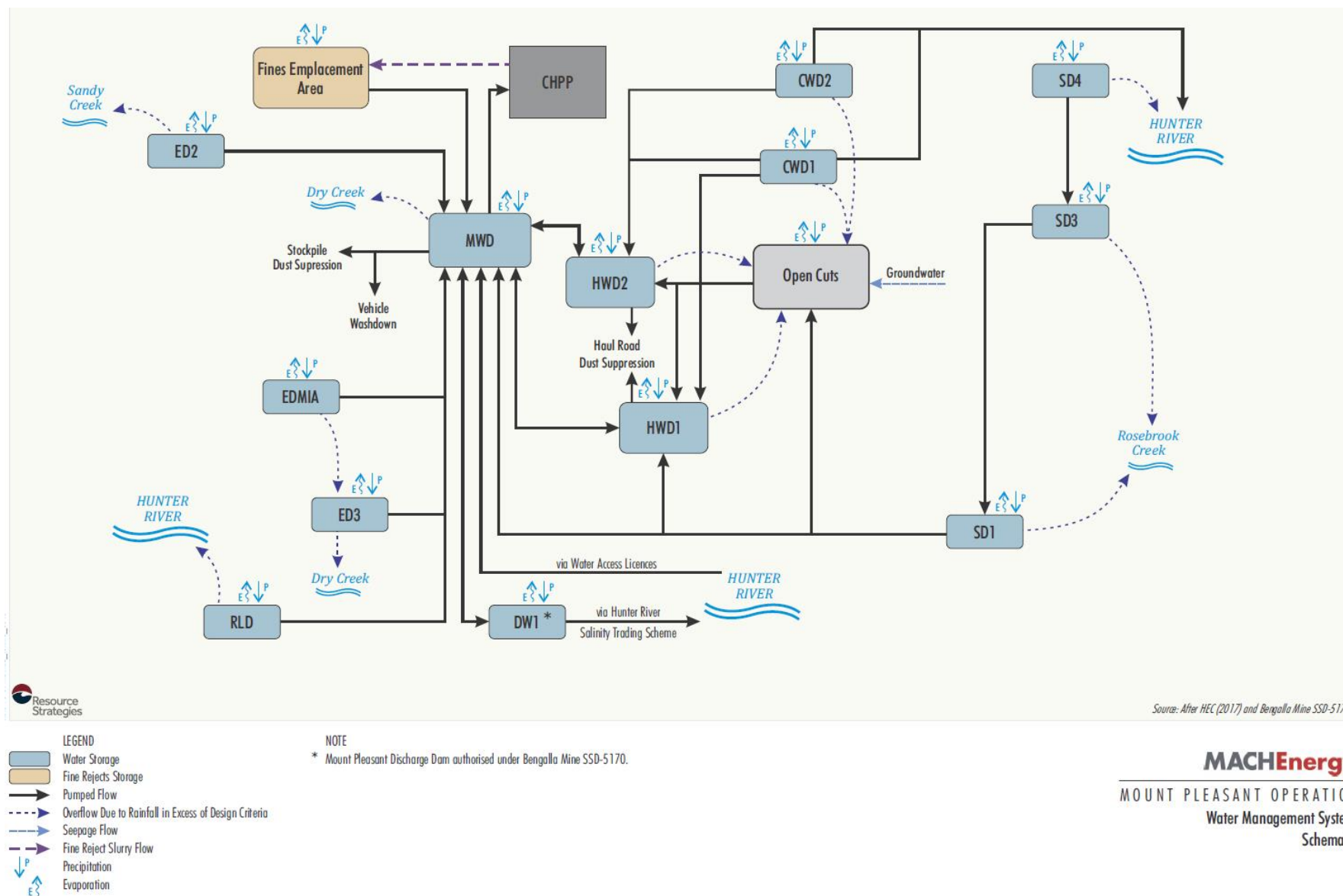


Figure 6: Water management system

Environment Protection Licence (EPL) and Hunter River Salinity Trading Scheme (HRSTS) credits. The licence and credits must be in place prior to operation of the water discharge system.

5.3.3 Water Supply

MACH proposes to source water from the Hunter River for storage and use onsite (see **Figure 6**). In response to submissions questioning whether opportunities to use alternative water sources (eg neighbouring mines or the municipal sewage treatment plant) were considered, MACH indicated that it would be willing to consider these options but cautioned that it would be dependent on water availability from other operations and thus these options could not be relied on exclusively.

In response to HNE Health's concerns over water supplies to site, MACH confirmed that potable water would be trucked to site. However, in the event that treated Hunter River water is used in future, a quality assurance program would be developed that is consistent with NSW regulatory requirements.

The Department notes that MACH would be required to have all necessary licences in place prior to abstracting water from the Hunter River.

5.3.4 Water Discharges

The design of Mount Pleasant's water management system indicates the potential for water discharges from various water storage facilities, including ED2 to Sandy Creek, SD1 and SD3 to Rosebrook Creek and SD4 and RLD to the Hunter River. As mentioned in **Section 4.1**, the EPA questioned whether water discharges from these water storage facilities would be treated before discharge to the receiving environment. Due to the quality of water contained in the Fines Emplacement Area (FEA), the EPA recommended that no water be discharged from it.

MACH responded that its water storage facilities were designed to overflow only if a storm event exceeds their design capacity. Any water discharge from site must be covered by an EPL issued by the EPA and, should HRSTS credits be required, they would have to be obtained before discharging to the Hunter River. MACH stated that it would at all times prioritise pumping to the Mount Pleasant pit over unauthorised discharges from water storage facilities to the environment, even if it would cause operational disruption.

In order to prevent discharge from the FEA, MACH has designed it to operate with sufficient freeboard to sustain a 1% AEP 72-hour storm event with no spill to the environment. Modelling, applying 121 years of rainfall data, indicates that no spills would occur at these design limits. Further, the FEA is classified as a 'High C Consequence Category' dam under the *Dams Safety Act 1978* and would be managed in accordance with the DSC's requirements. MACH has committed to constructing and operating all sediment and environment dams in accordance with DoI Water's 'Blue Book'. The mine's existing Water Management Plan also includes requirements for dam design in its component Erosion and Sediment Control Plan.

5.3.5 Conclusion

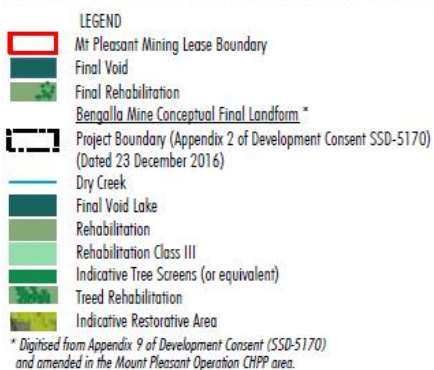
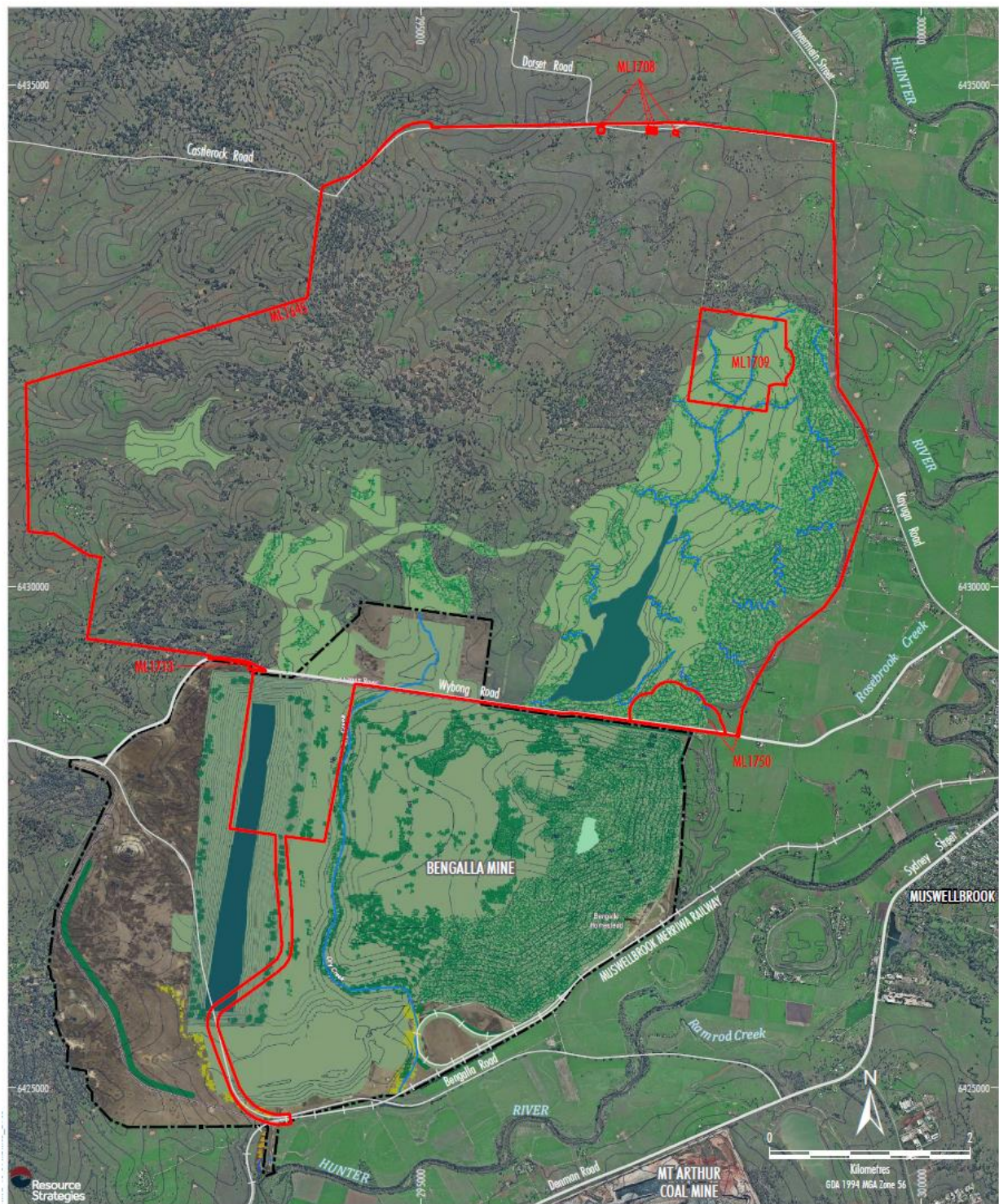
The Department is of the view that the Deed of Agreement between MACH and BMC has resolved the challenges around surface water interactions between the two operations, including those associated with construction and operation of both existing and future water management infrastructure. The proposed design and operational measures associated with the water storage facilities would provide sufficient control to prevent uncontrolled discharges under all but the largest storm events. Even then, residual options remain to proactively pump stored water to the mine's operational pit and/or to discharge it via DW1 to the Hunter River (subject to licensing and available HRSTS credits).

The Department recommends that MACH revises its Water Management Plan to reflect the operational and design measures proposed for the revised surface water management system. If the modification application is approved, a condition of consent would be triggered which requires MACH to review, and submit for approval, a revised Water Management Plan.

5.4 Rehabilitation and Final Landform

5.4.1 Amended Final Landform

The modification proposes only minor changes to the mine's approved final landform, but with the aim of achieving a significant improvement in the overall landscape design. The principal change would be to extend the Eastern OEA footprint by 67 ha to accommodate waste rock, which would have otherwise been emplaced in the South West OEA. In addition to changes in emplacement location, MACH's commitment to operate with a truck and shovel fleet rather than a dragline has allowed further improvements and refinements to the design and visual aesthetics of the Eastern OEA. These changes are shown in the conceptual final landform in **Figure 7**.



Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); Department of Planning and Environment (2016); MACH Energy (2017)
Orthophoto: MACH Energy (Aug 2016)

MACHEnergy
MOUNT PLEASANT OPERATION
Conceptual Final Landform
(2026)

Figure 32

Figure 7: Conceptual final landform (Year 2026)

With respect to the proposed incorporation of refined macro-relief aspects in the design of the Eastern OEA, the final landform surface of the upper lifts of the OEA would be varied to break up the horizon top as viewed from Aberdeen, Muswellbrook and other eastern viewpoints. The toe of the emplacement would be extended in key locations to form a more natural-appearing landform with spurs and valleys which align with the upper lifts. The construction of the lower batters would be prioritised and the outer batters of the eastern face would be constructed in 10 m lifts, instead of 20 m lifts, to introduce more variability in final landform slopes and to speed up establishment of final surface levels.

The lower batter slopes of the emplacement would be vegetated as soon as practicable, including the use of native trees to blend with the surrounding open woodland communities and to be consistent with the neighbouring Bengalla landform (see **Figure 7**). This would present a more natural appearance to visual receivers to the northeast and southeast. Once constructed, the Eastern OEA itself would act to attenuate visual and noise impacts for receivers to the east during open cut mining.

Notwithstanding the fact that the proposed modification would not significantly change the long term final void design for the North and South Pits, MACH acknowledged that by 2026 only the South Pit would be constructed. MACH has indicated that it may lodge a separate application to continue mining beyond 2026. However, if the development does not continue beyond 2026, MACH would rehabilitate the final landform with only the single void and would implement earthworks to push down areas of the final highwalls to achieve a relatively natural appearance (refer to **Figure 7**).

The final void design for Year 2026, including depth, remains largely unchanged except for shaping to be more consistent with the surrounding landscape. The void would progressively fill with water due to rainfall and groundwater inflow. MACH has however refined the design of landscape drainage structures and is proposing extensive use of micro-relief aspects to provide a stable landform and accommodate natural erosive processes. The improved design includes the use of appropriately spaced benches to reduce the velocity of runoff, convex and concave batters (as opposed to fixed slope batters), gentler slope gradients, meandering drainage lines and smaller sub-catchments. The design also seeks to establish geomorphic features, based on consideration of waste rock and soil characteristics and the appropriate use of rock, sub-soil and topsoil materials on outer batters and drainage features.

MACH has committed to continue to undertake studies to better understand the physical characteristics of its waste rock, sub-soil and topsoil material and to incorporate its learnings into continued refinements of the final landform design. These amendments to the final landform lead to a requirement for MACH to update relevant management plans in consultation with the Department, Resources Regulator and other relevant Government agencies, in accordance with the existing conditions of consent.

5.4.2 Rehabilitation

An existing condition of consent requires MACH to prepare and implement a Rehabilitation Strategy, in consultation with relevant Government agencies, including DRG (noting that the Resources Regulator has recently separated from DRG and provides advice on and regulates rehabilitation under the *Mining Act 1992*). This Rehabilitation Strategy would therefore need to be updated in consultation with these agencies within 3 months of any approval of Modification 3.

As noted in **Section 4.1**, DRG requested clarification regarding sustainable rehabilitation outcomes and other details of rehabilitation and the proposed final landform design. MACH provided a detailed response in its RTS, including a Preliminary Rehabilitation Strategy with further details of proposed rehabilitation and post-mining land use aspects. The Department considers that the requirement for further consultation with DRG, as part of the updated Rehabilitation Strategy, would address any concerns.

Progressive rehabilitation would be central to the updated Rehabilitation Strategy, with the use of 10 m lifts (instead of 20 m lifts) for the OEA allowing more rapid establishment of final surfaces. Works on the outer batters of the Eastern OEA would be limited to daylight hours to minimise potential lighting impacts on receivers to the east. Rehabilitation would remain consistent with the site's approved Landscape Management Plan. Locally endemic flora species would be used for rehabilitation, except if limited by seed supply. In cases of limited seed supply, alternative native species, such as from the *White Box Yellow Box Blakely's Red Gum Woodland* endangered ecological community, would be prioritised.

5.4.3 Conclusion

The proposed final landform would result in a landform with improved structural stability and visual amenity. The post-mining landform would be undulating, free draining and rehabilitated with native

species to form grassland and woodland. As noted in **Section 5.6**, the improved final landform would positively address concerns over cumulative impacts on visual amenity in the Upper Hunter region. The Department is satisfied that existing conditions of consent, including requirements to prepare Biodiversity, Landscape and Rehabilitation Management Plans and a Rehabilitation Strategy, would ensure satisfactory mitigation against impacts. The Department recommends that the relevant management plans are revised, following determination of Modification 3, to reflect the proposed improvements to the final landform design and rehabilitation.

5.5 Socio-Economic Impacts and Benefits

The primary component of this modification is to extend the life of the Mount Pleasant consent for a period of six years, to facilitate mining of coal resources which were first approved for extraction in 1999. Without an extension of the current date of expiry of approval to extract coal (December 2020), which, the Mount Pleasant Coal Mine is unlikely to be commercially viable. The additional six years would allow sufficient time for MACH to make a return on its investment and to consider and apply for a new State Significant Development application. MACH has foreshadowed that this application may be lodged within two years.

MACH estimates that the extended six-year period would account for approximately 46 Mt of the 63 Mt of product coal to be produced by 2026, with coal royalties over this extended 6-year period exceeding \$350 million. The additional six years would also provide continued employment of approximately 380 operational workers and temporary employment for up to 350 construction workers.

A number of community submissions raised concerns over Mount Pleasant's potential impacts on nearby viticulture, equine and tourism industries. In its RTS, MACH noted that the mine is already approved and that it is not proposing to significantly change the approved use of the site. As such, MACH did not re-consider these impacts in detail.

The Department is satisfied that the proposed modification would provide significant socio-economic benefits to the local region and the wider community of State through the continued employment of staff and generation of coal royalties over the extended six-year period. The Department considers that the proposed modification is unlikely to significantly impact on surrounding industries, above and beyond what is already approved. However, it also acknowledges that extending the life of the consent would prolong the period of approved impacts.

5.6 Other Impacts

The Department has considered the other potential impacts of the proposed modification, and has summarised this consideration in **Table 2**.

Table 2: Assessment of other impacts

Issue	Impact and Consideration	Recommendation
<i>Biodiversity</i>	<ul style="list-style-type: none"> DA 92/97 predates the implementation of NSW offsetting policies. While no NSW offset was required for the original development, MACH was required to secure a 13,522-ha offset property to account for its impacts under the Commonwealth EPBC Act. The modification would increase the area of approved disturbance to the east of the South Pit by 61 ha to accommodate additional material in the Eastern OEA. In turn, a 65 ha northern portion of the South West OEA designated for disturbance, but not get constructed, would be relinquished. Apart from resulting in an overall smaller disturbance footprint, the area being relinquished is also of higher biodiversity value, including a number of threatened ecological communities listed under the <i>Biodiversity Conservation Act, 2016</i>. As MACH has nominated rail as the preferred product transportation method, the offset requirements associated with the conveyor/service corridor are no longer required. OEH advised that Modification 3, would not require any variation to the site's existing offset requirements. Biodiversity impacts associated with MACH's separate Modification 4 application (for the construction of the rail infrastructure corridor in an alternative location) are currently being assessed by the Department, but fall outside the scope of the Modification 3 application. 	<ul style="list-style-type: none"> The Department is satisfied that the proposed 'land swap' would result in an improved biodiversity outcome due to the disturbance of a smaller area and preservation of an area with higher biodiversity values (ie the relinquished 65 ha portion of the South West OEA). The remaining impacts could continue to be satisfactorily managed under existing conditions of consent and the Biodiversity Management Plan. MACH is required under an existing condition of consent to update its Biodiversity Management Plan to reflect with the proposed changes.
<i>Aboriginal and Historic</i>	<ul style="list-style-type: none"> None of the 74 known Aboriginal heritage sites in the Eastern OEA extension were identified as having high archaeological or 	<ul style="list-style-type: none"> The Department is satisfied that any impacts on historic

Issue	Impact and Consideration	Recommendation
<i>Heritage</i>	<p>cultural value. Nonetheless, MACH acknowledged that all Aboriginal heritage material is culturally significant to Aboriginal communities.</p> <ul style="list-style-type: none"> • MACH currently holds Aboriginal Heritage Impact Permits (AHIPs) which allow disturbance of any Aboriginal objects located within the permits' boundaries. Aboriginal cultural heritage is also managed in accordance with the mine's approved Aboriginal Heritage Management Plan (AHMP). • OEH advised that all Aboriginal cultural heritage sites within the Eastern OEA extension area could be appropriately managed under existing permits and management plans. • The historic heritage survey did not identify any historic heritage items located within the Eastern OEA extension. MACH is not proposing to disturb any additional historic heritage items, not already permitted to be disturbed. • The Heritage Council noted that the proposal would not affect any items listed on the State Heritage Register. 	<p>and Aboriginal heritage would continue to be satisfactorily managed under existing conditions of consent, the AHMP and AHIPs.</p> <ul style="list-style-type: none"> • MACH is required under an existing condition of consent to revise the relevant Strategies, Plans and Programs to reflect the proposed changes, should Modification 3 be approved.
<i>Visual Amenity</i>	<ul style="list-style-type: none"> • Submissions raised concern over the cumulative impact of mining in the Upper Hunter on visual amenity for receivers in Muswellbrook, Aberdeen and Scone, particularly in terms of the post-mining landform. • The proposed amended final landform design and rehabilitation strategy would improve the mitigation of impacts on visual amenity in comparison with the existing approved landform. This is discussed in greater detail in Section 5.4. • Existing conditions also require MACH to implement all reasonable and feasible measures to minimise visual and off-site lighting impacts associated with the development and to provide additional visual mitigation measures at the request of nearby landowners. 	<ul style="list-style-type: none"> • The Department is satisfied that impacts on visual amenity would continue to be satisfactorily managed under existing conditions of consent. • MACH is required to update its Landscape and Rehabilitation Management Plans, should Modification 3 be approved. • It is recommended that an updated final landform figure is included in the consent.
<i>Traffic and Transport</i>	<ul style="list-style-type: none"> • MACH is not proposing any change to the approved operational workforce at Mount Pleasant. • A contemporary road transport assessment of the cumulative impacts on the road transport network, considering the projected background traffic growth at its expected peak in 2026, found that the development would not adversely impact on the operation of key road intersections. • Nonetheless, some public and SIG submissions raised concern over impacts on the rural road network, access to residents' properties towards the west and exacerbated of congestion in the Muswellbrook CBD. • The Department understands that MACH has been consulting with Council regarding contributions in relation to Mount Pleasant's use of the local road network, including Thomas Mitchell Drive, a significant regional road providing an essential link to many of the regional mining operations. • Construction and maintenance of Thomas Mitchell Drive is currently being funded by proportionate contributions from nearby mines. However, Mount Pleasant is not currently required to make such a contribution. Existing conditions of consent only require MACH to undertake road upgrades and develop a Maintenance Management Plan in consultation with Council. 	<ul style="list-style-type: none"> • The Department is satisfied that the proposal would not lead to any significant additional impacts on roads or traffic. • The Department recommends that, in addition to the existing conditions of consent, a condition is included to require contributions towards the upgrade and maintenance of Thomas Mitchell Drive. • The proposed condition would be in similar terms to conditions in other consents that require proportionate contributions from other mines.

6. CONDITIONS

The Department has drafted a recommended Notice of Modification (see **Appendix D**) and a consolidated version of the consent as it is proposed to be modified (see **Appendix E**). The Department considers that the environmental impacts of the proposed modification can be appropriately managed, subject to the proposed amendments to the existing conditions of consent.

The Department has also taken the opportunity to update the Schedule of Lands and various plans in the appendices and make minor administrative changes to conditions reflecting the Department's current drafting standards.


MACH has reviewed the recommended conditions and has not raised any objections.

7. CONCLUSION


The Department has completed its assessment of the proposed modification, including careful consideration of all potential environmental, social and economic impacts and the relevant requirements of the EP&A Act and Regulation.

The Department considers that the proposed modification is approvable. Further, the Deed of Agreement signed by MACH and BMC would ensure that Mount Pleasant's operations do not impact on the viability of the neighbouring Bengalla mine. The proposed modification, particularly the six-year extension, would generate socio-economic benefits through continued employment of site workers and through the payment of coal royalties. The Department considers these benefits outweigh the potential adverse social and environmental impacts of the proposed extension to an existing approved mine's life.

Following its assessment of the modification, the Department considers that the modification is approvable, subject to the proposed amended conditions of consent (see **Appendix D** and **E**). This assessment report is hereby presented to the Independent Planning Commission of NSW for determination.


8.6.18

Howard Reed
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Resource Assessments

 8/6/18
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Resource Assessments and Compliance

APPENDIX A: ENVIRONMENTAL ASSESSMENT

See: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8555

APPENDIX B: SUBMISSIONS

See: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8555

APPENDIX C: RESPONSE TO SUBMISSIONS

See: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8555

APPENDIX D: NOTICE OF MODIFICATION

APPENDIX E: CONSOLIDATED CONSENT
