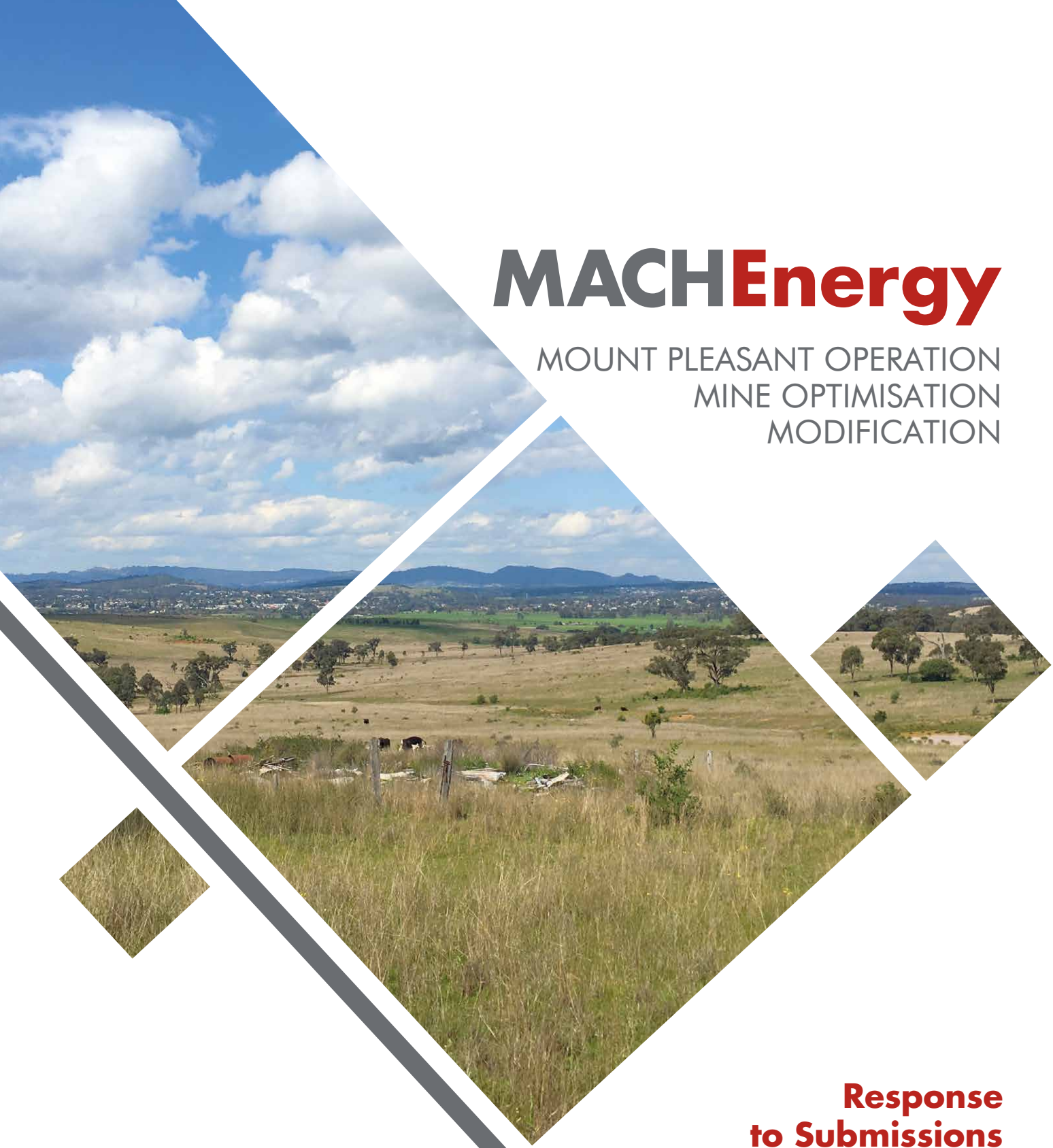

# MACHEnergy

## MOUNT PLEASANT OPERATION
## MINE OPTIMISATION
## MODIFICATION

# Response to Submissions

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# 1 INTRODUCTION

MACH Energy Australia Pty Ltd (MACH Energy) acquired the Mount Pleasant Operation from Coal and Allied Operations Pty Ltd (Coal & Allied) on 4 August 2016.

The approved Mount Pleasant Operation includes the construction and operation of an open cut coal mine and associated infrastructure located approximately 3 kilometres (km) north-west of Muswellbrook in the Upper Hunter Valley of New South Wales (NSW). The Mount Pleasant Operation is located in a significant mining region of the Sydney Basin that includes a wide range of existing operational coal mines and a number of proposed coal mining projects.

When the Mount Pleasant Operation was purchased by MACH Energy, only limited engineering and construction works had been undertaken (e.g. surveying, geotechnical investigation, construction of a dam, etc.) and no mining operations had been conducted at the site. Construction of the Mount Pleasant Operation re-commenced in November 2016, and the mine is approved to produce up to 10.5 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal. MACH Energy will commence waste rock and ROM coal mining operations in 2017 in accordance with Development Consent DA 92/97 and Commonwealth Approval EPBC 2011/5795.

MACH Energy (2017) prepared the *Mount Pleasant Operation Mine Optimisation Modification Environmental Assessment* (the Environmental Assessment) that is being assessed under the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act).

The Environmental Assessment was placed on public exhibition by the NSW Department of Planning and Environment (DP&E) from 16 June 2017 to 17 July 2017.

During this period, Government agencies, Non-government organisations (NGOs), businesses and members of the public were invited to provide submissions on the Environmental Assessment to the DP&E.

The DP&E has requested that MACH Energy review and respond to the range of submissions that were received on the Environmental Assessment.

MACH Energy's responses to submissions have been structured as follows:

- Part A – Responses to Government agency submissions (Section 6.1).
- Part B – Responses to Non-Government Organisation (NGO) Submissions (Section 6.2).
- Part C – Responses to Bengalla Mining Company (BMC) Submissions (Section 6.3).
- Part D – Responses to Public Submissions (Section 6.4).

This Response to Submissions Report has been structured generally in accordance with *Guideline 5; Responding to Submissions of the Draft Environmental Impact Assessment Guidance Series June 2017* (DP&E, 2017)

It is noted that a number of businesses, NGOs and members of the public also supported the Modification (approximately 25% of total submissions). In the interest of brevity, these submissions have not been reproduced in this document. However, a summary of the key positive factors raised in these submissions is provided in Section 3.5.

# 2 OVERVIEW OF THE EXHIBITED MODIFICATION

The Modification would primarily comprise two components:

- an extension to the time limit on mining operations to provide for open cut mining operations to 22 December 2026 (i.e. modify Condition 5, Schedule 2 of Development Consent DA 92/97 to add six years); and
- extensions to the Eastern Out of Pit Emplacement (herein described as the emplacement extension), to better align with underlying topography and facilitate development of a final landform that is more consistent with the characteristics of the local topography.

Table 1 provides a summary of the key elements of the proposed Modification.

## Table 1
## Overview of the Approved Mount Pleasant Operation and the Modification

| Project Component | Approved Mount Pleasant Operation | Proposed Modification |
|---|---|---|
| ROM Coal Production | ROM coal production at a rate of up to 10.5 Mtpa. | Unchanged. |
| General Waste Rock Management | Waste rock will be placed within mine voids, out-of-pit emplacements and the Fines Emplacement Area and will also be used to construct visual bunds. | Unchanged. |
| Waste Rock Production | Waste rock removal at a rate of up to approximately 53 million bank cubic metres per annum. | Unchanged. |
| Waste Emplacements | Waste rock emplaced both in-pit, and four major out-of-pit emplacement areas located to the east of the open cuts and to south-west and north-west of the open cuts. | Approximately 67 hectare (ha) extension of the Eastern Out of Pit Emplacement.<br>No waste rock to be emplaced in the South West Out of Pit Emplacement. |
| Coal Beneficiation | Beneficiation of ROM coal in an on-site Coal Handling and Preparation Plant (CHPP). | Unchanged. |
| Coal Transport | Coal transport to the Muswellbrook – Ulan Rail Line will be via either (but not both)^:<br>• a conveyor/service corridor to the Bengalla Mine; or<br>• rail via an on-site rail loop and loader facilities, including load-out conveyor and bin.<br>Coal will be transported to the Port of Newcastle for export along the Muswellbrook – Ulan Rail Line and then the Main Northern Railway. | Unchanged. |
| | An average of three and a maximum of nine laden trains per day leaving the mine. | Unchanged. |
| Coal Rejects | Coarse rejects will be placed within mined out voids, out-of-pit emplacements and used to build fines emplacement walls. Fine rejects will be stored in the Fines Emplacement Area. | Unchanged. |
| Project Layout Plan | Appendix 2 of Development Consent DA 92/97 provides the approved layout of the project at Year 20. | Amendment to reflect extension to the Eastern Out of Pit Emplacement and reduction in the South West Out of Pit Emplacement. |
| Mining Method | Open cut mining incorporating truck and shovel and dragline operations. | Open cut mining method comprising truck and shovel in the Modification period. |
| Water Supply and Disposal | Water requirements for the mine and CHPP will be met from pit groundwater inflows, catchment runoff and make-up water from the Hunter River. Potable water for the industrial area will be sourced from the Hunter River and treated on-site to the required standards.<br>Surplus water will be discharged into the Hunter River (or its tributaries) in compliance with the Hunter River Salinity Trading Scheme and an Environment Protection Licence. | Largely unchanged, however, to reduce water demand from the Hunter River, excess mine water may also be sourced from the Bengalla and Dartbrook Mines. |
| Mine Life | 21 years from the date of grant of Development Consent DA 92/97 (i.e. from 22 December 1999 until 22 December 2020). | Extended to 22 December 2026*. |
| Hours of Operation | Operations are approved to be undertaken 24 hours per day, seven days per week. | Unchanged. |
| Operational Workforce | Average operational workforce throughout the life of the mine of approximately 330 people, and an estimated peak of approximately 380 people. | Unchanged. |
| Construction Workforce | A construction workforce of up to approximately 250 people will be required. | Construction workforce is expected to peak at approximately 350 people. |

^ On 23 January 2017 MACH Energy notified the DP&E of its intent to transport all coal from the site by rail via an on-site rail loop.

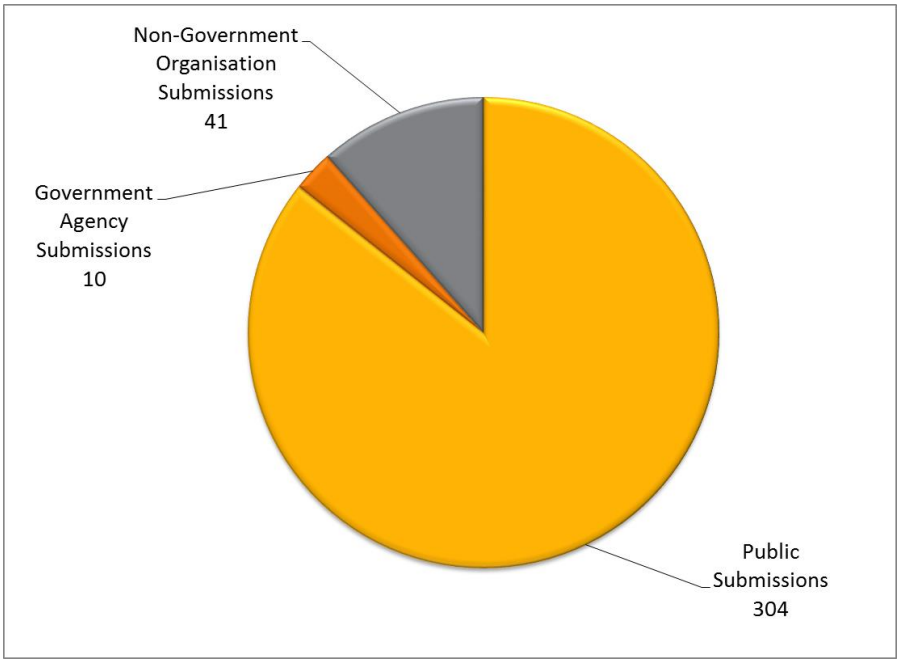
* Remains less than 21 years from commencement of operations.

# 3 ANALYSIS OF SUBMISSIONS

## 3.1 NUMBER OF SUBMISSIONS

A total of 355 submissions on the Modification were received from Government Agencies, NGOs, and members of the public. Graph 1 presents a summary of the number of submissions by submitter category.

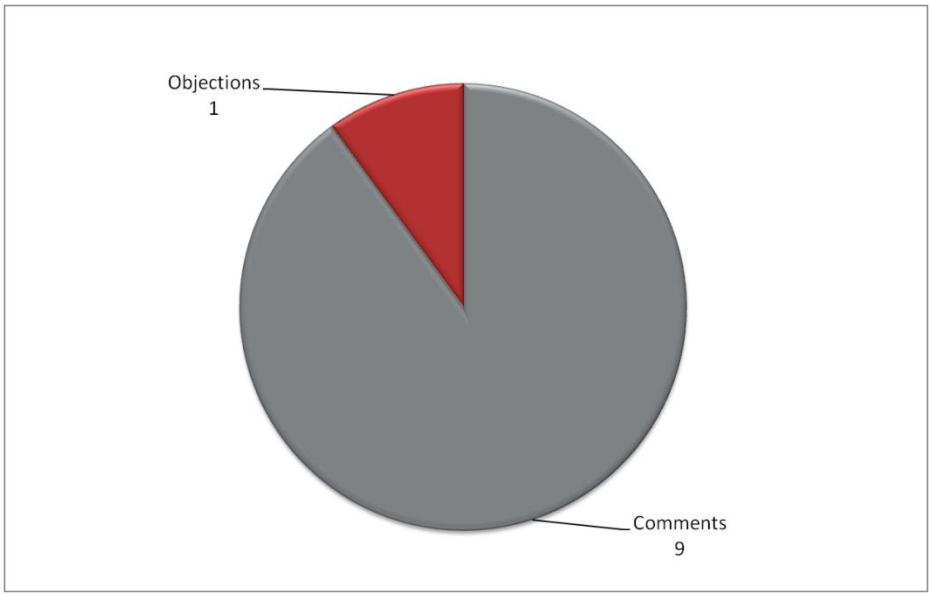
**Graph 1**
**Summary of All Submissions**




## 3.2 SUMMARY OF GOVERNMENT AGENCY SUBMISSIONS

A total of 10 submissions were received from NSW Government Agencies, of which 9 were in the form of comments or suggested conditions, and one, from the Upper Hunter Shire Council, was in the form of an objection (Graph 2). It is noted that the Mount Pleasant Operation is located outside of the Upper Hunter Shire Council Local Government Area and the Muswellbrook Shire Council (MSC) provided comments on the proposal and did not object to the Modification.

**Graph 2**
**Summary of Government Agency Submissions**



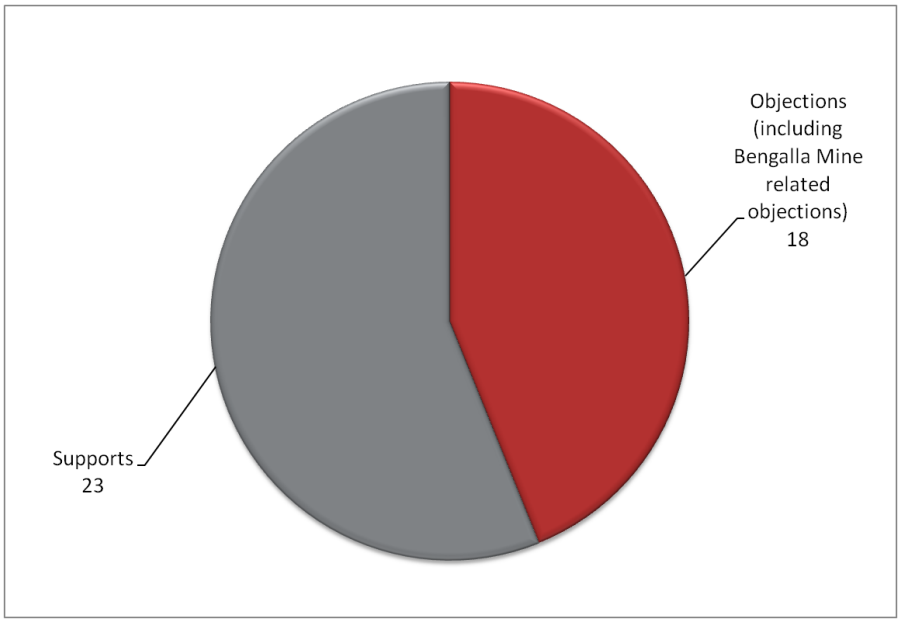

It is noted that DP&E also provided a letter to MACH Energy, which summarised the key issues raised in other submissions. The DP&E submission also requested that a response to submissions report be prepared and submitted.

### 3.3 SUMMARY OF NON-GOVERNMENT ORGANISATION SUBMISSIONS

A total of 41 submissions were received from NGOs, including other mining companies and environmental organisations.

Some 23 of the NGO submissions supported the Modification and some 18 objected to the Modification (Graph 3).

**Graph 3**
**Summary of NGO Submissions**



A significant proportion of the objecting NGO submissions were from companies with an interest in the neighbouring Bengalla Mine and various entities associated with the Hunter Thoroughbred Breeders Association or horsebreeding in the Upper Hunter Region. An objecting submission from the Upper Hunter Sustainable Industries Association was also submitted and subsequently withdrawn prior to the completion of this report.

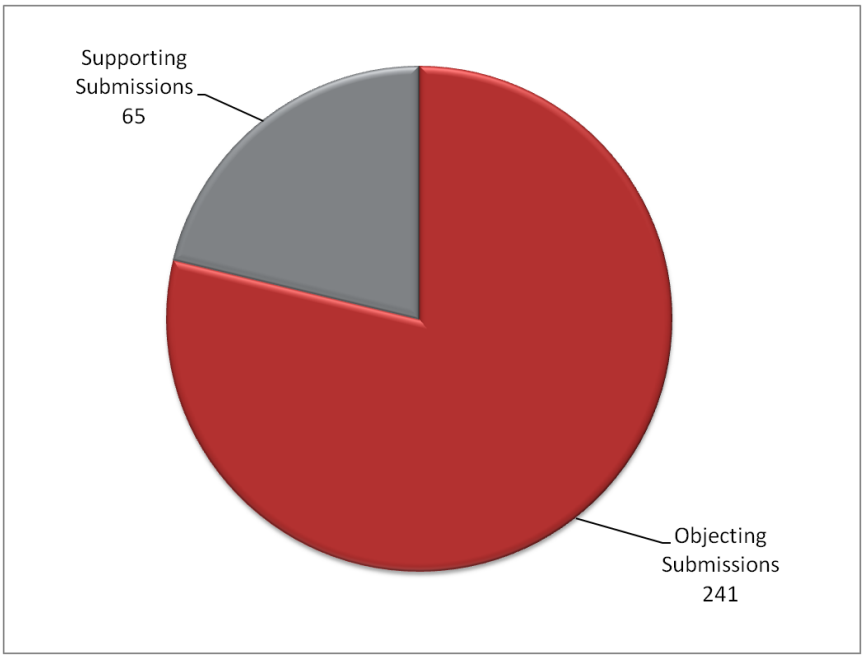
Due to the length and specific nature of issues raised in the Bengalla Mine related NGO objections, these are addressed in a separate sub-section of this document (Section 6.3).

### 3.4 PUBLIC SUBMISSIONS

A total of 304 submissions were received from members of the public, including 181 employees or people linked to employees of the Bengalla Mine.

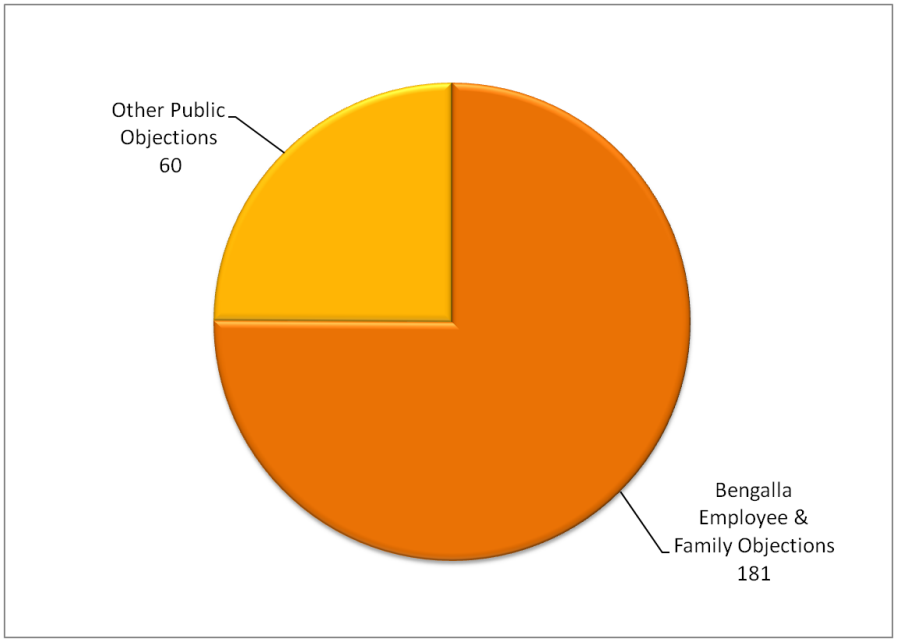
Some 65 of the public submissions supported the Modification and some 241 objected to the Modification (Graph 4).

**Graph 4**
**Summary of Public Submissions**




Of the objecting submissions from members of the public, approximately 75% were from employees of the Bengalla Mine or other members of their families (Graph 5).

**Graph 5**
**Summary of Objecting Submissions**

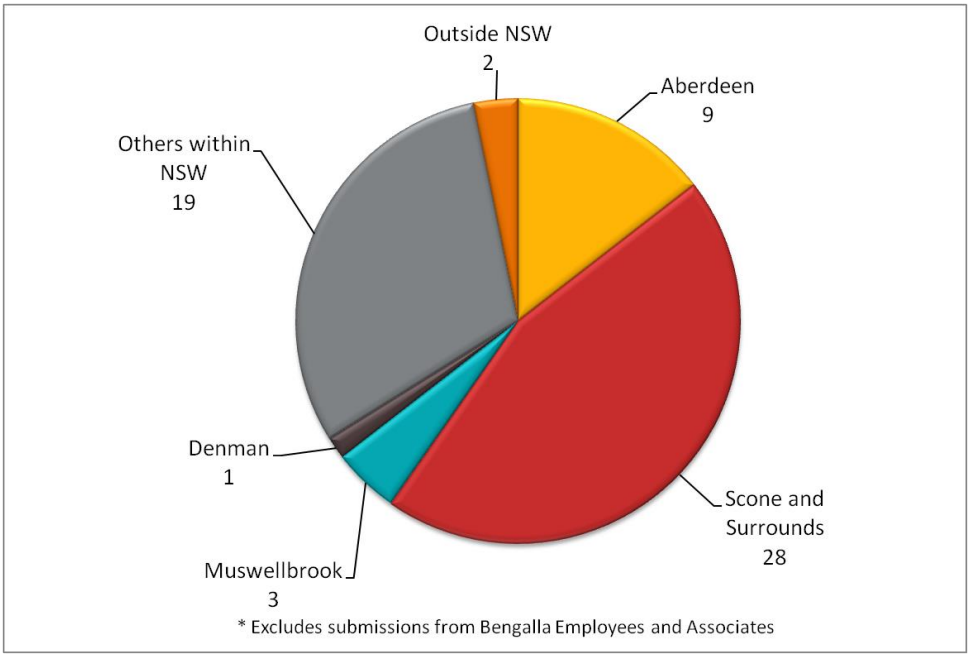



***Locations of Public Submitters***

Due to the high number of Bengalla Mine employee objecting submissions, any analysis of the locations of the public submitters would largely reflect the residential location of these employees.

Excluding the Bengalla Mine employee objecting submissions, the locations of the remaining objecting submitters by locality is presented on Graph 6.

**Graph 6**
**Summary of Public Objection Locations***



## 3.5 KEY ISSUES RAISED IN SUBMISSIONS

While not exhaustive, the most commonly raised issues or concerns in commenting or objecting submissions pertained to:

- air quality emissions and management;
- operational noise and blasting emissions and management;
- on-site water management, water supply and excess water disposal;
- cumulative impacts of mining;
- land use, mine landforms and progress of rehabilitation;
- the local road network and associated upgrades;
- potential for land use conflict with other industries;
- future development plans for the Mount Pleasant Operation;
- visual impacts; and
- potential interactions with the Bengalla Mine.

MACH Energy also notes, the most commonly raised points in supporting submissions pertained to:

- employment opportunities, including the potential for the Mount Pleasant Operation employment to offset recent mine closures or reductions in other mine workforces in the region;
- potential economic flow-on effects to the local and regional economies;
- social benefits that mining employment can provide;
- revised Eastern Out of Pit Emplacement landform design constitutes an improvement on the existing design in terms of use of the local topography;
- increased business turnover for local suppliers and businesses; and
- potential improvements in local business confidence and real estate prices.

# 4 ACTIONS TAKEN FOLLOWING EXIBITION OF ENVIRONMENTAL ASSESSMENT

## 4.1 ENGAGEMENT ACTIVITIES

Since the lodgement of the application, MACH Energy has continued to consult with key NSW Government agencies regarding the Mount Pleasant Operation and the Modification.

This included a meeting with DP&E on 24 August 2017 to discuss the range of concerns raised in the submissions, and MACH Energy's proposed approach to address key concerns.

Both preceding and following this meeting, MACH Energy has continued to engage with other NSW regulatory agencies with respect to the ongoing regulation of the Mount Pleasant Operation and the Modification in the specific areas of regulatory agency responsibility.

An overview of recent key consultation is provided below.

***Muswellbrook Shire Council (MSC)***

MACH Energy has an ongoing consultation programme with the MSC associated with the development of the approved Mount Pleasant Operation.

MACH Energy anticipates that consultation with the MSC will be ongoing throughout the NSW Government assessment of the Modification.

***Environment Protection Authority (EPA)***

MACH Energy met with the NSW EPA on 8 September 2017 to discuss the Modification and key issues raised in its submission with respect to air quality, noise and water management.

MACH Energy's proposed approach to respond to the concerns raised was discussed and the EPA indicated general agreement with the approach. However, the EPA reserved its acceptance of the detail of the responses following review of this document.

***Division of Resources and Geoscience (DRG)***

MACH Energy consulted with the DRG on 8 September and 20 September 2017 to discuss the Eastern Out of Pit Emplacement final landform design, Mount Pleasant Operation post mining land use, rehabilitation and the level of additional detail to be provided in the Rehabilitation Plan (Mining Operations Plan), Rehabilitation Strategy and Biodiversity Management Plan.

MACH Energy's proposed approach to respond to the concerns raised was discussed and the DRG indicated general agreement with the approach, subject to detailed review of MACH Energy's responses in this document.

## 4.2 FURTHER ENVIRONMENTAL ASSESSMENT

No further environmental assessment has been required to address the submissions received on the Environmental Assessment.

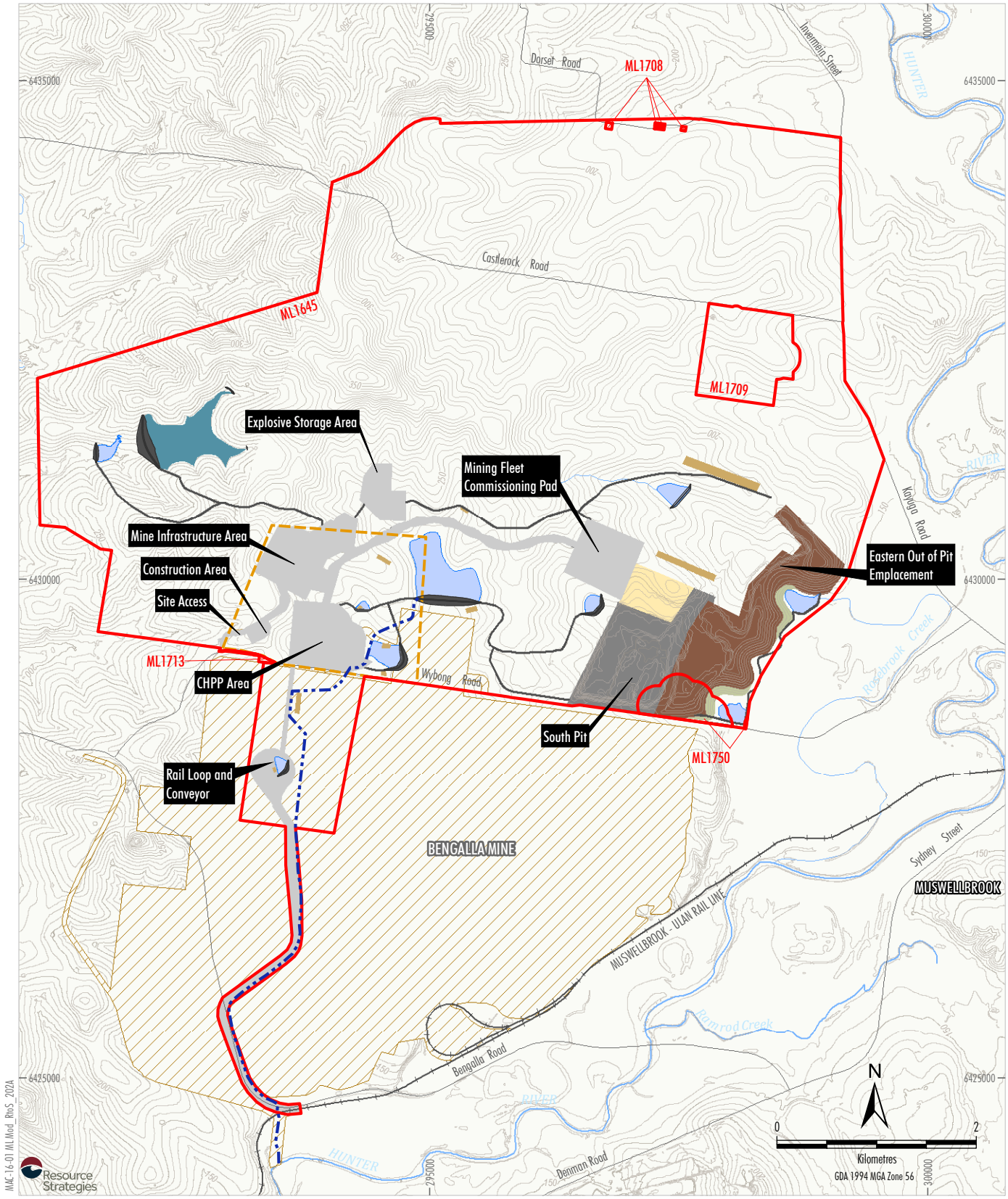
# 5 CHANGES TO THE MODIFICATION

No changes to the proposed Modification are proposed as a result of MACH Energy's review of the various Government, NGO and public submissions on the Modification.

An updated version of the 2018 Provisional General Arrangement (Figure 10 of the Environmental Assessment) is provided as Figure 1. This figure corrects a minor inconsistency between the Environmental Assessment and the supporting appendices to show the initial rehabilitation on the eastern face of the Out of Pit Emplacement in 2018. This correction makes the 2018 Provisional General Arrangement consistent with the Air Quality Assessment and Site Water Balance Review assessments presented in the Environmental Assessment that included this initial rehabilitation.

A number of clarifications to address concerns that were raised on the basis of alternative interpretations of some Figures or text in the Environmental Assessment are presented where relevant in Section 6.

Section 6 also provides further description of the preparation of secondary management documents such as the Rehabilitation Strategy and Mining Operations Plan that will provide additional detail on the methodology and techniques to be used to achieve the final landform concepts presented in the Environmental Assessment.




LEGEND

- Mining Lease Boundary
- Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Infrastructure Area Envelope
- Active Stripping Area
- Active Mining Area
- Active Overburden Emplacement Area
- Topsoil Stockpile
- Initial Rehabilitation
- Infrastructure and Borrow/Stockpile Area
- Access Road
- Indicative Water Pipeline Alignment
- Water Dam
- Fines Emplacement Area

*Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); MACH Energy (2017)*

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MOUNT PLEASANT OPERATION

Provisional General Arrangement 2018

**Figure 1**

# 6 RESPONSES TO SUBMISSIONS

## 6.1 PART A – RESPONSES TO GOVERNMENT AGENCY SUBMISSIONS

Responses to issues raised by Government agencies are provided in the subsections below.

The following agencies had no specific queries or concerns regarding the Modification and therefore do not require any specific response:

- Subsidence Advisory NSW.
- NSW Office of Environment and Heritage (OEH).
- Australian Rail Track Corporation Ltd (ARTC).
- NSW Heritage Council.

Agencies that raised concerns or made more extensive comments regarding the Modification are as follows, and are addressed in the sub-sections below:

- EPA.
- Council.
- NSW Health.
- Department of Primary Industries - Water (DPI Water).
- Upper Hunter Shire Council.
- DRG.

Where relevant, supporting or generally positive comments from relevant Government agencies are also referred to in the following subsections.

### 6.1.1 Operational Noise

The following Government agencies raised issues regarding operational noise:

- EPA;
- NSW Health; and
- MSC.

The Upper Hunter Shire Council also raised a concern regarding cumulative assessment and potential impacts on Aberdeen (approximately 4 km north-east of the Mount Pleasant Operation) (including noise). This is addressed in Section 6.1.9.

It is noted that the EPA (2017) in its submission on the Modification stated that it supported the Modification subject to clarifications/updates as follows:

> *The noise and vibration components of the MACH Energy application to modify the consent for the Mount Pleasant Open Cut Coal Mine was reviewed. The EPA can support the proposed modification subject to the following changes.*
>
> - *Updating of Tables 1, 2 and 3 of the current approval, as proposed in the Wilkinson Murray Noise and Blasting Assessment, which was submitted with the modification application.*
> - *The noise limits in Table 3 of the current approval, as updated, are to apply under all meteorological conditions except:*
>   - *winds greater than 3m/s at 10m above ground level;*
>   - *temperature inversion conditions greater than 3 degrees Celsius per 100 m. The reference to OEH should be changed to a reference to EPA in condition 24 (b) of the current approval, which requires continuous real-time measurement of temperature lapse rate in accordance with the NSW Industrial Noise Policy (INP), or as otherwise approved. Note this usually requires a 60 m tower.*
> - *Modifying factor adjustments are to be applied to the noise limits in Table 3 in accordance with the INP or any superseding NSW government environmental noise policy. This includes any low frequency noise corrections.*
> - *Meteorological conditions are to be those measured at a meteorological station established on the premises or as otherwise agreed with the EPA and OPE. Access to current and historical meteorological conditions is to be made available to EPA and OPE.*

***Update of Operational Noise Development Consent Conditions***

Issue

The EPA (2017) recommended that the current Development Consent DA 92/97 (specifically Tables 1-3) be updated to reflect the findings of the Noise and Blasting Assessment for the Modification, and reflect meteorological conditions and modifying factors as endorsed by the EPA.

Response

MACH Energy generally concurs with the EPA's recommendations.

However, once the Mount Pleasant Operation is operational, consistent with Wilkinson Murray's recommendations, noise monitoring results would be assessed against the *NSW Industrial Noise Policy* (NSW INP) (EPA, 2000), or superseding policy with respect to modifying factors (including for low frequency noise). In the event that the *draft Industrial Noise Guideline* (dING) (EPA, 2015) is not finalised and the NSW INP methodology suggests the potential for dominant low frequency content but the DEFRA methodology[1] described in the dING does not, MACH Energy would consult with the EPA prior to applying the NSW INP modifying factor to noise monitoring results.

If noise generated by the Mount Pleasant Operation is found to contain annoying characteristics (such as dominant low frequency content), the appropriate modifying factor would be applied to measured noise levels and assessed against noise criteria.

In addition, consistent with contemporary policy, MACH Energy intends to determine the presence of temperature inversions at the on-site meteorological station using the sigma-theta method rather than a 60 metre (m) inversion tower.

***Low Frequency Noise Assessment***

Issue

The EPA (2017) noted that no correction factor had been applied for low frequency noise in the Modification Noise and Blasting Assessment and highlighted that it was the proponent's risk if a low frequency noise issue was to arise at a later date during operations.

Response

MACH Energy understands the methodology that applies to the application of modifying factors and will apply the appropriate methodology in consultation with the EPA, as described in the response above. Based on experience at other mining operations in NSW, MACH Energy does not anticipate that low frequency noise will be a significant operational concern as contemporary assessment methodology would be applied (i.e. DEFRA[1] methodology).

***Development Consent Conditions - Noise***

Issue

MSC (2017) noted that the activities at the Mount Pleasant Operation would be moving closer to Muswellbrook and the proposed mobile equipment may have additional potential to generate noise.

Accordingly it recommended a number of updates to Development Consent DA 92/97 Schedule 3, Conditions 8 and 9 (i.e. operating conditions and Noise Management Plan).

This included recommending:

- a single specific noise limit for all individual major mobile plant items;
- annual review of the noise performance of the mobile equipment;
- limiting works on the Eastern Out of Pit Emplacement outer batters to daylight hours;
- co-ordination of noise management with the nearby mining operations; and
- specific content of the Noise Management Plan.

[1] Refers to the methodology developed by the United Kingdom Department for Environment, Food and Regional Affairs.

Response

As described in the Environmental Assessment, a Noise and Blasting Assessment has been conducted and found that the noise envelope of the approved mine would effectively be unchanged by the Modification. It should also be noted that the extent of the open cuts is unchanged by the Modification, therefore the location of excavators would not be any closer to Muswellbrook.

Notwithstanding, MACH Energy would update the Noise Management Plan for the Mount Pleasant Operation to incorporate the Modification and any associated changes to the Development Consent DA 92/97 Conditions.

MACH Energy does not support DP&E imposing a single upper limit on the noise emissions of individual items of mobile plant in Development Consent DA 92/97. MACH Energy also notes that the proposed upper limit proposed by MSC is approximately 5 decibels lower than the typical estimated levels in the Noise and Blasting Assessment. Rather, MACH Energy considers that DP&E should apply the conventional approach of setting the noise performance outcome that is required at the nearest private receivers. The noise management methodology to achieve these limits in the most reasonable and feasible manner would then be at MACH Energy's discretion.

Subject to review of final draft Consent Conditions as recommended to the Determining Authority by DP&E, MACH Energy does however generally support the intent of MSC's noise management condition suggestions and would be happy to include further documentation of attenuated sound power levels of mobile plant in the Noise Management Plan.

***Potential Effects of Noise on Human Health***

Issue

NSW Health (2017) noted that environmental noise can have a negative impact on human health and trigger community complaints. NSW Health advised that it is prudent to take all reasonable and feasible measures to minimise public exposure to mine-related noise, irrespective of compliance with criteria.

Response

MACH Energy notes that the requirement to implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment from the development is already enshrined in Condition 1, Schedule 2 of Development Consent DA 92/97.

MACH Energy also notes that it is the role of the NSW Government to set noise compliance limits to which individual mining operations should comply. MACH Energy has assessed the Modification in the context of the existing approved Mount Pleasant Operation operational noise limits and relevant aspects of NSW Government policies and guidelines that apply to noise assessment of mining operations.

In addition, MACH Energy notes that with respect to noise generation the EPA (2017) submission indicates it can support the Modification, subject to some updates to the noise conditions in the Development Consent.

***Additional Noise Exceedances***

Issue

NSW Health (2017) noted that the operational noise assessment indicated that two residences would be added to the relevant noise acquisition or noise mitigation tables in Development Consent DA 92/97 and recommended that MACH Energy engage in clear and open consultation with the owner/occupiers of these residences with respect to additional impacts and options.

Response

MACH Energy notes that consultation with the owner of property 136 commenced prior to the exhibition of the Environmental Assessment and understands that the owner was appreciative that the acquisition status of the property would be clarified by the Modification (i.e. to correct a previous error).

MACH Energy also notes that residence 140c is a newly identified residence in close proximity to an existing commercial premises. The owner already has another residence with the same status under the Development Consent. Notwithstanding, MACH Energy would notify the owner of their right to at-receiver noise mitigation, should the Modification be approved.

### 6.1.2 Dust and Particulate Matter

The following Government agencies raised issues regarding dust and particulate matter:

- EPA;
- NSW Health; and
- MSC.

The Upper Hunter Shire Council also raised a concern regarding cumulative assessment and potential impacts on Aberdeen (approximately 4 km north-east of the Mount Pleasant Operation) (including air quality), this is addressed in Section 6.1.9.

It is noted that the EPA (2017) in its submission on the Modification stated the following:

> *A full air quality assessment has been provided to assess the impacts of the proposed modification. This has included explicit inclusion of five nearby mines based on information in the latest development consent for each. These are (year of assessment in brackets): Bengalla (2013); Mount Arthur (2013); Mangoola (2013); Muswellbrook Coal Mine (2016); Drayton South (2015).*
>
> *The EPA issued EPL 20850 for the mine on 24th November 2016 (before modification 2). Conditions on the EPL include reactive management requiring cessation of dust-generating activities under adverse conditions, being elevated concentrations of $PM_{10}$ and wind blowing from the north-west sector. The proposed modification does not require change to these licence conditions.*

### *New EPA $PM_{10}$ Annual Average Criterion*

Issue

The EPA (2017) and NSW Health (2017) noted that while the Modification is not expected to increase impacts on the air quality environment, contemporary cumulative assessment conducted for the Modification indicates that EPA's new impact assessment criteria for annual average particulate matter 10 micrometres or less in diameter ($PM_{10}$) (25 micrograms per cubic metre [$\mu g/m^3$]) would be exceeded by cumulative emissions at a limited number of private receivers.

The EPA (2017) requested information regarding further options to mitigate these predicted cumulative exceedances.

Response

Based on the assessment conducted by Todoroski Air Sciences (2017) for the Environmental Assessment, MACH Energy advises the following with respect to the predicted cumulative exceedances at the identified residences:

- in each case the private receivers that are predicted to exceed the new $PM_{10}$ annual average criteria are located more proximal to another active mining operation(s) than they are to the modelled mining activities of the Mount Pleasant Operation (i.e. the contributions of other sources already approach the criteria, with Mount Pleasant Operation predicted to contribute a small margin only);
- the dispersion modelling conducted is conservative in that it does not account for the effect of rainfall reducing dust emissions from all sources;
- the modelling uses emission rates of other mines from publicly available air quality assessments, which typically assume maximum approved/proposed extraction rates (i.e. it is highly unlikely that each nearby mine would operate at maximum extraction rates concurrently);
- contributing emissions have been included for the proposed Drayton South Coal Project, which was refused by the NSW Planning Assessment Commission in February 2017 (site now being acquired by another resource company); and
- the effects of management of short-term impacts (e.g. proactive and reactive mitigation measures such as partial or full-site shutdowns or additional watering) have conservatively not been incorporated into the estimates of cumulative annual average $PM_{10}$ concentrations.

It is further noted that the Mount Pleasant Operation has an Environment Protection Licence condition that requires the shutdown of all major dust generating activities on-site under a particular combination of adverse winds and measured $PM_{10}$ levels at the OEH Muswellbrook north-west monitor. The potential effects of this reactive measure at the Mount Pleasant Operation on cumulative annual average $PM_{10}$ predictions was also not included in the air quality modelling.

Short-term air quality management throughout the year has the potential to reduce the cumulative annual average concentrations of $PM_{10}$ at privately-owned receivers.

MACH Energy suggests that this form of reactive air quality management requirement should be progressively rolled out to other neighbouring mines as Environment Protection Licences are periodically updated to reflect current air quality standards. MACH Energy anticipates that this EPA initiative would lead to further reductions in cumulative $PM_{10}$ emissions under particularly adverse meteorological and dust conditions that would also contribute to lowering annual average particulate levels.

MACH Energy also has a cumulative air quality management protocol prepared in consultation with the nearby mining operations in its Air Quality and Greenhouse Gas Management Plan. This protocol will be implemented if required to notify nearby mining operations of any MACH Energy monitoring observations that indicate particularly elevated dust levels are being generated by another nearby mining operation.

Further, in the event that the new EPA new impact assessment criteria for annual average $PM_{10}$ (25 µg/m$^3$) were exceeded at any monitoring locations maintained by MACH Energy on private property that is outside of the Mount Pleasant Operation's acquisition upon request zone, MACH Energy would review its on-site air management control measures and consult further with the EPA.

***Future Particulate Matter Standards May be More Stringent***

Issue

NSW Health (2017) noted that particulate matter standards may be further tightened in the future, and requested assessment predictions against potential future air quality standards that are planned in 2025 as part of National Environment Protection Measures (NEPM). With these future air quality standards in mind, NSW Health also requested detailed additional isopleth diagrams.

Response

The Ambient Air Quality NEPM standards for particulate matter are based on measurements at sites that reflect the general exposure of populations in large metropolitan areas, they do not automatically apply to individual industrial operations.

MACH Energy considers that it is unreasonable for NSW Health to request the Mount Pleasant Operation to assess and report against *potential future standards* that do not currently apply to NSW population centres, let alone the regulation of individual industrial projects. For this reason, no additional isopleth diagrams are required to be developed to address NSW Health's query pertaining to 2025 air quality emissions.

However, it is anticipated that future State Significant Development applications or associated Modifications at the Mount Pleasant Operation would be assessed based on the mining equipment and applicable EPA air quality standards at the time.

MACH Energy therefore anticipates that the Mount Pleasant Development Consent will be periodically contemporised to reflect the relevant air quality standards of the day, as MACH Energy anticipates would be the case with the current Modification.

***Management of Particulate Levels Over Short Term Averaging Periods***

Issue

The EPA (2017) stated the following with respect to the potential for 24-hour $PM_{10}$ and particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) exceedances:

> *Assessment also shows additional days exceeding the 24-hour impact assessment criterion for each of $PM_{2.5}$ and $PM_{10}$ at twelve privately owned receptors. Proper implementation of the reactive management scheme mitigates exceedances of the impact assessment criterion for each 24-hour $PM_{10}$ concentration and 24-hour $PM_{2.5}$ concentration that would otherwise occur.*

Response

MACH Energy concurs that the effective implementation of the proactive and reactive management measures by the Mount Pleasant Operation (and other surrounding mining operations) will address the potential for increases in the number of $PM_{10}$ and $PM_{2.5}$ 24-hour average exceedance days at the nearest private receivers.

***Cameras for Air Quality Management***

Issue

The MSC requested that the Air Quality Operating Conditions for the Mount Pleasant Operation be updated to include reference to fixed and mobile cameras to monitor and manage visible dust.

Response

MACH Energy accepts this recommendation, subject to review of any applicable draft Consent Condition. MACH Energy notes that EPA already has an initiative with respect to managing visual dust that would also be applied at the Mount Pleasant Operation.

***Air Quality Monitoring to the North West***

Issue

The MSC requested that the Air Quality and Greenhouse Management Plan be updated to include an additional air quality monitor on the north-western perimeter of the Mount Pleasant Operation site.

Response

MACH Energy accepts this recommendation, subject to review of any applicable draft Consent Condition.

### 6.1.3 Blasting

***Management of Blasting to Maintain Compliance with Blast Criteria***

Issue

NSW Health (2017) in its submission emphasised the need for strict control of blast conditions to protect the public from vibration, overpressure and blasting fumes.

Response

MACH Energy concurs with NSW Health on this matter. Should the Modification be approved, MACH Energy would continue to implement appropriate control measures at the Mount Pleasant Operation in accordance with an approved Blast Management Plan.

### 6.1.4 Road Transport

***Mine Affected Roads Network***

Issue

The MSC (2017) has suggested that MACH Energy should fund an update to Council's Mining Affected Road Strategy to incorporate the Mount Pleasant Operation, as well as the design and a proportion of the cost of construction and maintenance of an eastern link road.

Response

MACH Energy has reviewed the MSC's *Muswellbrook Mine Affected Roads Stage 1 Road Network Plan* (MSC, 2015) (Mine Affected Roads Plan) which was endorsed by Council in October 2015.

MSC's Mine Affected Roads Plan already incorporates allowance for the potential traffic generation of the Mount Pleasant Operation for an assumed operational period of 21 years.

The Modification does not pose any material change to the operational traffic generation of the Mount Pleasant Operation. Therefore, MACH Energy is of the opinion that MSC's request for MACH Energy to fund an update to the Mine Affected Roads Plan does not have a direct nexus with the proposed Modification.

MACH Energy also notes that the MSC Mine Affected Roads Plan indicates that the MSC does not support the currently approved Mount Pleasant western link road, rather proposing an alternative link road to the east of Bengalla and Mount Pleasant between Wybong Road and Bengalla Link Road.

While MACH Energy is of the opinion that there is no nexus between the proposed Modification and MSC's preferred alternative eastern link road, it is currently conducting engineering studies to facilitate development of an alternative product coal transport system at the Mount Pleasant Operation.

Once suitable approvals have been obtained, in accordance with the Master Cooperation Agreement between the two mining operations, MACH Energy would construct the alternative product coal out-loading infrastructure to facilitate the removal of approved Mount Pleasant Operation infrastructure that is located within Bengalla Mine's approved ultimate open cut extent (Section 6.3).

As part of this alternative product coal transport system, MACH Energy is considering the opportunity to coincidently design the eastern link road (subject to separate environmental assessment and approval) that fulfils the function of the eastern road transport link identified in the MSC's Mine Affected Roads Plan (i.e. Option 2B).

MACH Energy would continue to liaise with the MSC and DP&E with respect to the design and engineering of the alternative product coal transport system and the potential to integrate this with MSC's preferred eastern link road. However, MACH Energy stresses that there is no nexus between the current Modification and this potential local road network upgrade.

***Restricting Heavy Vehicle Traffic Movements***

Issue

The MSC proposed a Condition of Consent that would limit the use of Mount Pleasant Operation heavy vehicles on Wybong Road outside of a designated section.

Response

While MACH Energy is in agreement with the intent of MSC's suggested draft Consent Condition, access to areas of the Mount Pleasant Operation site may at times be required by heavy vehicles directly from the eastern section of Wybong Road. In these cases, the proposed condition may inadvertently impose a significant and unnecessary detour burden of > 5 km (e.g. to access an electrical switchyard east of the Eastern Out of Pit Emplacement, or gain access for exploration rigs).

MACH Energy therefore suggests that any such limitation is placed on Mount Pleasant Operation heavy vehicles accessing Wybong Road east of Rosebrook Creek and on Kayuga Road, rather than restricting heavy vehicle movements on the whole eastern portion of Wybong Road.

***Road Maintenance Management Plan***

Issue

The MSC suggested a draft Consent Condition that incorporates a requirement to develop a maintenance management plan to the satisfaction of Council with respect to portions of Bengalla Link Road, Wybong Road and the Mount Pleasant Operation western link road.

Response

MACH Energy accepts this recommendation, subject to review of any applicable draft Consent Condition.

### 6.1.5 Biodiversity

MACH Energy notes that no Government agencies raised concerns with respect to the Modification and potential impacts on biodiversity.

MACH Energy notes that the OEH (2017) submission on the Modification summarised its position as follows:

> *OEH reviewed the EA for impacts to … threatened biodiversity.*
> *….*
> *In relation to threatened biodiversity, the proposed land swap offers a larger area with greater biodiversity values for the new area to be developed. Therefore, OEH has no concerns with the proposal.*

### 6.1.6 Heritage

MACH Energy notes that no Government agencies raised concerns with respect to the Modification and potential impacts on Aboriginal cultural heritage or historic heritage values.

MACH Energy notes that the OEH (2017) submission on the Modification summarised its position with respect to Aboriginal Cultural Heritage as follows:

> *OEH reviewed the EA for impacts to Aboriginal cultural heritage … . All Aboriginal heritage sites within the emplacement extension footprint are appropriately managed under existing permits and management plans. … Therefore, OEH has no concerns with the proposal.*

The NSW Heritage Council (2017) submission also advised that no comment was required from the Heritage Council on the Modification proposal.

### 6.1.7 Water Resources

***Water Management System Schematics and Dam Spillways***

Issue

NSW EPA (2017) raised concerns regarding perceived inconsistencies between the water management schematics presented on Figure 8 of the Environmental Assessment and Figure 6 of the Site Water Balance Review (Appendix E of the Environmental Assessment). In particular, NSW EPA raised concerns regarding perceived potential discharges from:

- the Fines Emplacement Area to Sandy Creek; and
- the Mine Water Dam to BMC's Dry Creek Diversion Project.

Response

Figure 6 of the Site Water Balance Review (Hydro Engineering Consultants [HEC], 2017) provides 'gravity flow' arrows on all water storages to indicate where water would flow if rainfall was to exceed the design criteria of the storage (i.e. arrows indicate spillways as is standard engineering practice).

However, it should be noted that the Site Water Balance Review report has modelled the performance of the water management system over the life of the Mount Pleasant Operation and concludes (HEC, 2017):

> *No spills were simulated from the Fines Emplacement Area...*

Figure 8 of the Environmental Assessment only provides arrows indicating where overflows are predicted in the Site Water Balance Review to occur due to rainfall in excess of design criteria. Given the Site Water Balance Review concludes no overflows would occur from the Fines Emplacement Area or Mine Water Dam, Figure 8 does not illustrate any overflows for these two storages.

MACH Energy notes that the NSW Dams Safety Committee sets design criteria and regulates compliance for regulated water storages in NSW, including the Fines Emplacement Area.

The Mine Water Dam presented in the Environmental Assessment remains in largely the same position as presented in the approved 1997 Environmental Impact Statement (EIS). As above, Figure 6 of the Site Water Balance Review (HEC, 2017) provides a 'gravity flow' arrow that indicates where water would flow if rainfall was to exceed the design criteria of the storage. The Dry Creek Project was approved as part of the Bengalla Continuation Project in March 2015. Given the Dry Creek Diversion Project was approved to be constructed immediately downstream of the Mine Water Dam, it naturally follows that any rainfall in excess of the design criteria of the Mine Water Dam would flow to the Dry Creek Diversion Project.

Notwithstanding, as above, the Site Water Balance Review has modelled performance of the water management system over the life of the Mount Pleasant Operation and concludes (HEC, 2017):

> *No spills were simulated from the ... MWD.*

***Water Management Structures and Layout***

Issue

NSW EPA (2017) raised concerns regarding potential inconsistencies between the number of water storages shown in the original approval, the currently approved Water Management Plan, and the Environmental Assessment.

Response

The number and layout of water storages at the approved Mount Pleasant Operation will vary over time as the mine progresses. The 1997 EIS presented anticipated water storages for a full 21 year mine life. Given the development of the North Pit would not occur during the life of the Modification, the number of water storages presented in the Environmental Assessment will accordingly vary from the 1997 EIS.

MACH Energy confirms that the water management system presented in the Environmental Assessment (which is generally consistent with the recently approved Water Management Plan), represents the water management system that would be implemented at the Mount Pleasant Operation, should the Modification be approved.

***Design Criteria of Fines Emplacement Area***

Issue

NSW EPA (2017) raised concerns regarding active waste being shown between the fine rejects and the Environmental Dam 2 on Figures 3, 4 and 5 of the Site Water Balance Review (HEC, 2017).

Response

In this context, ‘Active waste’ refers to the catchment type modelled in the Site Water Balance Review.

The Fines Emplacement Area wall would be constructed of coarse reject materials and other waste rock. Therefore, it has been modelled as ‘active waste’ catchment (consistent with the approach for the Out of Pit Emplacements) for the purposes of determining the nature of runoff that would report to relevant catchments (e.g. Environmental Dam 2).

The design and construction of the Fines Emplacement Area will be subject to the requirements of an approved Waste Management Plan and no material change to the Fines Emplacement Area is proposed by the Modification.

Notwithstanding, MACH Energy notes that the NSW Dams Safety Committee sets design criteria and regulates compliance for regulated water storages in NSW, including the Fines Emplacement Area.

***Water Discharge from Sediment Dams***

Issue

NSW EPA (2017) raised concerns regarding the nature and volume of potential discharges of water from sediment dams and stressed the requirements of section 120 of the *Protection of the Environment Operations Act, 1997*.

Response

No change to the nature or design criteria of the Mount Pleasant Operation sediment dams is proposed as part of the Modification. Notwithstanding, the design criteria for the sediment dams is provided in Table 4 of the Site Water Balance Review (Appendix E of the Environmental Assessment).

Detailed design criteria for the sediment dams are also provided in Section 5.3.3 of the Mount Pleasant Operation Erosion and Sediment Control Plan (Appendix 2 of the approved Water Management Plan). The Erosion and Sediment Control Plan describes that sediment dams will be sized in accordance with current recommended design standards in the following guidelines:

- *Managing Urban Stormwater, Soils and Construction Volume 1* (Landcom, 2004); and
- *Managing Urban Stormwater, Soils and Construction*, *Volume 2E – Mines and Quarries* (Department of Environment and Climate Change, 2008).

MACH Energy has previously discussed options with respect to the potential licensing of individual sediment dams as release points in the Environment Protection Licence with the Newcastle EPA. The Newcastle EPA previously advised that it did not support licensing individual sediment dams as discharge points.

Notwithstanding, MACH Energy is aware of the requirements of section 120 of the *Protection of the Environment Operations Act, 1997* and will continue to work with the EPA to manage Mount Pleasant Operations sediment dams accordingly.

***Hunter River Salinity Trading Scheme Releases***

Issue

NSW Health raised concerns regarding potential Mount Pleasant Operation licensed discharges of mine water to the Hunter River in accordance with the Hunter River Salinity Trading Scheme.

Response

No changes to Hunter River discharges are proposed as part of the Modification. Notwithstanding, MACH Energy notes that any discharges to the Hunter River would be undertaken in accordance with:

- the Hunter River Salinity Trading Scheme; and
- an Environment Protection Licence issued under the *Protection of the Environment Operations Act, 1997*.

MACH Energy also notes that releases located at the approved discharge point would result in water entering the Hunter River downstream of Muswellbrook. The Hunter River water supply off take is also located downstream of Muswellbrook.

***Water Supply***

Issue

NSW EPA (2017) sought clarification that the sourcing of water from neighbouring mining operations was part of the Modification and suggested MACH Energy consider alternative sources of water supply. MSC (2017) proposed a Development Consent condition requiring MACH Energy to undertake all reasonable and feasible efforts to utilise surplus underground waste water from the Dartbrook Mine site to supplement the Mount Pleasant Operation water supply.

Response

The expected quantity and frequency of water to be sourced from Hunter River licensed extraction is shown on Figure 14 of the Site Water Balance Review (HEC, 2017), which indicates that annual extraction volumes would average approximately 700 megalitres under median climatic scenarios.

As described in the Environmental Assessment, in order to reduce make-up water demand from the Hunter River over the life of the Mount Pleasant Operation, MACH Energy seeks to also source excess mine water from the adjoining mines (i.e. Dartbrook and Bengalla Mines) should it be available, to minimise extraction from the Hunter River. This is consistent with MSC's explicit recommendation to source surplus underground water from the Dartbrook Mine.

The frequency, quality and quantity of water to be sourced from the Dartbrook or Bengalla Mines would depend on:

- Availability of surplus water on the other mine sites coinciding with a water deficit at the Mount Pleasant Operation.
- Suitability of Dartbrook/Bengalla water quality for the intended use at the Mount Pleasant Operation.
- MACH Energy and the other mining operator obtaining all necessary secondary approvals (e.g. Environment Protection Licence variations).

MACH Energy is therefore not currently in a position to define the quantity and quality of water that may be sourced from these operations as it would depend on the water balances of the two sites at the time.

However, it is noted that the three mining operations are located in close proximity and share some common geological strata. It is therefore anticipated that the quality of mine water at the three operations would be relatively similar, subject to differences in on-site water management practices.

MACH Energy would also consider the feasibility of other potential alternative water supply sources in consultation with DP&E and EPA.

***Water Access Licences***

Issue

DPI Water states that MACH Energy should obtain appropriate Water Access Licences to accommodate the peak groundwater demand until 2026.

Response

MACH Energy will progressively obtain appropriate licences to account for groundwater inflows throughout the life of the Mount Pleasant Operation. MACH Energy notes that it is required to hold sufficient Water Access Licences to address the predicted inflows for the individual mining period in question (i.e. peak groundwater inflows are predicted to occur much later in the mine life).

***Groundwater Monitoring Network***

Issue

DPI Water requested that MACH Energy compose a list of monitoring bores to be impacted by mining operations and how the monitoring network would be redesigned to monitor impact to groundwater and groundwater receptors for the extended period of mining (2026), if not already covered by a Groundwater Management Plan.

*Response*

MACH Energy notes that this request is addressed by the approved Groundwater Management Plan.

MACH Energy notes that only two of the existing groundwater monitoring sites (comprising five bores) are located within the extent of mining during the life of the Modification. Notwithstanding, Section 8.6 of the Groundwater Management Plan states the following with respect to the proposed establishment of additional groundwater monitoring bores (MACH Energy, 2017b):

> *MACH Energy are currently undertaking a review of the groundwater monitoring programme at the Mount Pleasant Operation as a component of the contemporary groundwater modelling (Section 6.2). As a component of this review, MACH Energy will establish the following additional groundwater monitoring bores as a component of the 2017 exploration drilling programme (Figure 8):*
>
> - *A new nested site to the north-east of the Mount Pleasant Operation that includes an alluvial and hard rock monitoring bore.*
> - *Two additional nested sites to the east of the Mount Pleasant Operation as part of an alluvial investigation programme.*
> - *New hard rock monitoring bores at two of the existing alluvial sites to the east of the Mount Pleasant Operation (i.e. MPBH-1 and MPBH-2).*

***Potable Water Quality Assurance***

Issue

NSW Health raised concerns regarding use of Hunter River water for potable supply and assurance of the quality of potable water on-site.

Response

MACH Energy notes that the Modification does not seek to alter the supply or storage of potable water on-site. Notwithstanding, MACH Energy will treat potable water to the appropriate standard in accordance with the NSW Health (2016) *Private Water Supply Guidelines* or alternatively source potable water supplies from a reputable accredited supplier.

### 6.1.8 Visual

While no Government agencies specifically raised concerns regarding potential visual impacts of the modified Eastern Out of Pit Emplacement landform, the Upper Hunter Shire Council raised a concern regarding cumulative assessment and potential impacts on Aberdeen (including visual impacts). The Upper Hunter Shire Council's concerns are addressed in Section 6.1.9.

### 6.1.9 Other

***Potential Impacts on the Bengalla Mine***

Issue

The MSC (2017) suggested a draft Consent Condition intended to address the concerns expressed by BMC regarding the proposed Modification (i.e. concern that the Bengalla Mine may need to cease operations early).

Response

MACH Energy and BMC have already established detailed commercial arrangements to manage the interaction of the two operations, including the relocation of the approved Mount Pleasant Operation rail spur. This interaction is also already addressed by Condition 37, Schedule 3 of the Development Consent DA 92/97.

Further discussion of the BMC's submission on the Modification is provided in Section 6.3 and a comprehensive tabular response to the BMC's (BMC's) 14 July 2017 submission is provided as Attachment 1.

Notwithstanding, MACH Energy would be prepared to accept a condition to address MSC's concerns that would read as follows:

> *The applicant must construct an alternative product coal rail outloading facility within two years of obtaining all required Mining Leases, easements or other authorisations, in accordance with the agreement required by Condition 37, Schedule 3.*

***Future State Significant Development Applications***

Issue

MSC (2017) proposed inclusion of a new Consent Condition requiring MACH Energy to submit a development application by June 2019 for the Mount Pleasant Operation to extend operations beyond 2026.

Response

MACH Energy is of the opinion that it would not be appropriate to address this request with a new Consent Condition.

Rather, MACH Energy has committed to MSC that it intends to progress its State Significant Development application with the application target being the requested timeframe. MACH Energy would keep the Council abreast of the status of environmental and engineering studies that are required in support of the proposal and consultation outcomes with key regulatory agencies (i.e. the application would only be formally made once MACH Energy is satisfied that all environmental and engineering challenges have been addressed to its satisfaction).

***Definition of Public Infrastructure***

Issue

MSC (2017) proposed inclusion of a definition of "public infrastructure" in the Development Consent DA 92/97.

Response

MACH Energy accepts this recommendation, subject to review of any applicable definitions.

***Environmental Management Plan Updates***

Issue

DPI Water (2017) recommended that MACH Energy update the Water Management Plan, Rehabilitation Management Plan and Waste Management Plan in consultation with DPI Water (where relevant to the proposed Modification).

Response

MACH Energy accepts this recommendation, subject to review of any applicable draft Consent Conditions.

***Incompatibility between Mining and Other Industries (Equine, Agriculture and Tourism)***

Issue

The Upper Hunter Shire Council acknowledged that the Mount Pleasant Operation is located on mining tenements in the MSC Local Government Area, and that mining is an important economic driver for the region.

However, the Upper Hunter Shire Council objected to the proposed Modification on the basis of its position statement on coal and coal seam gas activities, and potential cumulative impacts (including potential impacts on the equine and viticulture industries).

The Council also raised the concept of mining exclusion zones to protect other industries.

Response

MACH Energy notes that the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time.

Mining under the Modification would remain within the mining tenements already held by MACH Energy.

The issue of potential mining exclusion zones raised by the Upper Hunter Shire Council is a matter for consideration by the NSW Government. MACH Energy notes that the Mount Pleasant Operation is not located in close proximity to the key horse studs. MACH Energy will continue to assess its proposals consistent with the policies and assessment requirements of the NSW Government that apply at the time.

Consideration of the proximity of the Mount Pleasant Operation to key horse studs is provided in Sections 6.2.8 and 6.2.9.

***Cumulative Impacts of the Modification and Future Mining Proposals, Particularly on Aberdeen***

Issue

The Upper Hunter Shire Council (2017) raised a concern that the Mount Pleasant Operation is one of three open cut projects being pursued in close proximity to the township of Aberdeen, and these projects represent a potential intensifying of mining operations with potentially severe impacts. The Council raised concerns with respect to cumulative assessment of the three proposals.

The Upper Hunter Shire Council (2017) also raised a concern that Aberdeen is built upon a western facing slope and suggested that many residences would be impacted by significant losses of visual amenity due to cumulative impacts of the three potential projects, and air, noise and light pollution.

Response

As stated above, the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time. The proposed Modification is not a "greenfields" project.

The Modification environmental assessments have, where relevant, taken into account the potential cumulative impacts of the Modification plus impacts of approved surrounding mining operations (i.e. Noise Impact Assessment, Air Quality and Greenhouse Assessment and Road Transport Assessment).

It is conventional environmental assessment practice to undertake cumulative assessment based on the proposal at hand in combination with other approved projects that may be of environmental relevance, plus consider nearby major projects that have been subject to comprehensive environmental assessment, but are not yet determined.

MACH Energy notes that the two future proposals listed by the Upper Hunter Shire Council (i.e. a Dartbrook Mine open cut proposal and a Muswellbrook Coal Mine western open cut proposal) are not approved and do not have EISs available for review by MACH Energy.

MACH Energy therefore anticipates that these other proposals will consider the Mount Pleasant Operation incorporating the Modification, where relevant in subsequent EISs.

MACH Energy also notes that mining within the period of the Modification (i.e. to 2026) would not include the development of the approved Mount Pleasant Operation North Pit, which is located closer to Aberdeen. Notwithstanding, MACH Energy has considered the potential implications of the Modification on air, noise and visual impacts and presented the findings of these reviews in the Environmental Assessment.

### 6.1.10 Rehabilitation and Final Landform

***Rehabilitation Strategy***

Issue

MSC (2017) suggested a draft Consent Condition in its submission that the Mount Pleasant Operation be required to prepare a Rehabilitation Strategy in consultation with Council that provides:

- detail on progressive rehabilitation and micro and macro relief;
- post-mining land uses;

- closure objectives; and
- final voids (including shapes, depth, volumes and post-mining uses).

The DRG also requested that the Rehabilitation Strategy be updated to include an outline of rehabilitation methodology.

Response

MACH Energy accepts these recommendations, subject to review of any applicable draft Consent Condition.

It is noted that DRG also requested some additional detail on these same aspects, including provision of some preliminary information in advance of the Modification determination. These are addressed in the sub-sections below.

***Post-mining Land Use and Associated Completion Criteria***

Issue

The DRG (2017) requested further details of the post-mining land uses, specific rehabilitation objectives and completion criteria, including objectives for vegetation composition, structure and ecosystem function.

Response

MACH Energy notes that the Environmental Assessment stated the following with respect to final land use and rehabilitation (Section 5) (MACH Energy, 2017a):

> *MACH Energy is aware of the level of local interest or concern with respect to the shape and form of Mount Pleasant Operation final mine landforms and the progress of rehabilitation/revegetation.*
>
> *In consultation with the MSC, MACH Energy has therefore developed the following design principles for the modified Mount Pleasant Operation final landform:*
>
> - *the emplacement landform would be designed to look less "engineered" when viewed from Muswellbrook (i.e. incorporation of macro-relief to avoid simple blocky forms);*
> - *surface water drainage from the waste emplacement landform would incorporate micro-relief to increase drainage stability and avoid major engineered drop structures where practical;*
> - *the final void (and associated drainage network) would be shaped to reflect a less engineered profile that is more consistent with the surrounding natural environment; and*
> - *MACH Energy would progressively develop and revegetate the final landform, to reduce visual impacts in Muswellbrook and other local vantage points.*
>
> *The following subsections provide further discussion on these principles.*

Section 5.1 and associated subsections of the Environmental Assessment then described in further detail the conceptual final landform, relief principles, final voids and revegetation, including the proposed revegetation of the outer slopes of the Eastern Out of Pit Emplacement that would be amended by the Modification.

The level of detail presented in the Environmental Assessment is appropriate for the Modification assessment (i.e. presenting conceptual final landform design for the emplacement extension).

Notwithstanding, MACH Energy understands the Modification may also provide an opportunity for the DRG to review broader final land use, rehabilitation objectives and revegetation planning for the Mount Pleasant Operation and seek a general update to relevant Consent Conditions, should the Modification be approved.

To inform the NSW Government's consideration of potential revisions to the rehabilitation related conditions in Development Consent DA 92/97 should the Modification be approved (i.e. Conditions 53-56, Schedule 3), MACH Energy has prepared a Mount Pleasant Preliminary Rehabilitation Strategy (Attachment 2) that outlines MACH Energy's position on these matters.

Consistent with MSC's suggested draft Consent Condition (discussed above), MACH Energy supports the inclusion of specific requirements for preparation of a revised Rehabilitation Strategy to provide the further detail on the post-mining land uses, rehabilitation objectives and completion criteria, should the Modification be approved.

***Natural Landform Design***

Issue

The DRG (2017) requested that further information be provided on the natural landform design, including macro and micro relief, emplacement design, maximising external drainage and minimising reliance on linear drop structures.

Response

MACH Energy notes that each of these elements was explored in the Environmental Assessment (Section 5.1).

To facilitate the more rapid establishment of the final landform profiles, MACH Energy would construct the outer batters of the eastern face of the waste emplacement in 10 m lifts that also facilitate the construction of more variable compound final landform slopes.

The final landform drainage lines would be designed to accommodate natural erosive processes. This would be achieved through consideration of key erosional and geomorphic characteristics such as nature of bed material (e.g. particle size), presence of rock outcrops, bed features (such as cascades, pool and riffle zones) as well as bed and bank vegetation.

Geomorphic features would be incorporated into the design of the relevant final landform drainages. This would also be informed by investigation into the physical characteristics of waste rock and soil materials at the Mount Pleasant Operation for provision of appropriate rock, sub-soil and topsoil material for use on outer batters and in drainage features.

Throughout the life of the Modification, the conceptual final landform may be revised to reflect the outcomes of the above investigations, in consultation with the MSC and relevant NSW Government agencies. Any updates to the final landform, as well as detailed performance indicators and completion criteria, would be documented in the relevant Mining Operations Plan.

MACH Energy consulted with the DRG in September 2017 to discuss the additional information requested by DRG. It was agreed that further documentation of the final landform design would be required in a revised Rehabilitation Strategy and Rehabilitation Plan (Mining Operations Plan).

To assist the NSW Government's consideration of potential updates to the rehabilitation related conditions in Development Consent DA 92/97 should the Modification be approved (i.e. Conditions 53-56, Schedule 3), MACH Energy has prepared a Preliminary Rehabilitation Strategy (Attachment 2) that outlines MACH Energy's position on these matters.

***Mine Layout and Scheduling***

Issue

The DRG (2017) requested that MACH Energy provide an annual rehabilitation schedule against relative production milestones to allow regulatory oversight of the progress of rehabilitation.

Response

Consistent with the Environmental Assessment, MACH Energy would prioritise construction of the lower batters of the waste emplacement to final landform profile and the early revegetation of these batters to progressively minimise visual impacts in Muswellbrook and other locations to the east.

Should the Modification be approved, MACH Energy would provide annual rehabilitation schedules in the relevant Mining Operations Plan.

Further description of the management of progressive rehabilitation to maximise the initial rehabilitation of the outer face of the modified Eastern Out of Pit Emplacement is provided in Attachment 2.

***Rehabilitation Monitoring***

Issue

The DRG (2017) requested that MACH Energy conduct rehabilitation monitoring and research and provide a draft programme for review.

Response

The rehabilitation program at the Mount Pleasant Operation will focus on research and management practices that are designed to enhance rehabilitation success.

The design of the relevant final landform drainages would also be informed by investigation into the physical characteristics of waste rock and soil materials at the Mount Pleasant Operation for provision of appropriate rock, sub-soil and topsoil material for use on outer batters and in drainage features.

Throughout the life of the Modification, the conceptual final landform may be revised to reflect the outcomes of the investigations and monitoring, in consultation with the MSC and relevant NSW Government agencies. Any subsequent updates to the final landform, as well as detailed performance indicators and completion criteria, would be documented in the relevant Mining Operations Plan.

Further description of the planned rehabilitation monitoring and research programme is provided in Attachment 2.

***Rehabilitation Risk Assessment***

Issue

DRG (2017) requested that MACH Energy conduct a risk assessment of the barriers and limitations to rehabilitation and identify the measures to address these risks.

Response

Preliminary risk assessment outcomes with respect to potential barriers to rehabilitation success are provided in Attachment 2. Further risk assessment will be conducted as a component of updating the Mining Operations Plan, should the Modification be approved.

## 6.2 PART B – RESPONSES TO NON-GOVERNMENT ORGANISATION SUBMISSIONS

Responses to issues or concerns raised by businesses and NGOs are provided in the subsections below, with the exception of specific issues raised by BMC (Section 6.3).

It is noted that submissions from businesses and organisations that supported the Modification are not repeated or described below (Section 3.5).

### 6.2.1 Noise and Blasting

***Operational Noise Emissions***

Issue

A number of NGO submissions raised concerns regarding operational noise, including:

- the Mount Pleasant Operation is already approved to exceed applicable noise criteria;
- the Noise and Blasting Assessment does not use applicable contemporary modelling methods or standards;
- concerns regarding the potential for noise related sleep disturbance;
- concerns regarding low frequency noise regulation; and
- the proposed Modification would result in further exceedances of applicable noise criteria.

Response

The approved Mount Pleasant Operation is required to comply with the noise limits prescribed in Development Consent DA 92/97. These limits reflect the varying background noise environment and the fact that the NSW environmental assessment process recognises that it may not be reasonable to achieve default noise level criteria at the nearest private residences to an industrial facility.

The Noise and Blasting Assessment conducted for the Modification has generally adopted the approved Mount Pleasant Operation noise limits as defined in Development Consent DA 92/97 (i.e. subject to addressing some past inconsistencies and addressing additional residences identified by the MACH Energy contemporary dwelling verification exercise).

MACH Energy has assessed the Modification in the context of the existing approved Mount Pleasant Operation operational noise limits and relevant aspects of NSW Government policies and guidelines that apply to noise assessment of mining operations. As described in the Environmental Assessment, the Noise and Blasting Assessment found that the operational noise envelope of the approved Mount Pleasant Operation would effectively be unchanged by the Modification. In addition, the Noise and Blasting Assessment found that the Mount Pleasant Operation incorporating the Modification would comply with the night-time sleep disturbance criteria (i.e. $L_{A1(1\ min)}$) at all nearby private receivers.

MACH Energy manages the generation of on-site construction and operational noise at the Mount Pleasant Operation to Development Consent DA 92/97 criteria in accordance with an approved Noise Management Plan. This Noise Management Plan would be updated to incorporate the Modification and any associated changes to Development Consent DA 92/97 Conditions.

In addition, it is noted that the EPA is responsible for the regulation of operational noise in NSW and stated the following with respect to its review of the Modification Noise and Blasting Assessment:

> *The noise and vibration components of the MACH Energy application to modify the consent for the Mount Pleasant Open Cut Coal Mine was reviewed. The EPA can support the proposed modification subject to the following changes.*
> *...*

Section 6.1.1 presents the above quote from the EPA in further detail and also explains MACH Energy's approach to the management of the potential for low frequency noise emissions.

### 6.2.2 Air Quality

***General Air Quality Impacts***

Issue

A number of submitters raised concerns that dust levels or air pollution is unacceptable and is affecting amenity and/or would worsen with the Modification.

Response

MACH Energy has assessed the Modification in the context of the existing approved Mount Pleasant Operation air quality compliance limits and relevant aspects of NSW Government policies and guidelines that apply to air quality assessment of mining operations.

The Air Quality and Greenhouse Gas Assessment has also assessed the Mount Pleasant Operation incorporating the Modification in the context of more stringent EPA annual average $PM_{10}$ assessment criteria that were described in an update to *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (the Approved Methods) (EPA, 2016) that was gazetted by the NSW Government in January 2017.

As described in the Environmental Assessment, the Air Quality and Greenhouse Gas Assessment found that the Modification would not increase the air quality emissions of the approved Mount Pleasant Operation.

***Status of the Voluntary Land Acquisition and Mitigation Policy***

Issue

Concerns were raised regarding the suitability of the *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments* (NSW Government, 2014) for assessing air quality impacts, as it does not reflect the EPA's updated Approved Methods that were gazetted in 2017. Some submissions argued that the Voluntary Land Acquisition and Mitigation Policy should be updated before the Modification is determined.

Response

As described in the response above, the Modification Air Quality and Greenhouse Gas Assessment has considered the updates to the Approved Methods, irrespective of whether the updated annual average $PM_{10}$ impact assessment criteria has been incorporated in the NSW Government's Voluntary Land Acquisition and Mitigation Policy.

As described in the Environmental Assessment, the Air Quality and Greenhouse Gas Assessment found that the Modification would not increase the air quality emissions of the approved Mount Pleasant Operation.

The need for, and timing of, any future amendments to the Voluntary Land Acquisition and Mitigation Policy to address the updated Approved Methods is a matter for the NSW Government to consider and is not of any particular relevance to the proposed Modification.

***Existing Air Quality Criteria Exceedances***

Issue

A concern was raised that existing $PM_{10}$ and $PM_{2.5}$ air quality criteria are already being exceeded in the local area, and that the Modification would result in further exceedances of air quality criteria. A concern was also raised that the Air Quality and Greenhouse Gas Assessment did not analyse recent $PM_{2.5}$ data.

Response

As described in the Environmental Assessment, the Air Quality and Greenhouse Gas Assessment found that the Modification would not increase the air quality emissions of the approved Mount Pleasant Operation.

Notwithstanding, MACH Energy acknowledges that exceedances of applicable air quality criteria are already occurring in the area, particularly winter-time exceedances of applicable $PM_{2.5}$ criteria in suburban areas that may be of concern. These emissions are particularly associated with the use of wood heaters in more densely populated areas. Background air quality at the most proximal private receivers to the Mount Pleasant Operation is less influenced by these suburban anthropogenic sources.

It is noted that Appendix B of the Modification Air Quality and Greenhouse Gas Assessment provides a comprehensive analysis of the background meteorological and air quality environment including $PM_{10}$ and $PM_{2.5}$ data for the period 2012 to 2015. The Assessment also assesses the potential air quality impacts of the Mount Pleasant Operation incorporating the proposed Modification.

MACH Energy would implement the air quality mitigation and management measures, and predictive and real-time air quality management system and associated response protocols, detailed in the Air Quality and Greenhouse Gas Management Plan for the Mount Pleasant Operation. The Air Quality and Greenhouse Gas Management Plan would be reviewed and, if required, revised to reflect any changes to Development Consent DA 92/97 that arise from the Modification.

It is also noted that the EPA (2017) submission states the following with respect to the potential for the Modification to contribute to short term exceedances of $PM_{10}$ and $PM_{2.5}$ criteria:

> *Assessment also shows additional days exceeding the 24-hour impact assessment criterion for each of $PM_{2.5}$ and $PM_{10}$ at twelve privately owned receptors. Proper implementation of the reactive management scheme mitigates exceedances of the impact assessment criterion for each 24-hour $PM_{10}$ concentration and 24-hour $PM_{2.5}$ concentration that would otherwise occur.*

***Heavy Metals in Rainwater Tanks***

Issue

A concern was raised by the Upper Hunter Waterkeepers Alliance (2017) that measurements some 30 km to the north north-east indicated that heavy metal concentrations in rainwater tanks had increased over the last 20 years. It was inferred that due to prevailing winds, this was associated with mining development in the Muswellbrook area.

Response

MACH Energy considers it highly unlikely that coal mining related particulate dust emissions in the vicinity of Muswellbrook would contribute materially to metals concentrations in rainwater tanks in the region.

It is noted that a number of studies and Federal Government guidance documents on the use of rainwater tanks identify local sources of metals (e.g. acidification and metals mobilisation associated with decaying vegetable matter in gutters, plus the presence of lead flashing) as being common, and potentially significant, sources of heavy metal water contamination in rainwater tanks (e.g. *Guidance on use of rainwater tanks* [Australian Government Department of Health*,* 2013] and *Lead and other heavy metals: common contaminants of rainwater tanks in Melbourne* [Magyar et. al., 2008]).

As described in the Environmental Assessment, the Air Quality and Greenhouse Gas Assessment found that the Modification would not increase the air quality emissions of the approved Mount Pleasant Operation.

***Air Quality Assessment Scenarios Considered***

Issue

A concern that the Air Quality and Greenhouse Gas Assessment did not consider enough scenarios over the life of the Modification was raised by the Lock the Gate Alliance (2017).

Response

As discussed in the Air Quality and Greenhouse Gas Assessment, the modelling scenarios considered were selected as per the following (Todoroski Air Sciences, 2017):

> *Three indicative mine plan years have been assessed for the proposed modification and represent a range of potential likely worst-case air quality impacts over the life of the mining operation. The mine plan years were selected with reference to the location of activities and intensity of operations which would likely contribute to the highest dust levels at sensitive receptor locations in each year.*

***Assessment Against New Approved Methods***

Issue

A concern was raised by the Lock the Gate Alliance (2017) that the EPA has gazetted new Approved Methods, but the proposed Modification was not assessed against the Approved Methods and the proponent stated that the new standards would not apply to the Modification.

Response

In the first instance it should be noted that the Air Quality and Greenhouse Gas Assessment did specifically assess the Mount Pleasant Operation against the updated Approved Methods, including $PM_{2.5}$ criteria and the newly reduced cumulative annual average $PM_{10}$ criteria.

Further, the Alliance appears to have misinterpreted the statement in Section 3.3 of the Air Quality and Greenhouse Gas Assessment which states the following (emphasis added):

> *Please note that these updates are not reflected in the Development Consent and EPL conditions for the Mount Pleasant Operation (or any other project in the vicinity) and therefore are not used to evaluate compliance for the existing operations.*

The Air Quality and Greenhouse Gas Assessment is correctly noting that the new EPA impact assessment criteria do not currently apply to any of the existing mining operations in the area.

***Mitigation Measures***

Issue

The Lock the Gate Alliance (2017) raised a concern that the predictive/reactive air quality control measures were not sufficiently described in the Air Quality and Greenhouse Gas Assessment and requested peer review of the Assessment.

Response

MACH Energy notes that the EPA (2017) has reviewed the Air Quality and Greenhouse Gas Assessment and stated the following with respect to the air quality control measures:

> *Assessment also shows additional days exceeding the 24-hour impact assessment criterion for each of $PM_{2.5}$ and $PM_{10}$ at twelve privately owned receptors. Proper implementation of the reactive management scheme mitigates exceedances of the impact assessment criterion for each 24-hour $PM_{10}$ concentration and 24-hour $PM_{2.5}$ concentration that would otherwise occur.*

### 6.2.3 Blasting

Issue

The Hunter Thoroughbred Breeders Association raised a concern that the Noise and Blasting Assessment failed to consider potential impacts of the Mount Pleasant Operation blast emissions on human comfort and livestock.

Response

MACH Energy notes that Section 8 of the Noise and Blasting Assessment specifically assessed the potential blasting emissions of the Mount Pleasant Operation against the criteria outlined in the guidelines prepared by the Australian and New Zealand Environment Council (1990) *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration*.

In addition, the Noise and Blasting Assessment stated the following (Section 8.7):

> *Blast and vibration management would be conducted in accordance with a Blast Management Plan which would be prepared for the Mount Pleasant Operation incorporating the Modification.*
>
> *The Blast Management Plan would include measures to reduce the potential overpressure and vibration impacts of the Mount Pleasant Operation, including procedures for the management of livestock in close proximity to blast events.*

### 6.2.4 Road Transport

Issue

Ridgelands Residents Incorporated raised a concern that the MSC does not support the development of the approved Mount Pleasant Operation western link road and proposes an alternative eastern link that would potentially disadvantage this community.

Response

MACH Energy notes that the consideration of alternative public road links to compensate for the approved closure of Wybong Road is unrelated to the current Modification.

However, MACH Energy recognises that the issue of alternative public road realignment options can potentially be divisive as travel times and associated convenience can vary for differing road user groups.

MACH Energy will continue to consult with the MSC and the local community with respect to potential road network upgrade options and the associated timing of the approved closure of Wybong Road.

### 6.2.5 Biodiversity

***Significance of Potential Clearing Impacts***

Issue

The Lock the Gate Alliance (2017) raised a concern that while the area of vegetation clearing under the Mount Pleasant Operation may be unchanged by the Modification, the significance of the impacts associated with this clearing may have changed.

Response

It is noted that the OEH has regulatory oversight with respect to potential impacts on biodiversity and stated the following with respect to the proposed Modification (Section 6.1.5):

> *OEH reviewed the EA for impacts to … threatened biodiversity.*
> *…*
> *In relation to threatened biodiversity, the proposed land swap offers a larger area with greater biodiversity values for the new area to be developed. Therefore, OEH has no concerns with the proposal.*

MACH Energy would continue to manage biodiversity at the Mount Pleasant Operation in accordance with existing procedures.

In addition, while not required for Development Consent DA 92/97, MACH Energy holds and manages a 13,522 ha biodiversity offset that was established as part of the Mount Pleasant Operation approval under the *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) in 2011 (Coal & Allied, 2015 – *Offset Management Plan Mount Pleasant Project*).

### 6.2.6 Heritage

Issue

A number of horse breeding related NGOs raised concerns about serious and potentially irreversible impacts on Aboriginal cultural heritage and historic heritage that would arise due to the Modification, as well as concerns regarding the level of assessment conducted, cumulative impacts, and impacts on aesthetic or intangible values.

Response

As described in the Environmental Assessment (Section 4.7):

- Previous Mount Pleasant Operation heritage assessments have identified a number of Aboriginal heritage sites within the proposed emplacement extension that are within the extent of an existing Aboriginal Heritage Impact Permit #C0002053.
- Three historic heritage sites of some local heritage significance have been identified in the vicinity of the emplacement extension - two of these would already be disturbed by the approved Mount Pleasant Operation and the third would not be disturbed by the Modification.

It is noted that the OEH has regulatory oversight of Aboriginal cultural heritage impact assessment and stated the following with respect to the Modification (Section 6.1.6) (OEH, 2017):

> *OEH reviewed the EA for impacts to Aboriginal cultural heritage … All Aboriginal heritage sites within the emplacement extension footprint are appropriately managed under existing permits and management plans. … Therefore, OEH has no concerns with the proposal.*

The NSW Heritage Council (2017) submission also advised that no comment was required from the Heritage Council on the Modification proposal.

Notwithstanding, MACH Energy would continue to apply the Aboriginal heritage management measures consistent with the requirements of Aboriginal Heritage Impact Permit #C0002053 and the relevant approved Aboriginal Heritage Management Plan for the Mount Pleasant Operation.

### 6.2.7 Water Resources

***Water Impacts on Other Industries***

Issue

A number of NGO submissions raised concerns regarding potential impacts on agricultural and equine industries due to potential impacts of the Modification on water resources.

Response

The construction and operation of the Mount Pleasant Operation is currently undertaken in accordance with an approved Water Management Plan.

The Environmental Assessment considered the potential impacts of the Modification on water resources and concluded that the Modification would not result in a material change to the groundwater and surface water impacts of the approved Mount Pleasant Operation, given the Modification would not:

- significantly alter the approved general arrangement of the Mount Pleasant Operation;

- significantly increase the development area of the mine;
- increase the approved annual maximum ROM coal and waste rock production rates; or
- include any significant changes to the approved water management system at the site.

The Modification would result in some minor changes to catchment excision associated with the Mount Pleasant Operation as a result of the emplacement extension. HEC (2017) reviewed the potential impact of the catchment excision and concluded that it would not result in an increase to the total maximum excised catchment associated with the Mount Pleasant Operation (at any one time), due to the delay to the commencement of the approved North Pit. Therefore, any potential incremental impacts from the Modification on the Hunter River catchment would be negligible (HEC, 2017).

HEC (2017) also undertook contemporary site water balance modelling, including an assessment of potential water take and discharges to the Hunter River. The outcomes of the contemporary modelling undertaken by HEC (2017) are not materially different to the outcomes of the water management system modelling presented in the 1997 EIS (ERM Mitchell McCotter, 1997).

***Water Quality***

Issue

The Lock the Gate Alliance and Upper Hunter Waterkeepers Alliance Inc. raised concerns regarding potential impacts of the Modification on water quality, including in the Hunter River.

Response

The Modification would not include any significant changes to the approved water management system at the site. In particular, no material changes to Hunter River discharges are proposed as part of the Modification. Notwithstanding, MACH Energy notes that any discharges to the Hunter River would be undertaken in accordance with:

- the Hunter River Salinity Trading Scheme; and
- an Environment Protection Licence issued under the *Protection of the Environment Operations Act, 1997*.

In addition, the Site Water Balance Review report has modelled the performance of the water management system over the life of the Mount Pleasant Operation and concludes (HEC, 2017):

> *No spills were simulated from the Fines Emplacement Area or the MWD.*

***Water Demand***

Issue

The Lock the Gate Alliance raised concerns regarding predicted water demand and the availability of sufficient water supply to meet demand.

Response

The Site Water Balance Review report (HEC, 2017) has predicted the annual licensed extraction volumes from the Hunter River based on the water access licences held by MACH Energy and concludes that water supply reliability would exceed 97% under average conditions (HEC, 2017).

Notwithstanding, during operations, MACH Energy would undertake periodic updates to the site water balance modelling. This would allow MACH Energy to maintain the continuity of water supply for dust suppression by identifying and implementing additional management measures as required. These may include (HEC, 2017):

- acquiring additional water access licences;
- adding or relocating pumps to provide additional supply to truckfill points and/or installing additional truckfill points on the Mine Water Dam or other available water storages;
- increasing the available water storage capacity on-site (e.g. providing additional in pit storage capacity) to provide additional buffer capacity; and/or
- adjusting coal washing rates in the CHPP (and potentially producing additional bypass coal) as necessary in particularly dry periods to maintain continuity of dust suppression activities.

The above is consistent with Condition 25, Schedule 3 of Development Consent DA 92/97 which requires MACH Energy to adjust its operations to match water supply.

***Fines Emplacement Area***

Issue

Hunter Thoroughbred Breeders Association raised concerns regarding the design and operation of the Fines Emplacement Area, and associated water management system.

Response

The design and operation of the approved Fines Emplacement Area is described in Section 2.8 of the Environmental Assessment, which states:

> *The Fines Emplacement Area strategy described in the 1997 EIS involved the construction of a series of cells beginning in the upper section of the Fines Emplacement Area catchment. Consistent with current engineering practice, MACH Energy has adopted a more contemporary approach to developing the Fines Emplacement Area. This involves construction of the embankment at the downstream end of the Fines Emplacement Area catchment. The embankment would be progressively raised throughout the life of the Mount Pleasant Operation as additional storage capacity is required.*

MACH Energy notes that the NSW Dams Safety Committee sets design criteria and regulates compliance for regulated water storages in NSW, including the Fines Emplacement Area. The Fines Emplacement Area is being constructed in accordance with contemporary NSW Dams Safety Committee design criteria and an approved Waste Management Plan.

Figure 6 of the Site Water Balance Review (HEC, 2017) provides 'gravity flow' arrows on all water storages to indicate where water would flow if rainfall was to exceed the design criteria of the storage (i.e. arrows indicate spillways as is standard engineering practice). However, it should also be noted that the Site Water Balance Review report has modelled the performance of the water management system over the life of the Mount Pleasant Operation (including simulating some 121 years of rainfall records) and concludes (HEC, 2017):

> *No spills were simulated from the Fines Emplacement Area...*

### 6.2.8 Visual

***Potential Visual Impacts on Darley Kelvinside***

Issue

Godolphin Australia (Darley) (2017) raised a concern regarding the potential for the Modification to have visual (and reputational impacts) on Kelvinside (located to the north-east of Aberdeen) and its integrated horse breeding operations in the Hunter Valley region due to impacts on visual amenity.

Response

The development of the Mount Pleasant Operation was approved for 21 years of mining in 1999.

Four years later when Darley acquired Kelvinside Stud (Darley, 2017) it was widely known that the Mount Pleasant Operation was a significant mining development in the vicinity of Muswellbrook that was approved, but had not yet been commenced by Coal & Allied.

MACH Energy considers it unlikely that that the purchase of Kelvinside Stud would have been undertaken without a due diligence process that included consideration of the proximity of existing, proposed and approved mining projects.

MACH Energy notes that Kelvinside is located approximately 8.5 km to the north-east of the Mount Pleasant Operation. Between the Kelvinside operation and Mount Pleasant Operation there are a number of topographic features including Knob Hill as well as extensive intervening vegetation. This suggests that the probability of any material visual impacts from the approved Mount Pleasant Operation occurring on-site at Kelvinside would be extremely low.

Further, the proposed Modification specifically includes a range of measures aimed to improve the visual amenity of the Mount Pleasant Operation final landform from Muswellbrook and the local highway network, should the Modification be approved.

***Visual Impact Analysis***

Issue

Concerns were raised by a number of NGOs that the Modification would increase the visual amenity impacts of the Mount Pleasant Operation on the local area, including nearby residences, Muswellbrook, key transport routes and on adjoining land uses.

Concerns were also raised that a simulation was not completed for Aberdeen which is located in an elevated topographic location, and that the visual impacts of the Mount Pleasant Operation would cumulatively add to the impacts of the other approved and proposed mines in the region, including night-lighting.

Response

The emplacement extension and other proposed changes to the final landform would alter the views of the Mount Pleasant Operation, particularly when viewed from Muswellbrook and other local vantage points. The modified landform is intended to improve the overall appearance of the Mount Pleasant Operation landform by incorporating the following concepts:

- the final landform surface of the upper lifts on the eastern side of the emplacement would be varied to break up the horizon line when viewed from the east; and
- the toe of the emplacement would be extended to better align with the underlying topography.

During mining, the visual impacts of the Mount Pleasant Operation incorporating the Modification would be largely unchanged in Muswellbrook. However, the landform improvements have been specifically targeted at improving views of the final landform from Muswellbrook and other local vantage points (post-mining). As a result, the proposed landform improvements would further reduce the visual impacts following rehabilitation, by improving visual integration of the final landform with surrounding landscape topography and vegetation patterns and textures.

The modified eastern face of the 2026 final landform would include a number of spurs and valleys. The high points on the 2026 final landform have been designed to align with these spurs to further improve the more natural appearance of the landform from viewpoints to the north-east and south-east, where views of the mine landform are most prominent during the life of the Modification.

MACH Energy would prioritise construction of the lower batters of the waste emplacement to the final landform profile, and the early revegetation of these batters to progressively minimise visual impacts in Muswellbrook and other locations to the east. Consistent with MSC's recommendations for the Bengalla Mine final landform, the eastern face of the Mount Pleasant Operation 2026 final landform would be revegetated with native tree species. This would allow the landform to assimilate with the open woodland communities within the surrounding environment and also be consistent with the revegetation of the eastern face of the Bengalla Mine landform.

Delay to the commencement of the approved North Pit would result in some approved Mount Pleasant Operation mine landforms not being visible at some viewpoints during the life of the Modification. The Environmental Assessment identified that the mine landforms would not be visible from receivers in Aberdeen and Kayuga during the life of the Modification. This is a result of an intervening vegetated ridgeline.

Consistent with the noise condition recommended by MSC, MACH Energy would limit works on the Eastern Out of Pit Emplacement outer batters to daylight hours. This would have the added benefit of reducing potential night-lighting impacts on Muswellbrook and other receivers to the east.

For potentially sensitive viewpoints to the south and west, the Modification would also reduce visual impacts associated with the approved South West Out of Pit Emplacement, that would no longer be constructed as a component of the Modification.

MACH Energy therefore submits that the Modification would result in material improvements to both the final landform and the visual impacts of the approved Mount Pleasant Operation.

MACH Energy notes that the MSC (2017) stated the following in its submission:

> *In previous discussions with MACH Energy prior to this submission, Council raised its concerns regarding the incorporation of* macro *and micro-relief into the landform, particularly with respect to the Eastern Out of Pit Emplacement, and void design. MACH Energy responded with a significantly improved design over the dated design principles included in the original 1997 EIS. Council considers these improved design principles need to be included as a component of the revised Consent to provide clarity to the community and with adequate detail, should assessment against compliance be needed in the future.* …

### 6.2.9 Other

***Greenhouse Gas Emissions***

Issue

A concern was raised by the Denman Aberdeen Muswellbrook Scone Healthy Environment Group (2017) that the potential costs of greenhouse gas emissions to Australia from the Mount Pleasant Operation should be re-evaluated in a new EIS.

Response

In accordance with the *National Greenhouse Accounts Factors* (Commonwealth Department of the Environment and Energy, 2016), direct greenhouse gas emissions are referred to as Scope 1 emissions, and indirect emissions are referred to as Scope 2 and Scope 3 emissions.

Annual average Scope 1 and 2 emissions for the Mount Pleasant Operation incorporating the Modification are estimated to be approximately 0.22 million tonnes of carbon dioxide equivalent (Mt $CO_2$-e), which is approximately 0.04% of the estimated greenhouse gas emissions for Australia during 2014 (Todoroski Air Sciences, 2017).

The Federal Government of Australia has adopted a greenhouse gas emission reduction target to reduce emissions to 26–28% on 2005 levels by 2030 which represents a 50–52% reduction in emissions per capita and a 64–65% reduction in the emissions intensity of the economy between 2005 and 2030 under the United Nations Framework Convention on Climate Change at the 21st Conference of the Parties in Paris in 2015 (Commonwealth of Australia, 2015).

MACH Energy understands that these targets will be achieved by a combination of Direct Action policies that reduce emissions and increase energy productivity, the Renewable Energy Target, energy efficiency improvements, phasing out very potent synthetic greenhouse gases, and direct support for investment in low emissions technologies and practices (Commonwealth of Australia, 2015).

Given the above national scheme to address the greenhouse gas intensity of the Australian economy, MACH Energy does not concur that further economic assessment to consider the potential costs of Mount Pleasant Operation Scope 1 and Scope 2 greenhouse gas emissions is necessary for the Modification.

Greenhouse gas emissions from the Mount Pleasant Operation would continue to be monitored, and where relevant, reported annually in accordance with MACH Energy's obligations under the National Greenhouse and Energy Reporting System.

***Potential Impact of Coal Mines and Coal Fired Power Stations on Human Health***

Issue

Concerns were by raised the Scone Equine Hospital (2017) that coal mining and coal fired power stations in the Hunter Valley adversely impact human health and this should be considered by the NSW Government.

Response

MACH Energy does not have any expertise in human epidemiology and the Scone Equine Hospital has correctly identified that the regulation of industry to protect human health is a matter for consideration by the NSW Government.

The Mount Pleasant Operation is an approved coal mine that is being developed by MACH Energy in accordance with the regulatory requirements of the NSW Government, including for the management or air quality, noise and blasting emissions.

MACH Energy has assessed the Mount Pleasant Operation incorporating the Modification against contemporary NSW Government policies and guidelines, including guidelines that may include health or amenity based criteria.

***Project Design Detail***

Issue

A number of NGO submissions raised a concern about the level of design detail presented in the Environmental Assessment and suggested that final design information should be presented.

Response

A number of NGO groups have suggested that additional design information should have been presented in the Environmental Assessment and/or requested a new EIS be completed. However, in many cases the project aspect mentioned is unrelated to the proposed Modification (e.g. product coal transport is not the subject of this Modification).

The Environmental Assessment presents sufficient detail to facilitate assessment of the potential environmental impacts of proposed modified project elements, and to appropriately reflect the assessment stage. Further detailed engineering design may be conducted following determination of the Modification application, where it is required.

***Reassessment of the Mount Pleasant Operation***

Issue

Godolphin Australia raised a concern regarding the proximity of the Mount Pleasant Operation to Muswellbrook, Aberdeen and potentially new rural residences and suggested that this triggered the need to reassess the potential impacts on rural industry, critical industry clusters, towns and the community.

Response

MACH Energy notes that the construction and operation of the Mount Pleasant Operation is already approved, and has been since 1999.

The proposed Modification involves an extension to the Mount Pleasant Operation operational life, however, with this extension to the duration of mining would be less than the 21 years of operational activity that was approved in 1999.

MACH Energy understands that the approved Mount Pleasant Operation was considered when the NSW Government drew up boundaries of critical industry clusters in the vicinity of Muswellbrook.

Further, MACH Energy anticipates that any subsequent development that has occurred in the vicinity of the Mount Pleasant Operation (including new rural housing), or distant development such as the further development of the Kelvinside property, would have readily identified as a potential consideration the approved Mount Pleasant Operation in any due diligence review.

***Future Approvals at the Mount Pleasant Operation***

Issue

Lock the Gate Alliance (2017) raised a concern that the Environmental Assessment indicates that the Mount Pleasant Operation would continue for at least 21 years, but has only sought to extend the mine life to 2026 via the Modification.

Response

During consultation, MSC has requested that MACH Energy put forward a new State Significant Development application within the next two years to set out its proposal for the life of the Mount Pleasant Operation, and provide associated environmental assessment and management measures (refer Section 6.1.9).

Given that satisfaction of the MSC's request will require MACH Energy to complete significant mine planning and environmental assessment works over an extended period, and the NSW major project assessment process can at times extend over many years, the Modification period has been selected (amongst other reasons) to provide investment certainty while this process is undertaken.

***Delay in Project Commencement***

Issue

Concerns were raised by a number of NGO groups that no mining has taken place at Mount Pleasant, despite previous commitments to promptly develop the project that were made in the original EIS and subsequent Modification 1.

In addition, concerns were raised that a new comprehensive environmental impact assessment was required for the Mount Pleasant Operation to reflect current standards and potential cumulative impacts and due to the elapsed time since 1999.

Response

MACH Energy acquired the Mount Pleasant Operation from Coal & Allied in August 2016 and commenced construction of the mine approximately four months later in November 2016.

The Mount Pleasant Operation is being developed in accordance with Development Consent DA 92/97. The Conditions of the Development Consent were contemporised in 2011 via Modification 1.

Notwithstanding, as stated above, MACH Energy has commenced development of a new State Significant Development proposal for the Mount Pleasant Operation.

***Mining and Thoroughbred Breeding Operations are Incompatible***

Issue

Some NGOs raised concerns that mining is incompatible with horse breeding industries, this has been the finding of the NSW Planning Assessment Commission, and the impacts of major thoroughbred breeding operations leaving the region would be significant.

Response

MACH Energy notes that the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time. The Mount Pleasant Operation is currently being constructed and will be operated in accordance with Development Consent DA 92/97. The proposed Modification is not a greenfields project.

MACH Energy also notes that the specific findings or recommendations of the NSW Planning Assessment Commission with respect to the Drayton South Project cannot arbitrarily be attributed to other regional mining operations. This is particularly so in relation to the Mount Pleasant Operation, which is located in a well established mining precinct between the Bengalla Mine and the Dartbrook Mine.

***Increased Coal Production Will Affect Viability of Other Projects***

Issue

The Hunter Communities Network raised a concern that the opening of Mount Pleasant Operation will result in the closure of other mining operations, and associated job losses.

Response

The development and closure of individual mining operations is a matter for the proponent's of individual projects to decide. Demand for coal is expected to increase in Asia and it is projected to account for 80% of the global coal demand by 2040 (International Energy Agency, 2015). Australia is geographically well placed to supply this projected increasing demand for thermal coal. Given ongoing demand for NSW thermal coal in the foreseeable future, MACH Energy does not anticipate that the opening of the Mount Pleasant Operation would result in the closure of another mining operation in NSW.

It is however noted that the Mount Pleasant Operation is a relatively low strip ratio open cut mine. Hence the cost of mining and associated greenhouse gas emissions intensity is predicted to be lower than the cost and greenhouse gas intensity of some other mining operations in NSW, or at a global scale, that have higher overburden strip ratios than the Mount Pleasant Operation.

***Socio-Economic Analysis***

Issue

Godolphin Australia raised a concern that the Modification was not accompanied by a contemporary socio-economic analysis.

Response

MACH Energy notes that the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time. The Mount Pleasant Operation is currently being constructed and will be operated in accordance with Development Consent DA 92/97. The proposed Modification is not a greenfields project.

MACH Energy notes that the Environmental Assessment includes consideration of the economic benefits of the incremental production of the Modification. In addition, the DRG has conducted an independent analysis of the potential economic benefits of the Modification as part of its Submission. This submission concludes (DRG, 2017):

> *Export income is vital for the health of both the NSW and Australian economies, export income contributes to the Nation's balance of trade which provides benefits for both the NSW and Australian credit rating. Coal exports are by far the largest value export from NSW, representing around 25% of total NSW exports (both goods and services combined).*
>
> *Over the life of the Project, the value of coal production sold on the export thermal market would be nearly $4 billion in current dollars. The net present value of this revenue stream has been estimated by DRG at approximately $2.6 billion. Capital investment over the life of Mount Pleasant to end 2020 would be of the order of $365 million.*
>
> *The Project would provide continuing employment for the 380 employees that will be employed at Mount Pleasant. The Modification does not provide any additional full time employment, but does provide an additional six years of employment at Mount Pleasant.*

***Social Impacts***

Issue

The Hunter Communities Network raised a concern that the loss of private property in the Muswellbrook area has had a social impact that has not been recognised or assessed.

Response

MACH Energy acquired the Mount Pleasant Operation from Coal & Allied in August 2016 and commenced construction of the mine approximately four months later in November 2016. The Mount Pleasant Operation is being developed in accordance with Development Consent DA 92/97.

MACH Energy notes that the Modification would not materially increase the approved air quality or noise impacts of the Mount Pleasant Operation. Notwithstanding, consistent with the requirements of Development Consent DA 92/97 and best management practice, MACH Energy will continue to consider on its merits any approach from proximal private landholders that express an interest to be acquired by the Mount Pleasant Operation.

***Potential Impacts on Businesses Reliant upon Bengalla Mine***

Issue

A concern was raised that businesses that are reliant upon the continued operations at the Bengalla Mine may be affected by the proposed Modification.

Response

Refer to the response to the Bengalla Mine submission in Section 6.3.

### 6.2.10 Rehabilitation and Final Landform

***Final Landform***

Issue

A number of NGO submissions raised a concern that the Environmental Assessment Final Landform (i.e. Figure 32) was an overly ambitious step from the 2025 General Arrangement (i.e. Figure 12) and the additional works and revegetation could not be achieved by 2026.

Response

MACH Energy notes that the naming of Figure 32 “Conceptual Final Landform (2026)” and the associated text in Section 5 of the Environmental Assessment indicates that it shows the final landform *if the Mount Pleasant Operation mining activities were to cease in 2026*. It does not represent a year 2026 snapshot of the Mount Pleasant Operation.

***Mine Voids and Fines Emplacement Area***

Issue

A number of NGO groups raised concerns that the Modification did not address the approved number of final voids at the Mount Pleasant Operation, or minimise the area of the Fines Emplacement Area.

Response

MACH Energy has not sought to modify the Fines Emplacement Area or the number of final voids at the Mount Pleasant Operation, as this is not the subject of the Modification.

Notwithstanding, as stated in the Environmental Assessment, one final void would remain in the South Pit at the cessation of the Modification period (2026), should no further approval to extend the life of the Mount Pleasant Operation be granted in the future.

## 6.3 PART C – RESPONSES TO BENGALLA MINING COMPANY SUBMISSIONS

While the BMC would normally be considered a general NGO for the purposes of this Response to Submissions, its concerns are separately addressed from the remainder of the NGO submissions as it has raised very detailed and specific concerns.

Further, MACH Energy understands that BMC has encouraged and facilitated its employees and contractors to also lodge submissions of objection to the Modification. These objecting submissions from employees and other NGOs are generally consistent with the content of the objections raised by the BMC and therefore are also generally addressed by this sub-section.

MACH Energy notes that the BMC made a submission on the Modification dated 14 July 2017 (approximately 20 pages), and then followed this with a supplementary submission dated 27 July 2017 (approximately 110 pages), and further reiterated its position in a third submission dated 16 August 2017.

MACH Energy is of the opinion that the majority of BMC's concerns were articulated in its submission dated 14 July 2017. The BMC supplementary submission further explored or expanded on the subjects of the 14 July submission and also included some advice from specialist consultants.

MACH Energy understands that the core of BMC's objection to the Modification arises from its concern regarding the location of Mount Pleasant Operation's approved rail and pipeline infrastructure. This approved infrastructure is currently being constructed by MACH Energy in part within Bengalla Mine controlled land and the ultimate extent of the Bengalla Mine open cut.

The construction, operation and ultimate relocation of this infrastructure, is addressed comprehensively by both an existing Condition of Development Consent DA 92/97 (i.e. Condition 37, Schedule 3) and the Master Cooperation Agreement. The Master Cooperation Agreement is a detailed commercial agreement that was originally agreed between BMC and Coal & Allied to address the interactions of the two mining operations. This agreement was subsequently novated from Coal & Allied to MACH Energy in 2016.

While there are a number of concerns raised, MACH Energy believes that all the points of BMC's objection are ultimately related to BMC's effort to transfer an existing commercial risk regarding the timing of the relocation of this infrastructure to MACH Energy, after having gained a very significant financial benefit from those same commercial arrangements.

The following sub-sections address the key points of BMC's objections and a comprehensive tabular response to the BMC's 14 July 2017 submission is provided as Attachment 1.

### 6.3.1 Scope of the Modification

Issue

BMC argues in its submission dated 14 July 2017 that the proposed Modification is outside of the scope and scale of a modification that can be considered under section 75W of the EP&A Act.

Response

MACH Energy disagrees with BMC's stated view that the Modification application is outside the scope of a modification under section 75W of the EP&A Act.

Both the scope related issues raised by BMC and MACH Energy's responses are detailed in Attachment 1.

### 6.3.2 Adequacy of the Environmental Assessment

Issue

BMC argues that the Environmental Assessment of the Modification is inadequate, in part because it does not sufficiently address potential impacts on the Bengalla Mine.

Response

MACH Energy disagrees with BMC's stated view that the Environmental Assessment is inadequate. Both the adequacy related concerns raised by BMC and MACH Energy's responses are detailed in Attachment 1.

### 6.3.3 The Modification Proposes the Use of Land South of Wybong Road

Issue

BMC submits that the approval of the Modification is wholly incompatible with the Bengalla Mine SSD 5170 as MACH Energy proposes to use land south of Wybong Road in the pathway of the Bengalla Mine.

Response

In summary MACH Energy notes:

- The Mount Pleasant Development Consent DA 92/97, which was originally granted by the Minister for Urban Affairs and Planning on 22 December 1999 (and was modified on 19 September 2011 and 29 March 2017), expressly provides for the construction of Mount Pleasant infrastructure in an area south of Wybong Road.
- The Mount Pleasant Consent was granted approximately 15 years before the consent for the continuation of the Bengalla Mine (SSD 5170), which was granted in March 2015. The previous consent for the Bengalla Mine (DA 211/93) was due to expire on 27 June 2017.[2]
- BMC has at all times been aware that the Mount Pleasant Operation's infrastructure would potentially intersect with the operations of the Bengalla Mine in the area south of Wybong Road. The Mount Pleasant Consent was conditioned appropriately to deal with this interaction by the inclusion of Condition 37, Schedule 3. Condition 37 provides as follows:

  *"Prior to carrying out any development on site, the Applicant must enter into an agreement with the Minister for Resources, in consultation with the operators with the Bengalla Mine, so that if in the future the Bengalla mining operation is to extend further to the west, the Applicant must undertake to relocate the Mount Pleasant rail loop or the conveyor/service corridor. Any relocation may require a further approval*"
- In May 2011, BMC entered into a commercial agreement known as the Master Cooperation Agreement with Coal & Allied specifically to manage the interaction of the two mines, including the potential intersection of the two operations in the area south of Wybong Road. Furthermore, BMC reaffirmed its obligations under the Master Cooperation Agreement in 2016 by way of an amendment and supplemental deed. The agreement was novated to MACH Energy in 2016.

[2] https://majorprojects.accelo.com/public/01db14a50a20ce7333cb0e487643e6ee/20140711%20Consolidated%20consent%20Bengalla%20Mod%205.pdf

- BMC and the owners of the Bengalla Mine have received a valuable commercial benefit under the Master Cooperation Agreement in exchange for their agreement to allow MACH Energy to construct its infrastructure in this area, namely the right to construct infrastructure which allows them to divert and discharge water from Dry Creek from a point north of Wybong Road, including a clean water dam known as 'CW1' and a pipeline and pumping water system which have been constructed on MACH Energy's land.
- In return for that valuable consideration, BMC has agreed to a commercial state of affairs with MACH Energy which includes MACH Energy having the right to install its rail and pipeline infrastructure on the land south of Wybong Road, subject to the relocation arrangements provided for in that agreement.

Both the compatibility related issues raised by BMC and MACH Energy's responses are detailed in Attachment 1.

### 6.3.4 Mining SEPP Indicates the Modification is Incompatible with Bengalla Mine

Issue

BMC asserts that the incompatibility of the Modification with the Bengalla Mine is such that the consent authority cannot approve the Modification having regard to the relevant provisions of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries), 2007* (the Mining SEPP).

Response

MACH Energy rejects this assertion. MACH Energy's detailed responses to BMC's specific concerns/comments regarding the Mining SEPP is provided in Attachment 1.

### 6.3.5 Other Points Raised in the Supplementary Submission

***History of the Bengalla Mine***

BMC has provided a table (Table 1) in its supplementary submission of approximately 12 pages length that summarises its view of the history of the Bengalla Mine and suggests that this demonstrates that:

- it was always intended that the Bengalla Mine would mine through the area south of Wybong Road where the Mount Pleasant rail and pipeline infrastructure is currently being constructed; and
- the Mount Pleasant rail and pipeline infrastructure should yield to BMC's westward mining when required.

In summary, MACH Energy is of the contrary view that:

- It was always intended that the Bengalla Mine and the Mount Pleasant Operation would negotiate arrangements to allow the Mount Pleasant Operation to access the Muswellbrook – Ulan rail line.
- The Bengalla Mine and the Mount Pleasant Operation have in fact negotiated these arrangements pursuant to a commercial agreement known as the Master Cooperation Agreement.
- The Master Cooperation Agreement comprehensively deals with the construction of the Mount Pleasant Operation rail infrastructure south of Wybong Road and the relocation of that infrastructure in the event of a potential intersection with the operations of the Bengalla Mine.
- MACH Energy has undertaken to the Minister to comply with its relocation obligations under the Master Cooperation Agreement in satisfaction of Condition 37, Schedule 3 of the Mount Pleasant Operation Development Consent DA 92/97.

A detailed response to BMC's supplementary submission Table 1 is provided in Attachment 3, including a summary of various historical facts that were omitted from BMC's table.

***Reduced Economic Benefits if Bengalla Mine was Interrupted***

BMC has provided in Section 4 of its supplementary submission a case that the Modification would result in reduced economic benefits of the Bengalla Mine, if the Mount Pleasant Operation infrastructure was not removed in sufficient time. The case is also made that the dis-benefits would potentially outweigh the benefits of MACH Energy's proposed Modification.

No response is required to this argument as the existing requirements of the Master Cooperation Agreement between the two parties already fully addresses the interaction (Attachment 1). Further, MACH Energy anticipates that both parties will work together cooperatively to minimise the risk of any potential impost on Bengalla Mine's planned progression.

To this end, as stated in the Environmental Assessment, MACH Energy has commenced the engineering studies for development of a rail out-loading alternative and consultation with BMC and MSC on this subject.

Further, on 20 September 2017 MACH Energy submitted a separate modification application for an alternative Mount Pleasant Operation rail out-loading system.

***The Two Operations Cannot Co-Exist***

In Section 5 of its supplementary submission BMC has made the case that the Bengalla Mine and the Mount Pleasant Operation incorporating the Modification cannot co-exist by way of presenting illustrations showing when the Bengalla Mine may intersect the approved Mount Pleasant Operation rail and pipeline infrastructure.

No response is required to this argument as the existing Master Cooperation Agreement between the two parties already suitably addresses the interaction (refer Attachment 1).

In August 2017, consistent with the Master Cooperation Agreement, Bengalla Mine formally notified MACH Energy of the anticipated need to relocate the relevant infrastructure within a specified timeframe.

MACH Energy anticipates that both parties will now work together cooperatively to implement a Mount Pleasant Operation rail out-loading alternative and removal of the currently approved rail infrastructure within the extent of Bengalla Mine's planned progression.

***Further Concerns Regarding Adequacy – Including Specialist Reviews***

In Section 6 of its supplementary submission, BMC makes further arguments that the Environmental Assessment is not adequate, including providing some specialist advice prepared to support its position.

MACH Energy disagrees with BMC's stated view that the Environmental Assessment is inadequate. BMC's submission core adequacy related concerns and MACH Energy's responses are detailed in Attachment 1.

Responses to additional material concerns raised with respect to Environmental Assessment adequacy in BMC's supplementary submission are provided in turn below.

*Air Quality*

Issue

In a review by Pacific Environment (2017) commissioned by BMC for its supplementary submission, some detailed concerns regarding the adequacy of the Air Quality and Greenhouse Gas Assessment were raised.

Response

Todoroski Air Sciences (2017) has prepared a response to the Pacific Environment (2017) review which is presented as Attachment 4.

In summary, no material assessment issues were raised by Pacific Environment (2017) that require any variation to the Modification Air Quality and Greenhouse Gas Assessment key assessment findings.

*Noise*

In a review by Bridges Acoustics (2017) commissioned by BMC for its supplementary submission, some minor points of clarification were raised with respect to the Noise and Blasting Assessment.

No material assessment issues were raised by Bridges Acoustics (2017) that require any variation to the Modification Noise and Blasting Assessment key assessment findings.

*Groundwater*

In a review by Australasian Groundwater and Environmental Consultants (2017) commissioned by BMC for its supplementary submission, it was identified that the original 1997 groundwater study for the Mount Pleasant mine did not satisfy all contemporary groundwater assessment requirements. No material issues were raised by Australasian Groundwater and Environmental Consultants (2017) review that otherwise require a response by MACH Energy.

MACH Energy notes that a contemporary groundwater model is being developed for the Mount Pleasant Operation consistent with the requirements of an approved Water Management Plan that was prepared in consultation with DPI Water. The contemporary groundwater model will be consistent with the *Australian Groundwater Modelling Guidelines* prepared by the National Water Commission in June 2012 (Barnett *et al*., 2012).

In addition, MACH Energy will hold suitable water access licences to account for groundwater inflows, incidental groundwater take and groundwater pumped for water supply from aquifers regulated by the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009* and *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources 2016.*

*Surface Water*

In a review by WSP Australia (2017) commissioned by BMC for its supplementary submission, some concerns were raised with respect to Mount Pleasant Operation water supply reliability and the methodology for discharge off-site in accordance with the Hunter River Salinity Trading Scheme.

MACH Energy notes that the Site Water Balance Review did not include modelling of any alternative sources of make-up water (e.g. sourcing excess mine water from Dartbrook underground), which may also be potentially available to MACH Energy, should the Modification be approved.

In addition, Condition 25, Schedule 3 of Development Consent DA 92/97 already requires MACH Energy to adjust the scale of mining operations on-site to match its available water supply.

Given the construction of the Mount Pleasant Operation has just commenced, MACH Energy has not yet sought the secondary approvals necessary for the release of potential excess mine water off-site in accordance with the Hunter River Salinity Trading Scheme.

A number of alternative methodologies to release the water offsite are potentially available to MACH Energy, subject to obtaining appropriate environmental approvals, potentially including new water transfer, storage and release facilities constructed by BMC in accordance with the Master Cooperation Agreement between the two parties.

MACH Energy will consult with the EPA and BMC on the selected release scheme prior to applying for the releases to be included in Environment Protection Licence 20850.

No material assessment issues were raised by WSP Australia (2017) that require any variation to the Site Water Balance Review assessment.

## 6.4 PART D – RESPONSES TO PUBLIC SUBMISSIONS

Attachment 5 provides a reconciliation of the submissions received from members of the public and the locality of the submitter.

The comments and issues raised by objecting members of the public are addressed in Table 2.

**Table 2**
**Responses to Public Submissions**

| Issue ID No. | Subject | Issues Raised | Response |
|---|---|---|---|
| 1 | Bengalla Mine Interactions | Concerns regarding the location of the Mount Pleasant Operation approved rail line and potential ramifications on Bengalla mine employees and the community if the Modification was approved. | Mount Pleasant Operation's approved rail and pipeline infrastructure is currently being constructed by MACH Energy in part within Bengalla Mine controlled land and the ultimate extent of the Bengalla Mine open cut.<br>The construction, operation and ultimate relocation of this infrastructure, is addressed comprehensively by both an existing Condition of Development Consent DA 92/97 (i.e. Condition 37, Schedule 3) and the Master Cooperation Agreement.<br>The Master Cooperation Agreement is a detailed commercial agreement that was originally agreed between BMC and Coal & Allied to address the interactions of the two mining operations. This agreement was subsequently novated from Coal & Allied to MACH Energy in 2016.<br>The Master Cooperation Agreement between the Mount Pleasant Operation and the Bengalla Mine already suitably addresses the interaction of the two operations (refer responses in Section 6.3 and Attachment 1). |
| 2 | Health Impacts | Concerns that mining-related air quality, noise and vibration impacts adversely affect the community's health and the Modification would exacerbate this. | The Modification would not materially alter the approved air quality, noise or blasting impacts of the approved Mount Pleasant operation.<br>MACH Energy has assessed the Modification in the context of the existing approved Mount Pleasant Operation Development Consent criteria and relevant aspects of NSW Government policies and guidelines. It is the role of the NSW Government to set compliance limits for individual mining operations. The Mount Pleasant Operation, incorporating the Modification, will be required to comply with the various criteria required by the NSW Government, including both amenity and health based criteria. |
| 3 | Air Quality Impacts | Concerns regarding the guidelines/policies applied to assessment and that dust levels or air pollution is unacceptable and is affecting amenity and/or would worsen with the Modification. | The Mount Pleasant Operation Mine Optimisation Modification Air Quality and Greenhouse Gas Assessment (Todoroski Air Sciences, 2017) has been prepared in accordance with the NSW Government policies and guidelines that apply to the assessment and development of coal mine projects, including the EPA's updated Approved Methods (i.e. including more stringent annual average assessment criteria for $PM_{10}$, gazetted by the NSW Government in January 2017) and the *Voluntary Land Acquisition and Mitigation Policy*.<br>As described in the Environmental Assessment, the Air Quality and Greenhouse Gas Assessment found that the Modification would not increase the air quality emissions of the approved Mount Pleasant Operation.<br>Notwithstanding, the Mount Pleasant Operation, incorporating the Modification, will be required to comply with the various criteria required by the NSW Government, including both amenity and health based criteria. |
| 4 | Air Quality Impacts | Concerns that air quality pollutants from combustion engines and blasting have not been adequately assessed. | Todoroski Air Sciences (2017) assessed both the potential particulate emissions associated with the on-site consumption of diesel at the Mount Pleasant Operation, and also considered the potential particulate and fume emissions associated with blasting.<br>MACH Energy would continue to implement the blast management measures detailed in the Blast Management Plan for the Mount Pleasant Operation incorporating the Modification. |

| Issue ID No. | Subject | Issues Raised | Response |
|---|---|---|---|
| 5 | Air Quality Impacts | Concerns regarding dust particles and heavy metals in water tanks. | MACH Energy considers it highly unlikely that coal mining related particulate dust emissions in the vicinity of Muswellbrook would contribute materially to metals concentrations in rainwater tanks in the region (refer Section 6.2.2.). As described in the Environmental Assessment, the Air Quality and Greenhouse Gas Assessment found that the Modification would not increase the air quality emissions of the approved Mount Pleasant Operation. |
| 6 | Air Quality Impacts | Concerns that the Air Quality Assessment does not consider enough stages of the mine.<br>Concerns the proposed air quality management and mitigation measures are not credible.<br>Concerns the Air Quality Assessment should be peer reviewed. | It is noted that the EPA (2017) in its submission on the Modification stated the following:<br>*A full air quality assessment has been provided to assess the impacts of the proposed modification. This has included explicit inclusion of five nearby mines based on information in the latest development consent for each.*<br>…<br>*The EPA issued EPL 20850 for the mine on 24th November 2016 (before modification 2). Conditions on the EPL include reactive management requiring cessation of dust-generating activities under adverse conditions, being elevated concentrations of $PM_{10}$ and wind blowing from the north-west sector. The proposed modification does not require change to these licence conditions.*<br>Given the duration of the period of the Modification (i.e. from 2018 to 2026) three scenarios is an appropriate number of air quality assessment stages. The statement within the EPA's submission that 'a full assessment has been provided' appears to indicate that the quantitative assessment of three scenarios for the Modification is supported.<br>MACH Energy is of the opinion that the air quality management and mitigation measures are credible, and there is no need for a peer review. Further the EPA (2017) stated the following with respect to the potential for 24-hour $PM_{10}$ and $PM_{2.5}$ exceedances (emphasis added):<br>*Assessment also shows additional days exceeding the 24-hour impact assessment criterion for each of $PM_{2.5}$ and $PM_{10}$ at twelve privately owned receptors. Proper implementation of the reactive management scheme mitigates exceedances of the impact assessment criterion for each 24-hour $PM_{10}$ concentration and 24-hour $PM_{2.5}$ concentration that would otherwise occur.* |
| 7 | Noise and Vibration Impacts | Concerns that noise levels are currently unacceptable, are affecting amenity and would worsen with the Modification.<br>Concerns regarding existing low frequency noise and sleep disturbance and this would worsen with the Modification.<br>Concerns that the Modification would result in exceedances of noise criteria.<br>Concerns regarding potential blasting/vibration impacts associated with the Modification. | The predictive noise modelling for the Modification (Wilkinson Murray, 2017) identified that with the implementation of reasonable and feasible mitigation measures, the Modification would not materially change the approved noise envelope of the Mount Pleasant Operation.<br>MACH Energy would continue to implement the noise mitigation and management measures, and predictive and real-time noise management system and associated response protocols, detailed in the Noise Management Plan for the Mount Pleasant Operation. The Noise Management Plan would be reviewed and, if required, revised to reflect any changes to Development Consent DA 92/97 that arise from the Modification.<br>Similarly, no exceedances of vibration and airblast criteria are predicted to occur at any privately-owned receiver, with the implementation of reduced blast maximum instantaneous charge (where required due to proximity) to maintain compliance at the nearest receivers (Wilkinson Murray, 2017). MACH Energy would continue to implement the blast management measures detailed in the Blast Management Plan for the Mount Pleasant Operation incorporating the Modification. |

| Issue ID No. | Subject | Issues Raised | Response |
|---|---|---|---|
| 8 | Economic Justification | Concerns regarding the economic justification of the Modification and potential economic impacts associated with the Modification, including concerns that:<br>• The economic benefits and employment associated with the Modification do not justify the potential environmental impacts.<br>• The coal industry is in decline and is unsustainable in the current and future economic climate.<br>• There are already too many operational or approved coal mines in the region.<br>• The Modification does not provide sufficient economic benefits to the NSW Government and local community.<br>• The Modification would result in reduced regional economic diversity.<br>• The economic benefits do not account for health costs resulting from the Modification. | Demand for coal is expected to increase in Asia and it is projected to account for 80% of the global coal demand by 2040 (International Energy Agency, 2015). Australia is geographically well placed to supply this projected increasing demand for thermal coal. Given ongoing demand for NSW thermal coal in the foreseeable future, MACH Energy does not anticipate that the opening of the Mount Pleasant Operation would result in the closure of another mining operation in NSW.<br>It is however noted that the Mount Pleasant Operation is a relatively low strip ratio open cut mine. Hence the cost of mining and associated greenhouse gas emissions intensity is predicted to be lower than the cost and greenhouse gas intensity of some other mining operations in NSW (or at a global scale) that have higher overburden strip ratios than the Mount Pleasant Operation.<br>MACH Energy's response to concerns regarding potential impacts on health is provided in Sections 6.1.1 and 6.2.9.<br>In addition, MACH Energy notes that the DRG has conducted an independent analysis of the potential economic benefits of the Modification as part of its Submission (DRG, 2017). |
| 9 | Economic Justification | Concerns regarding loss of royalties from Bengalla operations potentially ceasing due to the Modification. | As described in Section 6.3, MACH Energy has a Master Cooperation Agreement with the Bengalla Mine that addresses the interactions between the two mining operations. If the two mines act cooperatively in accordance with the Master Cooperation Agreement, MACH Energy does not anticipate that the Mount Pleasant Operation will have any impact on the royalty stream to the NSW Government from the Bengalla Mine. |
| 10 | Economic Justification | Concerns that the equine or tourism industry would be adversely affected if the Modification is approved, resulting in negative economic impacts. | MACH Energy notes that the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time. The Mount Pleasant Operation is current being constructed and will be operated in accordance with Development Consent DA 92/97.<br>MACH Energy also notes that the Mount Pleasant Operation is located in a well established mining precinct between the Bengalla Mine and the Dartbrook Mine. |

| Issue ID No. | Subject | Issues Raised | Response |
|---|---|---|---|
| 11 | Greenhouse Gas and Climate Change | Concerns that greenhouse gas emissions associated with the Modification are not consistent with Australian Government commitments, and global efforts to reduce greenhouse gas emissions.<br><br>Concerns that Scope 3 emissions are not suitably considered in the Greenhouse Gas Assessment. | Greenhouse gas emissions associated with the Modification have been assessed by Todoroski Air Sciences (2017) in the *Mount Pleasant Operation Mine Optimisation Modification Air Quality and Greenhouse Gas Assessment*.<br><br>Annual average Scope 1 and 2 emissions for the Mount Pleasant Operation are estimated to be approximately 0.22 Mtpa $CO_2$-e, which is approximately 0.04% of Australia's estimated annual greenhouse for the 2014 period.<br><br>The Federal Government of Australia has adopted a greenhouse gas emission reduction target to reduce emissions to 26–28% on 2005 levels by 2030 which represents a 50–52% reduction in emissions per capita and a 64–65% reduction in the emissions intensity of the economy between 2005 and 2030 under the United Nations Framework Convention on Climate Change at the 21st Conference of the Parties in Paris in 2015 (Commonwealth of Australia, 2015) (Section 6.2.9).<br><br>It should be noted that Scope 3 emissions are optional for reporting, as the emissions would be reported by another organisation as Scope 1 emissions. As potential Scope 3 emissions are not controlled by or attributable to MACH Energy, there is inherent uncertainty associated with quantifying the emissions. Notwithstanding, potential Scope 3 emission estimates for the ultimate consumption of the product coal have been estimated based on generic factors.<br><br>Greenhouse gas emissions from the Mount Pleasant Operation would continue to be monitored and where relevant reported annually in accordance with MACH Energy's obligations under the National Greenhouse and Energy Reporting System. |
| 12 | Cumulative Impacts | Concerns that the potential cumulative impacts of the Modification and other mines have not been sufficiently considered (including noise, air quality and visual impacts).<br><br>Concerns that changes in the regional landscape (including the development and expansion of several mines) since the original EIS has not been adequately considered. | MACH Energy notes that the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time.<br><br>It is conventional environmental assessment practice to undertake cumulative assessment based on the proposal at hand, in combination with other approved projects that may be of environmental relevance.<br><br>The development or expansion of local mining operations since the original approval was granted in 1999 were considered and cumulatively assessed where relevant in the air quality, noise and road traffic assessments that were conducted for the Modification. |
| 13 | Age of Development Consent | Concerns that a new comprehensive environmental impact assessment is required for the Mount Pleasant Operation to reflect the status of nearby mines, current environmental standards, government policies and community expectations.<br><br>Concerns that there have been significant changes to the existing environment since the mine's approval. | MACH Energy acquired the Mount Pleasant Operation from Coal & Allied in August 2016 and commenced construction of the mine approximately four months later in November 2016. The Mount Pleasant Operation is being developed in accordance with Development Consent DA 92/97.<br><br>MACH Energy notes that the development or expansion of local mining operations since the original approval was granted in 1999 were considered and cumulatively assessed where relevant in the air quality, noise and road traffic assessments that were conducted for the Modification.<br><br>MACH Energy has also commenced development of a new State Significant Development proposal for the Mount Pleasant Operation (Section 6.1.9). |

| Issue ID No. | Subject | Issues Raised | Response |
|---|---|---|---|
| 14 | Impacts on Other Industries | Concerns that mining is not compatible with other land uses in the region, including agriculture, tourism and the equine industry.<br><br>Concerns that employees in a variety of fields are being drawn away from other productive trades/industries by mining.<br><br>Concerns that 'mining exclusion zones' should be instated to protect other industries. | MACH Energy notes that the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time.<br><br>The Mount Pleasant Operation is currently being constructed and will be operated in accordance with Development Consent DA 92/97. The proposed Modification is not a greenfields project and would remain within the mining tenements already held by MACH Energy.<br><br>The Modification would not involve any material change to the operational workforce of the approved Mount Pleasant Operation of up to approximately 380 people. Given the contraction of the Hunter Valley coal industry that has been observed in the last decade and the closure of some nearby operations, it is anticipated that the Mount Pleasant Operation will provide important employment and business opportunities for the industry.<br><br>These employment and business opportunities in the Muswellbrook Local Government Area and the wider Hunter Valley region would be extended by approximately six years, should the Modification be approved.<br><br>MACH Energy also notes that members of the community have highlighted the importance of mining employment to supplement family run agricultural enterprises, and the associated economic and social benefits to the region.<br><br>The issue of potential mining exclusion zones is a matter for consideration by the NSW Government. MACH Energy will continue to assess its proposals consistent with the policies and assessment requirements of the NSW Government that apply at the time. |
| 15 | Environmental Impacts | Concerns that the Modification would result in (unspecified) environmental impacts. | The Modification does not propose any increase to the approved rates of coal and waste rock production or alteration to the extent of the approved open cut pits.<br><br>In order to assess the potential environmental impacts of the proposed Modification a number of environmental reviews were completed. The environmental reviews indicate that the Mount Pleasant Operation environmental management and monitoring measures being applied by MACH Energy could continue to be applied to minimise the potential impacts on existing environmental values and the nearest private dwellings.<br><br>The Modification therefore would not significantly increase potential environmental impacts in comparison to the approved Mount Pleasant Operation. |

| Issue ID No. | Subject | Issues Raised | Response |
|---|---|---|---|
| 16 | Water | Concerns regarding potential impacts of mining and/or the Modification on water resources, including the Hunter River. | The Environmental Assessment considered the potential impacts of the Modification on water resources and concluded that the Modification would not result in a material change to the groundwater and surface water impacts of the approved Mount Pleasant Operation, given the Modification would not:<br>• significantly alter the approved general arrangement of the Mount Pleasant Operation;<br>• significantly increase the development area of the mine;<br>• increase the approved annual maximum ROM coal and waste rock production rates; or<br>• include any significant changes to the approved water management system at the site.<br>The Modification would result in some minor changes to catchment excision associated with the Mount Pleasant Operation as a result of the emplacement extension. HEC (2017) reviewed the potential impact of the catchment excision and concluded that it would not result in an increase to the total maximum excised catchment associated with the Mount Pleasant Operation (at any one time), due to the delay to the commencement of the approved North Pit. Therefore, any potential incremental impacts from the Modification on the Hunter River catchment would be negligible (HEC, 2017).<br>HEC (2017) also undertook contemporary site water balance modelling, including an assessment of potential water take and discharges to the Hunter River. The outcomes of the contemporary modelling undertaken by HEC (2017) are not materially different to the outcomes of the water management system modelling presented in the 1997 EIS (ERM Mitchell McCotter, 1997).<br>The construction and operation of the Mount Pleasant Operation will be undertaken in accordance with an approved Water Management Plan. |
| 17 | Water | Concerns that a chemical analysis of proposed mine affected water discharge has not been provided in the proposal. | The Modification would not include any significant changes to the approved water management system at the site. In particular, no material changes to Hunter River discharges are proposed as part of the Modification. Notwithstanding, MACH Energy notes that any discharges to the Hunter River would be undertaken in accordance with:<br>• the Hunter River Salinity Trading Scheme; and<br>• an Environment Protection Licence issued under the *Protection of the Environment Operations Act, 1997*. |

| Issue ID No. | Subject | Issues Raised | Response |
|---|---|---|---|
| 18 | Land-use | Concerns that the Modification would have impacts on the agricultural production of land.<br><br>Concerns that the Modification would have adverse impacts on productive land used for agriculture and equine and cattle industries.<br><br>Concerns regarding adverse impacts to Biophysical Strategic Agricultural Land. | Land use in the immediate vicinity of the Mount Pleasant Operation primarily comprises a combination of approved mining activities, mining related infrastructure, public roads, remnant vegetation, cleared grazing land and areas of cropping land on the alluvial landforms adjacent to the Hunter River.<br><br>The proposed Modification would not materially change impacts on surrounding land uses from the Mount Pleasant Operation as originally approved, as it is largely limited to an extension to the approved duration of mining to reflect the delay in commencement of the approved mining operations and some incremental amendments to the approved mine layout.<br><br>As part of the Strategic Regional Land Use Policy, the NSW Government introduced a Gateway Process for the upfront assessment of the impacts of State Significant mining and coal seam gas proposals on Strategic Agricultural Land (NSW Government, 2012). The Strategic Regional Land Use Policy and the Gateway Process only applies to new State Significant Development applications or modifications for mining projects located outside of existing Mining Lease areas (NSW Government, 2012). The Modification is wholly contained within MACH Energy's existing mining tenements and therefore the Gateway Process does not apply to the assessment of the Modification. |
| 19 | Rehabilitation | Concern about how the NSW Government ensures that restoration of the land occurs and that rehabilitation funds are currently inadequate and government may be ultimately responsible for funding rehabilitation of the Mount Pleasant Operation site.<br><br>Concerns that rehabilitation will not be able to return land affected by the Modification to its original quality. | MACH Energy has lodged a rehabilitation security deposit for the Mount Pleasant Operation with the NSW Government in accordance with the requirements of the Mining Act.<br><br>The rehabilitation security deposit is based on a rehabilitation cost estimate prepared in accordance with the Rehabilitation cost estimate guidelines (NSW Department of Planning and Environment, 2017) for the current MOP period.<br><br>MACH Energy would continue to maintain a rehabilitation security deposit for the Project with the NSW Government. |
| 20 | Rehabilitation | Concerns regarding the mixing of water from different geological formations in backfilled mining voids. | The Modification would not change the extent of the approved open cuts.<br><br>A summary of the existing groundwater environment is provided in the Water Management Study undertaken for the 1997 EIS (PPK Environment & Infrastructure, 1997). Consistent with the relevant water sharing plans under the *Water Management Act, 2000*, the two key groundwater systems identified are the (PPK Environment & Infrastructure, 1997):<br><br>• Alluvial groundwater system – associated with the alluvial plains of the Hunter River and its tributaries.<br><br>• Hard (fractured and porous) rock groundwater system – including the Permian aged Wittingham Coal measures.<br><br>The Mount Pleasant Operation incorporating the Modification would not involve any direct physical interference on the alluvial groundwater system.<br><br>The Mount Pleasant Operation coal resource is located in the Permian Wittingham Coal measures of the Singleton Supergroup. Lithologies comprise mostly sandstones, siltstones and coal measures with minor conglomerates and tuffs. This hard rock groundwater system is considered 'less productive' under the NSW Aquifer Interference Policy due to a combination of poor water quality and low yield. |

| Issue ID No. | Subject | Issues Raised | Response |
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| 21 | Visual Amenity | Concerns that the Modification would affect visual amenity of the local area, including cumulative topographic impacts and night-lighting. | The emplacement extension and other proposed changes to the final landform would alter the views of the Mount Pleasant Operation, particularly when viewed from Muswellbrook and other local vantage points. The modified landform is intended to improve the overall appearance of the Mount Pleasant Operation landform.<br><br>The modified eastern face of the 2026 final landform would include a number of spurs and valleys. The high points on the 2026 final landform have been designed to align with these spurs to further improve the more natural appearance of the landform from viewpoints to the north-east and south-east, where views of the mine landform are most prominent during the life of the Modification.<br><br>MACH Energy would prioritise construction of the lower batters of the waste emplacement to the final landform profile, and the early revegetation of these batters to progressively minimise visual impacts in Muswellbrook and other locations to the east. Consistent with MSC's recommendations for the Bengalla Mine final landform, the eastern face of the Mount Pleasant Operation 2026 final landform would be revegetated with native tree species. Further discussion is provided in Section 6.2.8.<br><br>Consistent with the noise condition recommended by MSC, MACH Energy would limit works on the Eastern Out of Pit Emplacement outer batters to daylight hours. This would have the added benefit of reducing potential night-lighting impacts on Muswellbrook and other receivers to the east.<br><br>MACH Energy therefore submits that the Modification would result in an overall material improvement to both the final landform and the visual impacts of the approved Mount Pleasant Operation.<br><br>MACH Energy notes that the MSC (2017) stated the following in its submission:<br><br>*In previous discussions with MACH Energy prior to this submission, Council raised its concerns regarding the incorporation of macro and micro-relief into the landform, particularly with respect to the Eastern Out of Pit Emplacement, and void design. MACH Energy responded with a significantly improved design over the dated design principles included in the original 1997 EIS. Council considers these improved design principles need to be included as a component of the revised Consent to provide clarity to the community and with adequate detail, should assessment against compliance be needed in the future. …* |

| Issue ID No. | Subject | Issues Raised | Response |
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| 22 | Socio-economics | Concerns regarding potential negative socio-economic impacts associated with the Modification.<br><br>Concerns regarding delay and uncertainty around the mine's commencement and end date and the resulting effect on communities and businesses.<br><br>Concerns that the Modification would result in decreased property values or loss of productive properties. | MACH Energy notes that the Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time.<br><br>MACH Energy acquired the Mount Pleasant Operation from Coal & Allied in August 2016 and commenced construction of the mine approximately four months later in November 2016. This acquisition included the majority of the freehold land located within the Mount Pleasant mining tenements. In mid-2017, MACH Energy subsequently acquired a number of further land parcels located to the north of Wybong Road from Bengalla Mine.<br><br>MACH Energy notes that the air quality and noise assessments conducted for the Environmental Assessment concluded that the approved impacts of the Mount Pleasant Operation would effectively be unchanged by the Modification. Notwithstanding, the Mount Pleasant Operation will be operated in a manner as to minimise potential impacts on the environment and land uses on adjoining lands (as described in Section 4 and 5 of the Environmental Assessment).<br><br>MACH Energy notes that the DRG has conducted an independent analysis of the potential economic benefits of the Modification as part of its Submission (DRG, 2017). The ultimate weighing up of the potential impacts and benefits of the Modification lies with the determining authority (i.e. NSW Minister for Planning, or delegate such as the Planning Assessment Commission). |
| 23 | Silicosis | Concern that the Modification would result in instances of Silicosis. | MACH Energy understands that silicosis is a known occupational health and safety management issue for highly exposed employees in industries that involve the production of very fine silica dust particles. This is typically associated with the cutting of silica rich natural or artificial stone materials using high speed cutting equipment.<br><br>While silicosis was also historically associated with the mining and extractive industries, this has been addressed by significant improvements in the implementation of occupational health and safety measures in recent decades (e.g. the use of personal protective equipment and improvements to underground mine ventilation systems).<br><br>The Mount Pleasant Operation is an open cut operation and MACH Energy will comply with applicable occupational health and safety guidelines for the management of dust. |
| 24 | Bengalla | Concern was raised of the reputational damage to BMC should the production and quality of coal be disrupted by the Mount Pleasant Operation due to the Modification. | MACH Energy and Bengalla Mine have already established detailed commercial arrangements to manage the interaction of the two operations, including the relocation of the approved Mount Pleasant Operation rail spur. This interaction is also already addressed by Condition 37, Schedule 3 of Development Consent DA 92/97.<br><br>Further discussion of the Bengalla Mine's submission on the Modification is provided in Section 6.3. |

| Issue ID No. | Subject | Issues Raised | Response |
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| 25 | Soils | Concern was raised over the potential impacts to soils. | The Mining Operations Plan includes measures to manage the potential impacts of the approved Mount Pleasant Operation on soil resources. These measures include:<br>• Undertaking topsoil stripping activities in accordance with the approved Erosion and Sediment Control Plan, to minimise erosion potential.<br>• Stripping and salvaging topsoil to maximise its value for re-use in rehabilitation and will be guided by soil mapping and the suitable soil stripping depths.<br>• Where practicable, stripping soil when it is moist (but not saturated).<br>• Where practicable, transporting topsoil directly to rehabilitation areas. Where this is not possible, establishing topsoil stockpiles separate from subsoil. These stockpiles will be placed away from active transport corridors.<br>• Managing topsoil stockpiles to maintain seed reserves and microbial soil associations. |
| 26 | Critical Industry Clusters | Concerns regarding impacts to the Equine Critical Industry Cluster. | MACH Energy understands that the approved Mount Pleasant Operation was considered when the NSW Government drew up boundaries of critical industry clusters in the vicinity of Muswellbrook.<br>The Mount Pleasant Operation was approved in 1999, and therefore has been part of the approved cumulative impacts of industry in the Hunter Valley since that time. The Mount Pleasant Operation is current being constructed and will be operated in accordance with Development Consent DA 92/97. The proposed Modification is not a greenfields project. |
| 27 | Ecological Impacts | Concerns that the Modification would result in ecological impacts, including impacts on existing stands of native vegetation. | It is noted that the OEH has regulatory oversight with respect to potential impacts on biodiversity and stated the following with respect to the proposed Modification (Section 6.1.5):<br>*OEH reviewed the EA for impacts to … threatened biodiversity.*<br>….<br>*In relation to threatened biodiversity, the proposed land swap offers a larger area with greater biodiversity values for the new area to be developed. Therefore, OEH has no concerns with the proposal.*<br>MACH Energy would continue to manage biodiversity at the Mount Pleasant Operation in accordance with existing procedures.<br>In addition, while not required for the Development Consent DA 92/97, MACH Energy holds and manages a 13,522 ha biodiversity offset that was established as part of the Mount Pleasant Operation approval under the EPBC Act in 2011 (Coal & Allied, 2015 – *Offset Management Plan Mount Pleasant Project*). |

| Issue ID No. | Subject | Issues Raised | Response |
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| 28 | Progressive Rehabilitation | Request that progressive rehabilitation and screening should be undertaken. | The progressive rehabilitation of the Mount Pleasant Operation final landform is discussed in Section 5.1.4 of the Environmental Assessment, which states:<br>*MACH Energy would prioritise construction of the lower batters of the waste emplacement to final landform profile and the early revegetation of these batters to progressively minimise visual impacts in Muswellbrook and other locations to the east.*<br>*To facilitate the more rapid establishment of these final landform profiles, MACH Energy would construct the outer batters of the eastern face of the waste emplacement in 10 m lifts that also facilitate the construction of more variable compound slopes.*<br>*Consistent with MSC's recommendations for the Bengalla Mine final landform, the eastern face of the Mount Pleasant Operation final landform would be revegetated with native tree species. This would allow the landform to assimilate with the open woodland communities within the surrounding environment over time and also be consistent with the revegetation of the eastern face of the Bengalla Mine landform.*<br>MACH Energy would continue to operate in accordance with an approved Landscape Management Plan, including the implementation of the approved visual bunds/tree screens. |
| 29 | Bengalla | Concern was raised that the Modification should not be allowed to proceed until the Mt Pleasant and Bengalla mines have resolved any incompatibilities. | Refer to the responses to BMC (Section 6.3) and issues 1 and 19 above. |
| 30 | Blasting | Concern was raised regarding blast plumes containing nitrogen dioxide ($NO_2$) and the associated health risks to residential areas. | Todoroski Air Sciences (2017) assessed the potential particulate and fume emissions of the Mount Pleasant Operation associated with blasting.<br>MACH Energy would continue to implement the blast management measures detailed in the approved Blast Management Plan for the Mount Pleasant Operation incorporating the Modification. |
| 31 | Proximity | Concern was raised regarding the proximity of the Modification to Muswellbrook, Aberdeen, Scone and other rural residences. | MACH Energy notes that the construction and operation of the Mount Pleasant Operation is already approved, and has been since 1999.<br>The proposed Modification involves an extension to the Mount Pleasant Operation operational life, however with this extension, the duration of mining would be less than the 21 years of operational activity that was approved in 1999.<br>Concerns regarding potential impacts to Muswellbrook, Aberdeen and Scone are addressed in response to the specific issues raised above. |

| Issue ID No. | Subject | Issues Raised | Response |
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| 32 | Mine Life | Concern was raised that justification for the mine life extension is inadequate or is a precursor to additional mine life extensions in the future. | The proposed Modification involves an extension to the Mount Pleasant Operation operational life, however, with this extension, the duration of mining would be less than the 21 years of operational activity that was approved in 1999.<br><br>During consultation, MSC has requested that MACH Energy put forward a new State Significant Development application within the next two years to set out its proposal for the life of the Mount Pleasant Operation, and provide associated environmental assessment and management measures (refer Section 6.1.9).<br><br>Given that satisfaction of the MSC's request will require MACH Energy to complete significant mine planning and environmental assessment works over an extended period, and the NSW major project assessment process can at times extend over many years, the Modification period has been selected to provide investment certainty (amongst other reasons) while this process is undertaken. |
| 33 | Proximity | Concern was raised regarding the proximity of the waste emplacement extension to the nearest residences on Collins Lane, including potential shadowing effects. | MACH Energy notes that the nearest private residences to the emplacement extension are located at Collins Lane, which runs approximately east west off Kayuga Road (refer Figure A2-3 in Attachment 2 of the Environmental Assessment) and on Kayuga Road. The nearest private residence to the emplacement extension (121) is approximately 290 m from the toe of the proposed emplacement extension.<br><br>To maximise the topographic shielding of the evening and night-time mining operations, daytime only construction of the outer parts of the Eastern Out of Pit Emplacement would be prioritised to advance ahead of the open cut development (refer Figures 10-12 of the Environmental Assessment).<br><br>While the emplacement extension would increase the proximity of the waste emplacement landform to residences on Kayuga Road and Collins Lane, it should be noted that the outer slope of the extension would be built at stable slopes (i.e. the ultimate ridgeline associated with the emplacement would be located hundreds of metres further west of the toe) and therefore overshadowing effects in the afternoon are not anticipated to be material.<br><br>By 2021 (Figure 11 of the Environmental Assessment) the lower Eastern Emplacement in the vicinity of Collins Lane would be initially rehabilitated, and visual and proximity related impacts at residences in Collins Lane and Kayuga Road would therefore be progressively reducing. These impacts would then further reduce over time as revegetation matures, and the active emplacement areas advances westwards. The Modification landform improvements would reduce the visual impacts at these nearby receivers following rehabilitation by improving visual integration of the final landform with surrounding landscape topography and vegetation patterns and textures.<br><br>All private residences in Collins Lane are afforded acquisition upon request rights under the existing Development Consent DA 92/97 (i.e. due to previously predicted exceedances of applicable noise criteria due to the close proximity of these residences). Notwithstanding, MACH Energy recognises that sale of individual properties may not be an agreeable outcome for all private landowners in Collins Lane. MACH Energy would continue to consult with the owners of private land remaining in Collins Lane over the life of the operation to minimise environmental impacts where practical, with a particular focus on the initial period of mining operations. |
| 34 | Road Closures | Concern was raised over potential road closures that may occur due to the Modification. | No road closures are proposed as part of the Modification beyond those already approved as part of the existing Mount Pleasant Operation. |

| Issue ID No. | Subject | Issues Raised | Response |
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| 35 | Heritage | Concerns were raised over the potential impacts to Aboriginal and European cultural heritage due to the Modification. | Previous Mount Pleasant Operation heritage assessments have identified a number of Aboriginal heritage sites within the proposed emplacement extension that are within the extent of an existing Aboriginal Heritage Impact Permit #C0002053. Three historic heritage sites of some local heritage significance have been identified in the vicinity of the emplacement extension - two of these would already be disturbed by the approved Mount Pleasant Operation and the third would not be disturbed by the Modification.<br><br>Notwithstanding, MACH Energy would continue to apply the Aboriginal heritage management measures consistent with the requirements of Aboriginal Heritage Impact Permit #C0002053 and the relevant approved Aboriginal Heritage Management Plan for the Mount Pleasant Operation (Section 6.2.6). |
| 36 | Property Damage | Concern was raised over potential damage to vehicles, rooftops, pastures and soils due to dust emissions from the Mount Pleasant Operation associated with the emplacement extension. | Todoroski Air Sciences (2017) has assessed the potential dust emissions of the Mount Pleasant Operation and concluded that the Modification would not increase the air quality emissions of the approved Mount Pleasant Operation.<br><br>Notwithstanding, MACH Energy is agreeable to re-providing the notifications to relevant affected landholders required by Condition 1, Schedule 4 of the existing Development Consent DA 92/97. |
| 37 | Notification of Landholders | Concern was raised over the inflexibility of the land acquisition process for landholders within the “acquisition upon request” zone. | MACH Energy is required to comply with the requirements of Conditions 6 and 7 of Schedule 4 of with respect to property acquisitions for relevant landholdings listed in Table 1 (Condition 1, Schedule 3) of Development Consent DA 92/97.<br><br>Notwithstanding, MACH Energy will also continue to consult with the nearest local landholders, and would seek to arrive at a mutually agreeable outcome for acquisition of a property listed in Table 1 (Condition 1, Schedule 3) of Development Consent DA 92/97, if this is requested. |
| 38 | Notification of Landholders | Concern was raised over the notification of the lodgement of the Environmental Assessment by MACH Energy and the public exhibition of the Environmental Assessment. | As described in the Environmental Assessment (Section 1.3) in May 2017 MACH Energy met with a number of the nearest private receivers to inform them of the nature of the proposed Modification, and the upcoming public exhibition of the Environmental Assessment.<br><br>In addition, the exhibition of the Environmental Assessment was publicly advertised by the DP&E. |

# 7 PROJECT EVALUATION

Based on MACH Energy's consideration of the submissions by regulatory agencies, NGOs and members of the public, MACH Energy considers that the justification provided in the Environmental Assessment remains unchanged.

In addition, MACH Energy notes that the DRG has conducted an independent evaluation of the resource/economics of the proposed Modification and this is presented in the Division's submission.

# 8 REFERENCES

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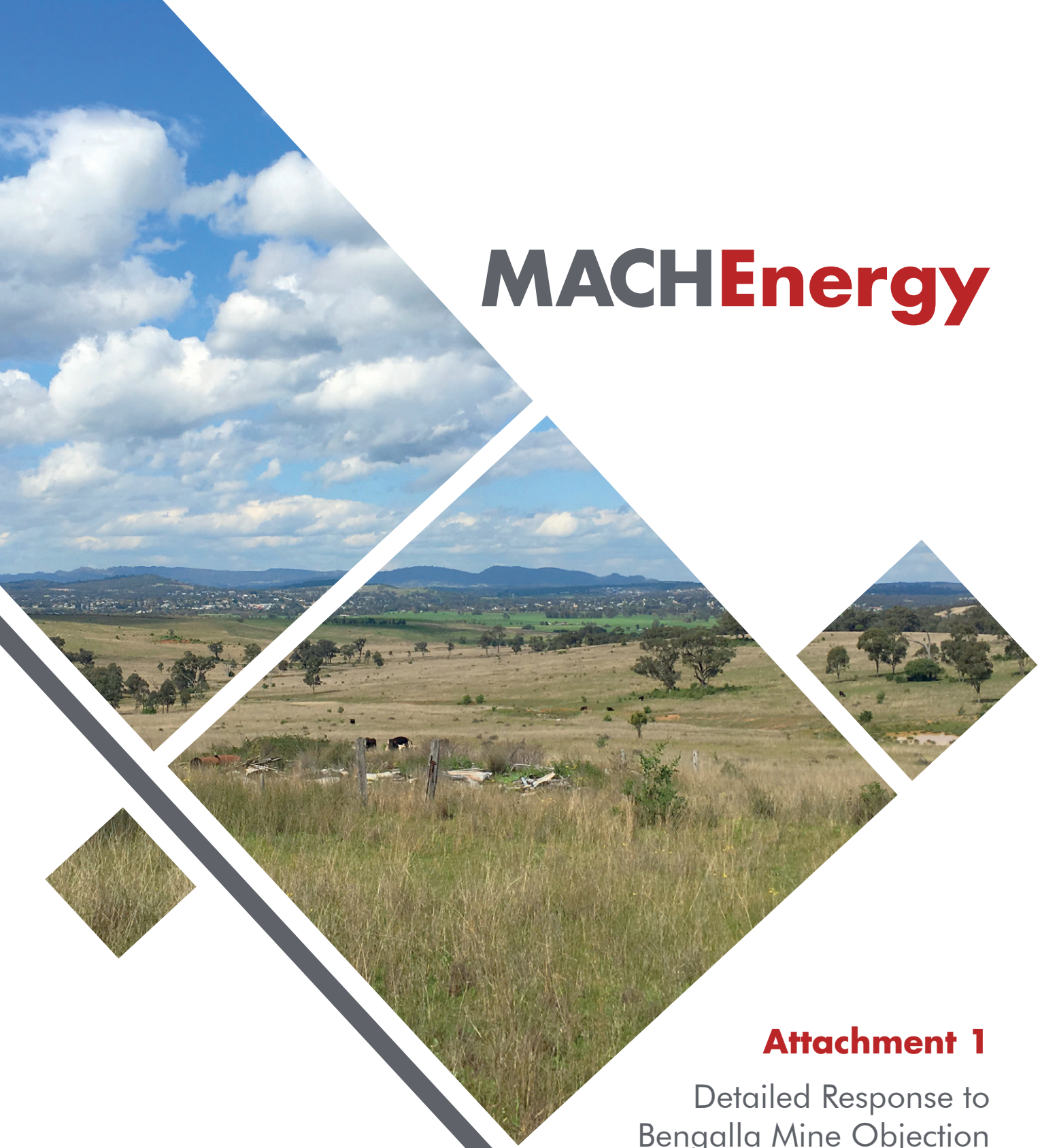

# Attachment 1

## Detailed Response to Bengalla Mine Objection

## Table A1
## Mount Pleasant Coal Project DA 92/97 Modification 3 - Response to Bengalla Mining Company Submission (14 July 2017)

| Bengalla Mining Company Pty Limited Submission | Response |
|---|---|
| ***1 Introduction***<br>*1.1 Bengalla Mining Company Pty Limited (BMC) opposes this application[1] on the bases (sic) that:*<br>*[1] Application which is dated 31 May 2017 and which went on exhibition on 16 June 2017* | Responses to Bengalla Mining Company Pty Ltd (BMC)'s concerns/comments are provided below. |
| *(a) The changes which it proposes and the changed context in which the application is made are so great that what is sought is not a "modification" of the existing development consent DA 92/97 within the meaning of section 75W of the* Environmental Planning and Assessment Act 1979 *NSW (EPA Act) and therefore the application must be refused;* | MACH Energy disagrees with BMC's stated view that the Modification 3 application is outside the scope of a modification under section 75W of the NSW Environmental Planning and Assessment Act, 1979.<br>Further justification is provided in MACH Energy's response to BMC Comment 3 (which provided additional detail pertaining to BMC's stated view). |
| *(b) The Environmental Assessment which accompanies the application (EA) is inadequate and does not assess or address many of the impacts of the proposed development including, in particular, the potential impacts on Bengalla;* | MACH Energy disagrees with BMC's stated view that the Modification 3 Environmental Assessment (EA) is inadequate. Further justification is provided in response to the specific comments made by BMC in the responses below. |
| *(c) The application proposes use of land south of Wybong Road for Mount Pleasant infrastructure in the direct pathway of the already approved Bengalla Mine (SSD 5170). The approval sought is wholly incompatible with SSD 5170 and is reasonably likely to materially interfere with or have a materially adverse impact on SSD 5170, which was granted to BMC in March 2015[2]; and*<br>*[2] As well as BMC's current and future operations as permitted by SSD 5170. In reliance upon that approval, BMC (and its shareholders) have expended significant capital in the continued development and expansion of the Bengalla Mine* | This submission is without substance and amounts to no more than a cynical attempt by BMC to back away from its obligations under a commercial agreement with MACH Energy (having already obtained benefits from MACH Energy under that agreement). The facts are these:<br>1. The Mount Pleasant Consent, which was originally granted by the Minister for Urban Affairs and Planning on 22 December 1999 (and was modified on 19 September 2011 and 29 March 2017), expressly provides for the construction of Mount Pleasant infrastructure in an area South of Wybong Road.<br>2. The Mount Pleasant Consent was granted approximately 15 years before the consent for the continuation of the Bengalla Mine (SSD 5170), which was granted in March 2015. The previous consent for the Bengalla Mine (DA 211/93) was due to expire on 27 June 2017.[3]<br>3. BMC has at all times been aware that the Mount Pleasant mine would potentially intersect with the operations of the Bengalla Mine in the area south of Wybong Road. The Mount Pleasant Consent was conditioned appropriately to deal with this interaction by the inclusion of Condition 37 – formerly Condition 7.1(3) in the consent as originally granted. Condition 37 provides as follows:<br>*"Prior to carrying out any development on site, the Applicant must enter into an* |

[3] https://majorprojects.accelo.com/public/01db14a50a20ce7333cb0e487643e6ee/20140711%20Consolidated%20consent%20Bengalla%20Mod%205.pdf

| Bengalla Mining Company Pty Limited Submission | Response |
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| | *agreement with the Minister for Resources, in consultation with the operators with the Bengalla Mine, so that if in the future the Bengalla mining operation is to extend further to the west, the Applicant must undertake to relocate the Mount Pleasant rail loop or the conveyor/service corridor. Any relocation may require a further approval*"<br><br>4. In 2010, MACH Energy's predecessor (Coal & Allied) sought a modification to the Mount Pleasant Consent which sought, among other things, an extension of the life of the consent by two years. BMC did not oppose that modification application. In February 2011, Coal & Allied advised the Department of Planning (in a publicly available letter) that this aspect of the modification application was withdrawn, but that it was expected that mining at Mount Pleasant would continue beyond 2020 as the site would be the subject of future development applications. Furthermore, in a scheme booklet released to the ASX on 24 October 2011, Coal & Allied released a report which stated that mining was envisaged at Mount Pleasant through to 2040. MACH Energy also notes that at all times prior to February 2016, Coal & Allied's parent company, Rio Tinto Limited, also held a 40% interest in the Bengalla Mine.<br><br>5. In May 2011, BMC entered into a commercial agreement known as the Master Cooperation Agreement with Coal & Allied specifically to manage the interaction of the two mines, including the potential intersection of the two operations in the area south of Wybong Road. Furthermore, BMC reaffirmed its obligations under the Master Cooperation Agreement in 2016 by way of an amendment and supplemental deed. The agreement was novated to MACH Energy in 2016.<br><br>6. That commercial agreement entitles BMC to give MACH Energy a re-location notice no later than 3.5 years prior to the date on which BMC anticipates it will commence activities in the relevant area south of Wybong Road.<br><br>7. BMC expressly acknowledged the existence of the right to build the Mount Pleasant infrastructure in an area south of Wybong Road in the Bengalla Continuation Project Environmental Impact Statement (BMC, September 2013), which was provided in support of the Bengalla SSD Consent application. This document also acknowledged the likelihood that approval would be sought to extend the operations of the Mount Pleasant Mine beyond 2020. In this regard, section 2.4.1 of the Main Report provides (at pages 9 and 11):<br><br>*"The Mount Pleasant Project is wholly owned by Coal & Allied, subsidiary of Rio Tinto Coal Australia (RTCA). It is located to the immediate north of the Project Boundary. The Mount Pleasant Project was granted development consent (DA 92/97) in 1999, which was supported by the Mount Pleasant Mine Environmental Impact Statement (Mount Pleasant EIS) (ERM Mitchell McCotter, 1997). The Mount Pleasant Project has approval for the construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities at a* |

| Bengalla Mining Company Pty Limited Submission | Response |
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| | *production rate of up to 10.5 Mtpa ROM coal.*<br><br>*The Mount Pleasant Project physically commenced in 2004 with the construction of Environment Dam 1 (ED1). No other construction or coal mining has occurred to date.*<br><br>*In 2011, a modification to DA 92/97 was approved, supported by the 'Mount Pleasant Project Modification Environmental Assessment Report' (Mount Pleasant 2010 EA) (EMGA Mitchell McLennan, 2010). This modification allowed the mine infrastructure to be sited within an infrastructure envelope, as opposed to the specific location specified in the Mount Pleasant EIS. The modification also provided for the option of a conveyor / service corridor as an alternative to the approved rail facilities. The conveyor / service corridor passes through the Project Boundary.*<br><br>*In order to address potential cumulative issues associated with the Project and the Mount Pleasant Project, it has been assumed that further approvals will be granted to enable operations to continue beyond 2020. This assumption is intended to represent a potential 'worst case' scenario with consideration of potential cumulative environmental impacts. An assessment of the cumulative air quality, noise and traffic impacts associated with this potential worst case scenario has been applied to this EIS and is discussed in Section 8. Key Project interactions with the Mount Pleasant Project are discussed in detail in Section 4.12."*<br><br>Further, Table 14 on page 65 of this document also included the following assumption:<br><br>*"The Mount Pleasant Project obtains the relevant approval to continue mining in accordance with the above beyond 2020 at the same rate as currently approved"*<br><br>8. The Bengalla Continuation Project Environmental Impact Statement (BMC, September 2013) also acknowledged the existence of the Master Cooperation Agreement in section 2.4.1 of the Main Report which provided:<br><br>*"Coal and Allied and BMC have a protocol in place that will facilitate open cut mining by BMC to the south of Wybong Road within Mount Pleasant Mining Lease 1645. Consultation with Coal & Allied in relation to the Mount Pleasant Project is discussed in Section 6."*<br><br>9. BMC's principal objection to Modification 3 appears to be that the extension of the life of DA 92/97 beyond 2020 would be "fundamentally in conflict" with SSD 5170, apparently on the basis that:<br><br>a. Mount Pleasant's infrastructure south of Wybong Road will impede BMC's mining after 2020, whereas it would not do so before 2020 (see paragraphs 3.7, 3.9); and |

| Bengalla Mining Company Pty Limited Submission | Response |
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| | b. this potential interaction is a "contextual difference" or a "fundamental difference", and that it represents a "radical transformation" of the development (see paragraphs 3.8).<br><br>However, this supposed "contextual difference" is a sham. The interaction between the two mines south of Wybong Road is (and was at all times) addressed by DA 92/97. DA 92/97 recognises that Mount Pleasant's use of land south of Wybong Road will eventually interact with the Bengalla Mine (once BMC's mining operations advanced further to the west). That interaction is addressed in DA 92/97 by reason of Condition 37 of DA 92/97 (which condition has been satisfied). Whether the interaction between Mount Pleasant and Bengalla Mine south of Wybong Road occurs before or after 2020 is arbitrary and irrelevant. Condition 37 will operate in exactly the same way after 2020 as it does before 2020.<br><br>10. BMC's submission rests on the premise that DA 92/97 was intended to expire before BMC would conduct mining on the relevant land south of Wybong Road. However, if that were correct then Condition 37 of DA 92/97 would have no work to do. The existence of Condition 37 demonstrates that BMC's submission is misconceived.[4]<br><br>11. MACH Energy has given an undertaking to the Minister for Resources to comply with its relevant relocation obligations in the Master Cooperation Agreement, in satisfaction of Condition 37.<br><br>12. BMC and the owners of the Bengalla Mine have received a valuable commercial benefit under the Master Cooperation Agreement in exchange for their agreement to allow MACH Energy to construct its infrastructure in this area, namely the right to construct infrastructure which allows them to divert and discharge water from Dry Creek from a point north of Wybong Road, including a clean water dam known as 'CW1' and a pipeline and pumping water system which have been constructed on MACH Energy's land.<br><br>13. In return for that valuable consideration, BMC has agreed to a commercial state of affairs with MACH Energy which includes MACH Energy having the right to install its rail and pipeline infrastructure on the land south of Wybong Road, subject to the relocation arrangements provided for in that agreement. Having granted those rights to MACH Energy, BMC now seeks to upend that commercial state of affairs (and thereby deprive MACH Energy of those rights), having already extracted benefits under that commercial agreement for itself. |

[4] MACH Energy notes that Condition 37 of DA 92/97 is not mentioned anywhere in BMC's submission, and is mentioned only once (in a chronology) in BMC's supplementary submission.

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| | 14. In light of the matters outlined above, there is no basis for BMC's submission that the approval sought by MACH Energy is "*wholly incompatible with SSD 5170*" or that it is "*reasonably likely to materially interfere with or have a material adverse impact on SSD 5170*".<br><br>A redacted version of the Master Cooperation Agreement is provided in Enclosure 1. |
| *(d) The incompatibility of the development as proposed in the modification with the approved and operating Bengalla mine is such that the consent authority cannot approve this application, in particular having regard to the relevant provisions of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 NSW.* | Responses to BMC's specific concerns/comments regarding the Mining SEPP is provided in MACH Energy's response to BMC Comment 5. |
| *1.2 To address incompatibility the application must provide for (at least) the following:*<br><br>*(a) removal of the Mount Pleasant rail spur, rail loop, coal transport and loading infrastructure and Hunter River pipeline and other infrastructure associated with the Mount Pleasant Project located south of Wybong Road (MTP South Infrastructure) and part transfer of Mining Lease 1645 south of Wybong Road to BMC by the date at which BMC requires access to that area of land to facilitate continuation of Bengalla in accordance with SSD 5170 (indicatively December 2021);*<br><br>*(b) access across the rail and coal loading infrastructure to enable BMC to operate Bengalla Mine at all times both sides of the MTP South Infrastructure;*<br><br>*(c) Mount Pleasant infrastructure must be subject to construction standards and operational requirements within the potential blasting impact zone of the Bengalla Mine to ameliorate risks associated with blasting impacts from Bengalla's approved blasting;*<br><br>*(d) measures to ensure the structural and environmental integrity of Bengalla's clean water dam CW1 (900 megalitres) and its associated infrastructure are preserved;*<br><br>*(e) no water discharge from the Mount Pleasant operation into the Bengalla Mine.* | As set out above, there is no basis to assert that the approval sought by MACH Energy is incompatible with SSD 5170. In the circumstances, it is not necessary for MACH Energy's application to address the matters identified in paragraphs (a) to (e). In any event:<br><br>(a) The matters referred to in subparagraphs (a) and (b) are entirely inconsistent with the terms of the Master Corporation Agreement and if imposed on MACH Energy would allow BMC and the owners of the Bengalla Mine to effectively walk away from their obligations under the Master Cooperation Agreement, including the requirements outlined in MACH Energy's response to section 1.1 of BMC's submission above.<br><br>(b) See (a) above.<br><br>(c) As to subparagraph (c), MACH Energy notes that BMC committed to maintaining specific blast standards proximal to Mount Pleasant infrastructure as part of the Bengalla Continuation Project. Additional information is provided in MACH Energy's response to BMC Comment 5.2(h)(v)(C).<br><br>(d) As to subparagraph (d), the interaction between the Mount Pleasant Operation and BMC's CW1 was considered and addressed as part of the Bengalla Continuation Project. Additional information is provided in MACH Energy's response to BMC Comment 5.2(h)(v)(D).<br><br>(e) As to subparagraph (e), MACH Energy does not propose to discharge into the Bengalla Mine. Additional information is provided in MACH Energy's response to BMC Comment 5.2(h)(ii). |

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| *1.3 It is BMC's intention to further supplement this submission with additional information. This will be lodged as soon as the assessment work is complete. BMC was not consulted by MACH before the application was lodged and its assessment work is therefore continuing.* | MACH Energy will respond separately to any supplementary submissions lodged by BMC. BMC's assertion that it was not consulted by MACH Energy before the modification application was lodged is incorrect. MACH Energy regularly consults with BMC as part of the ongoing operation of the adjoining Mount Pleasant Operation and Bengalla Mine. Some examples of consultation undertaken with BMC directly related to the Modification 3 application are provided below.<br><br>MACH Energy letter to BMC (dated 1 November 2016) stated (emphasis added):<br><br>***Modification Application for Development Consent DA 92/97***<br><br>*As previously advised, we are working on a modification application for the Mount Pleasant Development Consent DA 92/97, involving an extension of time (likely to be for a period of 6 or 7 years). We have scheduled the lodgement of that application for April 2017. We will liaise with Bengalla as that date draws nearer.*<br><br>*Prior to the lodgement of the above modification application, we envisage two other modifications: a change to the footprint of the Haul Road (scheduled for lodgement late this year); and a change to the Spoil Footprint (scheduled for lodgement early in 2017). We will liaise with Bengalla as those dates draw nearer.*<br><br>*As well, of course, we envisage a modification application in 2017 relating to the long term infrastructure solution in lieu of the Option D Infrastructure. We will be liaising closely with Bengalla on many aspects of that work.*<br><br>*...*<br><br>At a further meeting held with the Bengalla Joint Venture on 30 November 2016 (and observed by the Chief Executive Officer of BMC), MACH Energy advised:<br><br>• A modification for the change to the spoil position and to allow a better bund design would be lodged in early 2017 due to the need to undertake environmental surveys.<br>• A modification for the extension of the mine life is also likely to be lodged in early 2017.<br>• MACH Energy will be seeking an extension of 6 years to the mine life (to 2026).<br><br>Subsequently at a meeting held with the Bengalla Joint Venture on 19 December 2016 (also observed by the Chief Executive Officer of BMC), MACH Energy advised:<br><br>• A modification for the change to the spoil position and to allow a better bund design would be lodged in early 2017 due to the need to undertake environmental surveys.<br>• A modification for the extension of the mine life is also likely to be lodged in early 2017.<br>• Following lodgement of the above modifications (as well as Modification 2), MACH Energy would prepare and lodge a modification to relocate the coal transport infrastructure (subject to completion of a pre-feasibility study). |

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| | • The coal transport infrastructure modification application and pre-feasibility study would be prepared in consultation with BMC.<br><br>It is relevant to note that the above are only a few examples and don't provide an exhaustive summary of all consultation undertaken with BMC (both formally and informally) regarding the proposed Modifications to the Mount Pleasant Operation. |
| *1.4 BMC requests an opportunity to provide <u>further submissions</u> when responses to submissions have been received from the applicant.* | N/A. |
| ***2 Background***<br>*2.1 BMC operates Bengalla Mine adjacent to the Mount Pleasant Project.* | Noted. |
| *2.2 Bengalla Mine was originally approved under the EPA Act in 1995 and has been in continuous operation since 1998.* | Noted. |
| *2.3 In 2015 the Bengalla Mine was approved (under the State Significant Development provisions of the EPA Act) to continue operations at the rate of up to 15 million tonnes per annum ROM using the existing and recently expanded administration, coal processing and transport and other infrastructure (SSD 5170) for an additional 24 years.* | Noted. This is more than 10 years after approval of the Mount Pleasant Operation (including the approved rail infrastructure) in 1999.<br><br>This application was made in consideration of the arrangements and interactions with the Mount Pleasant mine, including the execution of the Master Cooperation Agreement. |
| *2.4 The continuation of mining by Bengalla westwards was foreshadowed as far back as 1992 when the coal in the Bengalla coal area (the whole area including the first 21 years of mining and the next (SSD 5170) 24 years) was allocated by the New South Wales Government to the Bengalla Joint Venture* | Noted. |
| *2.5 The approved SSD 5170 for Bengalla's mining includes the area of and the coal within the area on which the construction of the MTP South Infrastructure is proposed.* | It should be noted that:<br><br>(a) The Mount Pleasant Development Consent, which was originally granted by the Minister for Urban Affairs and Planning on 22 December 1999 (well before the approval of SSD 5170 for the Bengalla Mine), expressly contemplates the construction of the Mount Pleasant rail infrastructure in this area.<br><br>(b) Bengalla's SSD Consent, which was approved in March 2015, expressly acknowledges this right.<br><br>(c) MACH Energy has already commenced construction of the relevant infrastructure in this area. |
| *2.6 BMC (at the Bengalla Mine) directly employs approximately 600 persons FTE (with a total of4,868 direct and indirect jobs[3] attributable to the Bengalla Mine). Over the 24 year life of the development, as permitted under SSD 5170, it contributes an estimated $2.4 billion[4] to the NSW economy overall and $1.486 billion[5] to the regional economy. Since its commencement of mining, BMC has paid approximately $513 million in royalties to the NSW Government and will, assuming that it is not impeded by the Mount Pleasant Project, pay an estimated additional $1.6 billion in royalties over the next 22 years of its remaining approved* | Noted. |

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| *life*<br>[3] *SSD 5170 EIS (Hansen Bailey 2012) – page 252 Volume 1*<br>[4] *Direct and indirect output or business turnover for the life of the mine as estimated in the SSD 5170 EIS (Hansen Bailey 2012) – page 252 Volume 1*<br>[5] *Direct and indirect output or business turnover for the life of the mine as estimated in the SSD 5170 EIS (Hansen Bailey 2012) – page 252 Volume 1* | |
| *2.7 BMC, and Bengalla Mine, is a well established member of the Muswellbrook community and highly regarded as a safe and secure place of employment. It contributes widely to the local community supporting a large range of charitable and community organisations.* | Noted. |
| *2.8 The detailed history of the Bengalla Mine will be set out in the supplementary submission to be made by BMC. This will demonstrate how Bengalla's mining through the MTP South Infrastructure area has (since 1992 and before Mount Pleasant was assessed and approved in 1995) been proposed. BMC and the owners of Bengalla Mine have designed the mine (as approved) and invested the capital to construct the mine on the basis of the continuation of the development described in SSD 5170 for the next 22 years. This modification threatens that continuity and, for that reason (and other reasons set out in this submission), BMC's position is that it, in its current form, it should be refused.* | MACH Energy will respond separately to this supplementary submission.<br>As outlined above, the Bengalla Continuation Project Environmental Impact Statement (BMC, September 2013) which was provided in support of Bengalla's SSD Consent, application expressly acknowledged that:<br>(a) the Mount Pleasant Consent provides for construction of the Mount Pleasant infrastructure south of Wybong Road;<br>(b) it was anticipated that approval would be sought to extend the operations of the Mount Pleasant Mine beyond 2020; and<br>(c) the Master Cooperation Agreement provides for the management of interactions between the Mount Pleasant Mine and the Bengalla Mine, including the management of potential interactions between the Mount Pleasant infrastructure and the operations of the Bengalla Mine.<br>In the circumstances, any decisions made by BMC and the owners of the Bengalla Mine in respect of the design of the mine and investment in capital to construct the mine on the basis of the continuation of the development described in SSD 5170 would have been made with full knowledge of these facts.<br>Further, for the reasons outlined above, BMC's assertion that the Mount Pleasant Operation threatens the continuity of the Bengalla Mine is expressly denied. |
| *2.9 The modification application does not incorporate the removal of the MTP South Infrastructure or the establishment of any infrastructure alternate to the MTP South Infrastructure in order to make way for the Bengalla Mine's progress in accordance with the approvals held by BMC[6] and it does not provide for any measures to deal with incompatibility and interactions in the intervening period.*<br>[6] *Including SSD 5170 issued by the delegate of the Minister for Planning and Environment* | It is not necessary for the modification application to provide for these matters as the infrastructure is not the subject of MACH Energy's modification application. Furthermore, this interaction between Bengalla Mine and Mount Pleasant is already addressed in the existing Mount Pleasant development consent DA 92/97 (and in particular Condition 37 of DA 92/97), as described above.<br>In any event, the Modification 3 Environmental Assessment (MACH Energy, 2016) (the Mod 3 EA) does acknowledge the potential interaction and explains that an agreement (the Master Cooperation Agreement) is in place to address the interaction. It should be noted |

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| | that the Master Cooperation Agreement:<br><br>(a) entitles the owners of the Bengalla Mine to require MACH Energy to relocate its infrastructure where there is potential for the infrastructure to intersect with the operations of the Bengalla Mine provided certain conditions are met; and<br><br>(b) requires MACH Energy to implement an alternative solution for its rail infrastructure (which is described in the agreement as 'Option C') in this event.<br><br>The Mod 3 EA also outlines the steps that MACH Energy is taking to identify viable alternative rail infrastructure arrangements and gives an indication of the likely timing of a further Modification application to seek NSW Government approval for such a rail infrastructure alternative (Section 2.16.1):<br><br>*The Mount Pleasant Operation has a Master Co-operation Agreement with Bengalla Mine which has been developed to manage interactions between the two mining operations.*<br><br>*It is noted that the ultimate extent of the approved Bengalla Mine open cut intersects the Mount Pleasant Operation rail spur that is currently being constructed by MACH Energy.*<br><br>*While the intersection of the Bengalla Mine open cut with the approved rail spur alignment is some years away, MACH Energy is currently conducting engineering studies on various alternative future rail and/or conveyor product transport options.*<br><br>*The engineering studies will identify alternative potentially viable infrastructure arrangements that would provide product coal transport for the life of the Mount Pleasant Operation that are located outside of the approved Bengalla Mine open cut.*<br><br>*Once a preferred product coal transport option has been identified in consultation with Bengalla Mine, MACH Energy will conduct the necessary environmental assessment and submit a modification application seeking approval for the alternative product coal transport facilities.*<br><br>*MACH Energy anticipates that a modification application would be made within 12 months of a preferred product coal transport alternative being selected and obtaining suitable access to the relevant land that is the subject of the product coal transport modification. …*<br><br>MACH Energy has already obtained a Pre-Feasibility Study into potentially viable alternative rail infrastructure arrangements and has commenced consultation with the owners of the Bengalla Mine about this. |

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| 2.10 *The approval of this modification application is reasonably likely to materially interfere with or have a materially adverse impact on Bengalla Mine. This is because, if:*<br>(a) *the MTP South Infrastructure is not required to be removed at or in the necessary time[7]; and*<br>(b) *appropriate arrangements are not incorporated in the proposal to enable interactions between the two operations in the interim period between when Bengalla's mining intercepts the MTP South Infrastructure area and now;*<br>*BMC will be prevented from continuing with the mining which has been approved. Significant curtailment of Bengalla Mine's approved operations could occur as early as 2021/2022 with greater adverse impacts following shortly thereafter, likely around 2024/2025 (some 17-18 years before the date authorised under SSD 5170). If the MTP Infrastructure is not removed from the pathway of the Bengalla Mine then, in preparation for early cessation of mining, pre-mining activities[8] have to cease, which will result in the prevention of mining well before mining itself intercepts the relevant area of the MTP South Infrastructure.*<br>[7] *Which happens around or shortly after the current DA 92/97 end date with Bengalla Mine progressing in accordance with its development consent SSD 5170*<br>[8] *Including the necessary environmental controls such as water management structures, sedimentation dams and drainage to prevent contaminated water exiting Bengalla Mine into the environment* | It should be noted that BMC acknowledges the Bengalla Mine will be adversely affected **only if** the relevant infrastructure is not required to be removed at the necessary time and appropriate arrangements are not in place to enable interactions between the two operations in the meantime.<br>As set out above, DA 92/97 already addresses this interaction by reason of Condition 37. In satisfaction of that condition, MACH Energy has undertaken to the Minister for Resources to comply with its relevant obligations under a commercial agreement in place between the parties (the Master Cooperation Agreement) which expressly provides for these matters. In the circumstances, there is no basis for BMC's submission that the approval of MACH Energy's modification application is reasonably likely to materially interfere with or have a materially adverse impact on the Bengalla Mine. |
| ***3 The Section 75W Modification Power***<br>3.1 *BMC submits that the proposed changes to the development which is approved by DA92/97 are not of a type or scale which can properly be characterised as a "modification" within the meaning of that term for the purposes of section 75W of the EPA Act. Set out below is a catalogue of these changes and the reasoning underlying the submission.* | MACH Energy disagrees with BMC's assertion that the proposed changes to the Mount Pleasant Operation cannot be characterised as a Modification under section 75W of the EP&A Act.<br>Contrary to the submission made by BMC, Modification 3 is not beyond the scope of s75W of the EP&A Act. DA 92/97, if modified, would continue to approve open cut mining operations within the area of operations already approved, in the same, or essentially the same manner and scale. The proposed changes are easily within the broad scope of section 75W, and therefore the request to modify may be considered under section 75W.<br>The NSW Department of Planning and Environment (**DPE**) was consulted on a number of occasions with regard to MACH Energy's intended Modification application and did not raise any concerns with respect to the scope of the proposed Modification. |
| 3.2 *Page 5 of the* "Mount Pleasant Operation – Mine Optimisation Modification Environmental Assessment" *(EA) says* "The Modification would primarily comprise two components: an extension to the time limit on mining operations to 22 December 2026 …; and extensions to the South Pit Eastern Out of Pit Emplacement…". *However, in other places in the EA there are many other changes described each of which individually propose material changes to what is currently approved at the Mount Pleasant Project.* | MACH Energy notes that Section 1.2 of the Mod 3 EA is titled "Overview of the Modification" and the associated text on Pages 5 and 6 also includes Table 1, which provides a summary of the key elements of the Modification. |

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| *3.3 The modification appears to describe at least 10 material differences[9] between that which is approved by DA 92/97 and what is proposed under the modification including the following material matters:*<br><br>[9] *BMC's supplemental submission will provide additional details on matters of difference – this is the list of major items of difference which we have been able to identify in the time provided* | Refer response to specific concerns/comments raised by BMC below. |
| *(a) North Pit gone*<br><br>*The existing approved mine incorporates mining simultaneously in "North Pit" and "South Pit" to achieve the maximum extraction of 10.5 Mt Run of Mine coal. Figures 8, 9 and 10 (copies attached as Appendix 1) from the original Mount Pleasant Environmental Impact Statement clearly show mining occurring between years 2 and 5 and thereafter within North Pit for what would be a material proportion of the total coal mined during those years. The presence of North Pit in the existing approval is acknowledged by the Director-General's Assessment Report in connection with Modification 1 to DA 92/97, specifically Figure 8 on page 17 of the report (attached to this submission as Appendix 2).*<br><br>*The mining under the proposed modification appears to exclude any mining in North Pit at any time during the development. This is evident from Figure 12 of the EA which is entitled* "Mount Pleasant Operation Provisional General Arrangement 2025" *and Figure 32 entitled "Conceptual Final Landform" on both of which North Pit has abstrusely disappeared.*<br><br>*Whether there would be more or less net environmental impact derived from the difference is not germane to the question of whether the difference is material for the purposes of ascertaining the total extent of change and whether it is within that which section 75W contemplates as a modification. This change alone renders Mount Pleasant as proposed under this modification radically different to what is presently approved.* | Under MACH Energy's planned mining method and mining sequence, the development of the approved North Pit would occur after the Modification period (i.e. after 2026).<br><br>MACH Energy is not aware of any precedent in NSW for a mine to be penalised for containing the extent of its activities in the initial period of mine development to a single pit to better manage environmental impacts, when development of more than one pit was approved. |
| *(b) Mining Sequence"*<br><br>*Paragraph 3.3.2 (page 24) describes a flexible approach to "mining sequence and rate of mining". Exactly what that means is not described and so it must be concluded that complete flexibility in terms of "mine sequencing" and "general arrangement" of the mine is sought. BMC does not believe that the existing Mount Pleasant development consent provides for such flexibility.* | As stated in the Mod 3 EA, the proposed mining method and associated flexibility would assist to manage potential impacts on the nearby private receivers, particularly in the initial period (Section 3.3.2):<br><br>*MACH Energy's planned truck and shovel mining methodology provides potential flexibility to the mining operation to manage noise and air quality emissions which will be a key focus of operations in the first five years.*<br><br>*The sequence of mining and/or the general arrangement may be modified throughout the life of the operation to maintain compliance with the applicable noise and air quality criteria in Development Consent DA 92/97 at the nearest private residences.*<br><br>*Due to the proximity of the operation to private receivers (particularly to the south east), this may necessitate iterative improvements to shutdown planning for adverse weather conditions to maximise mining efficiency while maintaining compliance with air quality* |

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| | *and noise criteria at the Mount Pleasant Operation.*<br><br>*This process will be informed by real-time noise and air quality monitoring and use of predictive models to plan both the short-term and medium-term focus of the approved mining operations, and may necessitate iterative alteration to the mining sequence based on adaptive management.* |
| *(c) Mining fleet*<br><br>*Paragraph 3.3.4 (page 28) describes the omission of a dragline from the proposed mining method and its replacement with "some additional mobile equipment". BMC notes that the revised mining fleet proposed does not include an electric rope shovel. In mining terms, a dragline operation is very different to a purely truck and excavator operation and has very different impacts.* | As noted above, the proposed mining fleet and method and associated flexibility would assist to manage potential impacts on the nearby private receivers, particularly in the initial period.<br><br>As stated in the Mod 3 EA, MACH Energy may still utilise a dragline in the future (Section 3.3.2):<br><br>*It is noted that the approved Mount Pleasant Operation includes the on-site construction and operation of a dragline. This is no longer planned by MACH Energy in the period to 2026, but may occur at some stage in the future.* |
| *(d) Construction Workforce*<br><br>*A change to the construction workforce by an increase from 250 (approved) to 350 (proposed) is proposed in Table 1 on page 7 of the EA. This would be a forty percent (40%) increase to the construction workforce.* | MACH Energy would like to clarify that the Mod 3 EA states the following with respect to the proposed increase in the construction workforce (Section 3.10) (emphasis added):<br><br>*The construction workforce for the Mount Pleasant Operation would also typically remain below approximately 250 people.* ***However, as a result of MACH Energy's expedited construction schedule, the construction workforce is expected to exceed 250 people for approximately 6 months****, with a maximum of approximately 350 people anticipated.*<br><br>MACH Energy conservatively anticipating a short term peak occurring in the construction workforce due to its contemporary scheduling of the approved construction activities is typical of changes that may arise from detailed engineering design.<br><br>It is also noted that the Modification would not alter the approved operational workforce of the Mount Pleasant Operation (i.e. up to a peak of 380 people). |
| *(e) Final land forms*<br><br>*The proposed revisions to the final landform in the modification provide for a final landform after mining which is significantly different to what was proposed and approved in the existing DA 92/97.*<br><br>*Furthermore, if the MTP South Infrastructure is not removed to make way for the approved Bengalla mine at the required time (as this modification proposes), the final landform proposed at Bengalla mine (including the reinstatement of Dry Creek which has been removed and "replaced" with a 900 megalitre capacity dam (CW1) and a system of pipes) may not be achieved either. In BMC's submission, that potential impact on Bengalla's final landform must be considered (unless the application or the approval granted is in such form that the potential impact on Bengalla Mine is prevented).* | The final landform presented Mod 3 EA is a final landform that would occur should no subsequent extension to the mine life occur to facilitate mining of the full approved footprint of the Mount Pleasant Operation (e.g. to 2038) (refer to MACH Energy's response to BMC Comment 4.7).<br><br>Refer to the responses above with respect to management of potential rail infrastructure interactions. |

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| *(f) Reduced economic benefits*<br><br>*The original approved Mount Pleasant mine was to mine a total of 197 million tonnes[10] over the period between December 1999 and December 2020 of Run of Mine coal which would secure for the community (both local and state-wide) all the economic benefits which would flow from a development of this scale. The development as proposed will extract a maximum of just 85.36 Million tonnes of coal[11] (and that is all that would be approved under the development consent as modified if the modification application is approved).*<br><br>*This reduced economic benefit must be considered and quantified in order to enable the consent authority to consider the impacts of the approval of the application so as to accord with the objects of the EPA Act.*<br><br>*The reduction in benefits to the community which flows from the reduced scale of the development has not been assessed in the application. BMC will expand on its position in that regard in its supplemental submission. At this stage, BMC can point out that the reduced benefits to the community are material and render the development as modified very different to what was approved in this regard.*<br><br>[10] *Environmental Assessment for Mount Pleasant Project Modification 1, EMGA Mitchell McLennan 1 October 2010*<br><br>[11] *See page 75 of the EA says that there will be 46 million tonnes of product coal from the project as modified* | While the Mount Pleasant Operation is approved to extract some 197 million tonnes (Mt) of ROM coal, Development Consent DA92/97 also currently limits the duration of mining operations to December 2020.<br><br>Converse to the position arrived at in BMC's submission, it therefore follows that the approval of Modification 3 would facilitate the recovery of a material additional quantity of coal (at rates compliant with the approved annual coal production limit), relative to the current limitation on the duration of mining in the Development Consent.<br><br>It is also noted that Mod 3 EA states (Section 4.10.4):<br><br>*Given the contraction of the Hunter Valley coal industry that has been observed in the last decade and the closure of some nearby operations, it is anticipated that the Mount Pleasant Operation will provide important employment and business opportunities for the industry.*<br><br>*These employment and business opportunities in the Muswellbrook LGA and the wider Hunter Valley region would be extended by approximately six years, should the Modification be approved.*<br><br>*Over the course of the period from December 2020 to December 2026 MACH Energy also estimates that approximately 46 Mt of product coal would be produced by the Mount Pleasant Operation. This incremental production would be valued at over $4.5 Billion based on MACH Energy coal price and exchange rate estimates, and is anticipated to generate significant associated royalties to the State of NSW (i.e. >$350M).*<br><br>It is noted that the Division of Resources and Geoscience (DRG) has conducted its own assessment of the value of coal and royalty generation for consideration by DPE. |

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| *(g) Source water from Bengalla & Dartbrook Mines*<br><br>*On pages 7 and 29 of the EA it is proposed that* "… MACH Energy may also source excess mine water from the adjoining mines (i.e. Dartbrook and Bengalla Mines) for use on-site. … any such water transfers would be via temporary overland pipeline …" *This is an entirely new element of the development.* | The paragraph on Page 29 of the Mod 3 EA is presented in its entirety below (emphasis added to the text not quoted in Bengalla Mine's submission):<br><br>***In addition, in order to reduce make-up water demand from the Hunter River over the life of the Mount Pleasant Operation,*** *MACH Energy may also source excess mine water from the adjoining mines (i.e. Dartbrook and Bengalla Mines) for use on-site.* ***Should this water sharing be undertaken, it would be subject to MACH Energy and the other mining operator obtaining all necessary secondary approvals (e.g. EPL variations). In addition,*** *any such water transfers would be via temporary overland pipeline* ***that would be positioned to avoid any additional native vegetation clearance within the Mount Pleasant Operation Development Consent DA 92/97 boundary (e.g. by use of an existing road).***<br><br>The Muswellbrook Shire Council has advocated that MACH Energy should pursue water sharing with the other local mining operations.<br><br>MACH Energy also understands that the NSW Government actively encourages water sharing between mining operations (or the re-use of waste water from industrial sources), where such water sharing may reduce the make-up water demand from approved external surface water or groundwater sources. |
| *(h) South Pit Eastern Out of Pit Emplacement*<br><br>*The proposed extensions to out of pit emplacement on the eastern side of South Pit are referred to on pages 5, 7, 14 and 24 of volume 1 of the EA. The extent of that "extension" does not appear to be particularised (in terms of height or cubic metres of additional material within the extended emplacement area) other than on page 7 where it is described as having an area of 67 hectares.*<br><br>*It is noted that the material in the additional 67 hectare area was/is (under DA 92/97 as it stands) to be located further away from the town of Muswellbrook. The modification proposes 67 hectares of out of pit emplacement material being located closer to Muswellbrook.* | The emplacement extension would bring the waste emplacement landform closer to proximal receivers in the east, as is clearly articulated in the Mod 3 EA.<br><br>In addition, the assessments conducted for the Mod 3 EA found the following:<br><br>• Air quality modelling indicates that no additional exceedances of applicable Development Consent DA 92/97 air quality criteria are predicted to arise at any privately-owned residences as a result of the Modification.<br>• With the implementation of MACH Energy's noise management measures the noise envelope of the Mount Pleasant Operation incorporating the Modification would also effectively be unchanged from the approved mine.<br>• The proposed modifications to the landform design would improve views of the landform from Muswellbrook and other local vantage points, following rehabilitation. |

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| *(i) Extension of time*<br><br>*The modification application seeks additional time for mining operations (which includes the operation of most elements of what is approved) until December 2026. The material difference in this proposal is that what is really requested is for the relevant activities to take place at different times (or between different dates) as opposed to an "extension of time".*<br><br>*It is the fact that what is proposed will occur on different dates that makes the proposal under the modification so fundamentally different to what is approved now under DA 92/97. The surrounding circumstances on those proposed different dates are so profoundly different to what they were during the period prior to December 2020 that the proposal under the modification is a radical transformation of the whole development.*<br><br>*Plans showing approved mining operations at Bengalla Mine and dates on which these would occur overlaid on Mount Pleasant development will be attached to BMC's further submissions. These plans will clearly show that approving the activities for which consent is sought under this application on the dates on which that consent is sought will potentially conflict with SSD 5170 and with Bengalla Mine's operations as permitted under SSD 5170. This impact is not assessed in the EA and this contextual difference is material to the impact the modification application will potentially have.* | MACH Energy rejects the submission that the "*surrounding circumstances on those proposed different dates are so profoundly different to what they were during the period prior to December 2020 that the proposal under the modification is a radical transformation of the whole development*". BMC has at all times known of the potential interaction between Mount Pleasant and Bengalla Mine in the area south of Wybong Road. That interaction is already addressed in the Mount Pleasant Development Consent, and in particular by Condition 37.[5]<br><br>BMC's submission suggests that DA 92/97 was intended to expire before BMC would conduct mining on the relevant land south of Wybong Road. However, that premise is plainly wrong as in that case Condition 37 would have no work to do. The existence of Condition 37 confirms that BMC's submission is misconceived. As noted above, whether the interaction south of Wybong Road occurs before or after 2020 is arbitrary and irrelevant.<br><br>Further, as set out above, it is clear from the statements made in the Bengalla Continuation Project Environmental Impact Statement (BMC, September 2013) which was provided in support of Bengalla's SSD Consent application that BMC and the owners of the Bengalla Mine were at all material times leading up to the approval of SSD 5170 fully aware that:<br><br>(a) it was likely that the Mount Pleasant infrastructure would be constructed south of Wybong Road;<br><br>(b) it was likely that approval would be sought to extend the operations of the Mount Pleasant Mine beyond 2020; and<br><br>(c) the potential interactions between the Mount Pleasant infrastructure and the operations of the Bengalla Mine would be managed in accordance with the terms of the Master Cooperation Agreement.<br><br>For the reasons outlined above, MACH Energy rejects BMC's assertion that the approval of its modification application will potentially conflict with SSD 5170 and with Bengalla Mine's operations as permitted under SSD 5170. Therefore, it is unnecessary for this to be assessed in the Mod 3 EA. |

[5] Condition 37 (formerly Condition 7.1(3) in the original DA 92/97 consent), which addresses the interaction in the area south of Wybong Road, was included in DA 92/97 following submissions made by BMC to the "Commission of Inquiry for the Proposed Mount Pleasant Open Cut Coal Mine" in June 1998.

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| *(j) Background*<br><br>*The environment in which the proposed development would occur is fundamentally different to that against which the Mount Pleasant Project was originally approved. The following material open cut mining is taking place now in the immediate vicinity of the Mount Pleasant Project (and the town of Muswellbrook) which was not taking place in 1999 which is when DA 92/97 was originally approved:* | It is conventional environmental assessment practice to undertake cumulative assessment based on the proposal at hand, in combination with other approved projects that may be of environmental relevance.<br><br>MACH Energy notes that this approach was reflected in Bengalla Mine's Continuation Project Environmental Impact Statement, which for the purposes of cumulative assessment assumed that Mount Pleasant would be constructed and operate for the originally approved 21 years (refer discussion above).<br><br>In addition, MACH Energy notes that these expanded mining operations were considered and cumulatively assessed where relevant in the air quality, noise and road traffic assessments that were conducted for the Mod 3 EA.<br><br>It is also noted that, where relevant, the Mount Pleasant Development Consent DA 92/97 Conditions were comprehensively updated to reflect contemporary standards and the cumulative assessment environment in the determination of Modification 1 in 2011. |
| • *Mount Arthur Coal now approved to operate to a maximum of 32 million tonnes per annum Run of Mine having a total disturbance area of 6,400 hectares;* | |
| • *Bengalla Mine now approved to operate to a maximum of 15 million tonnes per annum Run of Mine ;* | |
| • *Mangoola Mine now approved to operate to a maximum of 13.5 million tonnes per annum Run of Mine* | |
| *The result is that the background environmental conditions today are significantly different to what they were when DA92/97 was granted in 1999. Again, the context has significantly changed.* | |
| *Existence of Bengalla's Approved Operations and Impacts on Those*<br><br>*3.4 The most profound difference between what is currently approved for Mount Pleasant and what is now sought (by this modification) is the contextual difference arising from potential impacts on approved Bengalla Mine.* | BMC's suggestion that there is a contextual difference between what is currently approved and what is now sought by MACH Energy's modification application in terms of the potential for BMC's mining operations to intersect with MACH Energy's rail and pipeline infrastructure is plainly wrong.<br><br>As outlined above, it is clear from the statements made in the Bengalla Continuation Project Environmental Impact Statement (BMC, September 2013) which was provided in support of Bengalla's SSD Consent application that BMC and the owners of the Bengalla Mine were at all material times leading up to the approval of SSD 5170 fully aware that:<br><br>(a) it was likely that the Mount Pleasant infrastructure would be constructed south of Wybong Road;<br><br>(b) it was likely that approval would be sought to extend the operations of the Mount Pleasant Mine beyond 2020; and<br><br>(c) the potential interactions between the Mount Pleasant infrastructure and the operations of the Bengalla Mine would be managed in accordance with the terms of the Master Cooperation Agreement.<br><br>Further, BMC's assertion that the existence of MACH Energy's rail and pipeline infrastructure "*is reasonably likely to materially interfere with or have a material adverse impact on SSD 5170"* and that approval of MACH Energy's modification application will mean that the Bengalla Mine will not be able to continue mining through the area occupied by MACH Energy's rail and pipeline infrastructure cannot be sustained in light of the |
| *3.5 Open cut mining is, by its nature, temporal and dynamic. Bengalla Mine has[12] (in accordance with its development consent) progressed close to and is approved to progress into the area proposed for the MTP South Infrastructure shortly after 2020 (in the early part of the extension period sought).*<br><br>*[12] As at the date of this submission* | |
| *3.6 The existence of the MTP South Infrastructure in the years after 2020 is reasonably likely to materially interfere with or have a material adverse impact on SSD 5170, and BMC's current and future operations as permitted by SSD 5170, which is a very different impact on Bengalla Mine's operation to that which would have occurred prior to the continuation of the Bengalla Mine being approved under SSD 5170 in March 2015.* | |
| *3.7 In short, the existence and use of the MTP South Infrastructure in the years until 2020 was a development which had little material impact on the Bengalla Mine. In contrast, approving the existence and use of that same infrastructure in the years after 2020 is reasonably likely to materially interfere with or have a materially adverse impact on SSD 5170, and BMC's current and future operations as permitted by SSD 5170, as well as BMC's mining leases and associated approvals (and therefore all who work at Bengalla Mine and otherwise rely on it for their livelihoods).* | |

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| *3.8 This contextual difference renders what is proposed by this modification fundamentally different to what is now approved. This fundamental difference would, in BMC's submission, on its own (disregarding all other differences which would be brought about by approval of the modification sought) represent a radical transformation of the development from one which has no material impact on neighbouring mines to one which would be reasonably likely to materially interfere with or have a materially adverse impact on the adjoining Bengalla Mine (and the direct consequences to approximately 600 direct employees and the economy of the local area and the state of New South Wales).* | existence of the Master Cooperation Agreement which contains provisions governing the potential interactions between MACH Energy's infrastructure and the operations of the Bengalla Mine.<br><br>BMC's further submission that *"Bengalla Mine could not continue mining through the area occupied by the MTP South Infrastructure whilst such infrastructure is in place. An approval of this modification will bring about precisely that outcome*" is incorrect for the same reasons. |
| *3.9 Bengalla Mine could not continue mining through the area occupied by the MTP South Infrastructure whilst such infrastructure is in place. An approval of this modification will bring about precisely that outcome and accordingly is in fundamental conflict with SSD 5170. This incompatibility will be discussed in more detail below under the matters which the consent authority is required to address under* State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.* | |
| This Application is not a "Modification"<br><br>*3.10 In BMC's submission, what is proposed by this modification is beyond what a modification is for the purposes of section 75W of the EPA Act.* | As above, MACH Energy disagrees with BMC's assertion that the proposed changes to the Mount Pleasant Operation cannot be characterised as a Modification under section 75W of the EP&A Act.<br><br>The power of the Minister (or the Minister's delegate) to modify a development consent pursuant to s75W is broad. The Land and Environment Court and the NSW Court of Appeal have held that the scope of s75W is more expansive than the modification power in s96 EP&A Act, and that the scope of s75W even permits "a modification which is not substantially the same as the development already approved": *Williams v Minister for Planning and Anor (No 2)* [2011] NSWLEC 62 at [78]; see also *Barrick Australia Limited v Williams* [2009] NSWCA 275 at [23]. To be clear, MACH Energy is not suggesting that Modification 3 is "substantially different" to DA 92/97 in its current form. It is MACH Energy's position that Modification 3 is comfortably within the scope of s75W.<br><br>In any event, the scope of s75W is very broad. MACH Energy notes that in *Meriton Property Services Pty Limited v Minister for Planning and Infrastructure* [2013] NSWLEC 1260, Moore SC (as he then was) gave the following example of a modification which would be "so extreme" as to fall outside the scope of s75W (at [40]):<br><br>*We note that in, Barrick, the various members of the Court adopted the position that it was not appropriate to adopt some prescriptive formulation consistent, for example, with the sort of formulation that is in s 96 of the Environmental Planning and Assessment Act to set out a characterisation test for modification applications under s 75W. We accept that some changes to a proposal, using a neutral word, might be so extreme as to fall outside the concept of modification. For example, to give an instance that is quite clearly fanciful (as well as being entirely unrelated to the present proposal) if there were to be an application for an Olympic swimming pool in the upper Hunter Valley granted consent* |

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| | *pursuant to Part 3A, it would be quite clearly absurd to deal with an approval modification application to turn it into an open cut coal mine.*<br><br>MACH Energy further notes that the meaning of "modification" in s75W is construed expansively, especially having regard to the inclusive nature of the definition of that term in s75W itself: *Barrick Australia* at [15]. |
| 3.11 *The power in section 75W of the EPA Act (on which the modification seeks to rely) has been considered by the court in a number of cases, most recently in* Billinudgel Property Pty Ltd v Minister for Planning *[2016] NSWLEC 139. That case collects the principles relating to the power to modify under section 75W) and adds some additional guidance on the extent of the modification powers. In the broadest of terms, the principles are:* | Refer above. |
| (a) *The making of a modification pursuant to section 75W of the EPA Act is constrained at least to some degree (Williams v Minister for Planning [2009] NSWLEC at [53] (Basten JA); at [55] (Biscoe J); (Meriton Property Services Pty Ltd v Minister for Planning and Infrastructure [2013] NSWLEC 1260 at [40] (Senior Commissioner Moore).* | |
| (b) *There is no clear dividing line between what is a modification and what is not a modification: (Barrick Australia Limited v Williams [2009] NSWCA 275 at [51] and [53] (Basten JA)); (Meriton Property Services Pty Ltd v Minister for Planning and Infrastructure [2013] NSWLEC 1260 at [40] (Senior Commissioner Moore)).* | |
| (c) *Whether a proposed change constitutes a modification has generally been negatively defined – i.e. what is not a modification. What has been found by the court to not be a modification includes:* | |
| (i) *a change to "an* element of the underlying project": (*Barrick Australia Limited v Williams [2009] NSWCA 275* at [53] (Basten JA)); | |
| (ii) a "radical transformation": (Williams v Minister for Planning (2009) 164 LGERA 204; [2009] NSWLEC 5 at [57] (Biscoe J)); | |
| (iii) a "radical *change* to the existing project" or a change that results in the modified development being "substantially different": Williams v Minister for Planning (No 2) [2011] NSWLEC 62 at [57] and [81] (Pain J) (Williams No. 2), and | |

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| *(d) It is possible to determine whether a change is a modification without recourse to what does not constitute a modification, such as:* | Refer above. |
| (i) whether *that* change can be described as having "sufficient linear descent" from the approval: (Meriton Property Services Pty Ltd v Minister for Planning and Infrastructure [2013] NSWLEC 1260at [41] (Senior Commissioner Moore)); | |
| (ii) the natural *meaning* of the word "modification". The Macquarie Dictionary defines it as a "partial alteration". The word "modify", which is separately defined, is given the primary definition of "to change somewhat the form or quantities of; alter somewhat". Both these definitions support the proposition that a modification refers to a limited change: (Billinudgel Property Pty Ltd v Minister for Planning [2016] NSWLEC 139at [59] (Robson J)); | |
| (iii) the meaning of the phrase "changing the terms", which is found twice in the definition of "modification of approval" in section 75W(1) of the EPA Act is relevant. The Macquarie Dictionary relevantly defines "terms" as being "conditions or stipulations limiting what is proposed to be granted or done". To "change" something is relevantly defined as "to make something different; alter in condition, appearance etc." or "to substitute another or others for; exchange for something else". Therefore, given its natural meaning, a modification is restricted to substituting the limiting conditions or stipulations that form part of an approval, rather than changing an underlying and essential part of the approval itself. (see Billinudgel Property Pty Ltd v Minister for Planning [2016] NSWLEC 139 at [60] (Robson J) (Billinudgel Property). | |
| *3.12 In Billinudgel Property, Robson J quoted with approval Pain J in Williams No. 2 saying "… modification of an approval [under section 75W EPA Act] was something intended to have limited environmental consequences …". The changes to the Mount Pleasant development which would be brought about by this modification could not be said to be "limited" in that context. The reasonable likelihood of material interference or material adverse impact on Bengalla Mine as well as all the other differences (catalogued above) are well beyond "… limited … consequences".* | BMC has failed to supply the full context of this passage and also appears to have misattributed this passage. The statement quoted was made by Basten JA in *Barrick Australia Ltd v Williams* [2009] NSWCA 275 at [53], where her Honour said:<br><br>*Construing s 75W in its context, it is clear that the modification of an approval was something intended to have limited environmental consequences beyond those which had been the subject of assessment.* ***(Given the powers of the Director-General, it cannot be said, of course, that only modifications which properly required no further environmental assessment were envisaged.)***<br><br>(emphasis added)<br><br>In any event, the potential impacts of Modification 3 (as described in Section 4 of the Environmental Assessment) are of limited environmental consequence beyond that which has already been the subject of assessment, consistent with the above principle. |

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| *3.13 The questions at the centre of whether section 75W is available in this case are whether:*<br>*(a) the end date imposed on DA 92/97 is an "underlying and essential part of the approval itself". As such, the change to the dates of operation alone will disqualify the application from being a modification;*<br>*(b) extending that date by 6 years (and changing the dates) along with all of the 9 other material changes which are proposed by this modification constitute something greater than a "limited change";*<br>*(c) whether the development in the years 2021 and beyond (having regard for the impact on approved Bengalla Mine during those years) (combined with the 9 other changes) renders the modified development " … a substantially different development …"* | MACH Energy notes that BMC does not supply any legal reasoning in support of why these questions are "at the centre of whether section 75W is available in this case", nor could BMC do so, as these questions are plainly contrived and misapply the law in any event.<br>Nonetheless, in answer to the particular questions in BMC's submission, MACH responds as follows:<br>(a) BMC's use of the language "*underlying and essential part of the approval itself*" is presumably a reference to Robson J's judgment in *Billinudgel Property Pty Ltd v Minister for* Planning [2016] NSWLEC 139 (*Billinudgel*) at [60]. The relevant sentence from Robson J's judgment is (extracted in full): "*Therefore, given its natural meaning, a modification is restricted to substituting the limiting conditions or stipulations that form part of an approval, rather than changing an underlying and essential part of the approval itself*." The end date imposed on DA 92/97 is plainly in the nature of a "limiting condition or stipulation" that forms part of DA 92/97, rather than an "*underlying and essential part of the approval itself*", and so the reference cited by BMC in fact supports MACH Energy's position;<br>(b) BMC's use of the language "limited change" is presumably a reference to *Billinudgel* at [59], where Robson J states:<br>*Further to this, I consider it appropriate to look at two further matters. The first is the natural meaning of the word "modification". Whilst the Macquarie Dictionary provides a number of unhelpful definitions of this word, it does construe it as referring to a "partial alteration". The word "modify", which is separately defined, is given the primary definition of "to change somewhat the form or quantities of; alter somewhat". Both these definitions support the proposition that a modification refers to a limited change*.<br>Again, the full context of the quote reveals its true meaning and, as above, in fact supports MACH Energy's position. In the passage quoted above, Robson J specifically cites the definition of "modify" as "to change somewhat the form or **quantities** of; alter somewhat". Modification 3 quite literally seeks to change the "quantities" of DA 92/97; for example, it seeks to increase the number of years of mining authorised by the approval by six years. That change is within the very definition of "modify" as cited by Robson J.<br>(c) The quoted text in this subparagraph is presumably a reference to Pain J's decision in *Williams v Minister for Planning and Anor (No 2)* [2011] NSWLEC 62 at [81]. Again, BMC has failed to supply the full quote and moreover appears to have misapprehended its content. In that decision, Her Honour did not endorse the "substantially different" test as BMC appears to suggest. Rather, Her Honour held that the proposed "substantially different" test did not apply to s75W (at [78]), but found in any event that the development was not "substantially different", stating at [81]: |

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| | *Further as a matter of fact, and assuming it is a matter this Court can consider, for the reasons given by the Respondents, the Minister in approving the Modified Request did not approve a substantially different development. The same mining activity will be carried out within the approved mining lease area, the area of the mine will increase by less than 11 per cent and the processes used are the same.*<br><br>MACH Energy notes Pain J's comments that "the same mining activity will be carried out within the approved mining lease area" and that "the processes used are the same" are applicable to Modification 3. |
| *3.14 In order to determine the answers to those questions, it is necessary to make factual findings about the differences in the consent as it existed at the time of the section 75W application and as it would exist as modified. In making that finding, it is permissible to look at the terms of the consent itself and to also look at the environmental impacts of the modifications when making the ultimate finding (See cases such as Vacik Pty Ltd v Penrith City Council [1992] NSWLEC 8 (Stein J), (Tynan v Meharg (1998) 101 LGERA 255 Stein JA) (Mison v Randwick Municipal Council (1991) 73 LGRA 349 at 353 – NSW Court of Appeal).* | Refer above. |
| *3.15 The main differences are:*<br><br>*(a) the consent as originally granted authorised the extraction of 197 million tonnes of ROM coal over 21 years between specified dates. The consent as modified will only permit the extraction of about 85 million tonnes of ROM coal over about 9 years;*<br><br>*(b) by changing the dates on which activities occur, the modification will put the Mount Pleasant Project in conflict with, and will be reasonably likely to have profound, unacceptable, material adverse impacts on the Bengalla Mine whereas the existing approval did not;*<br><br>*(c) the potential for material changes to final landforms at both Mount Pleasant and Bengalla mines (including the potential disruption to the reinstatement of Dry Creek) due to the potential for interruption to the progress of Bengalla Mine; and*<br><br>*(d) the other matters set out above in paragraphs 2.3(a) – 2.3(j) inclusive.* | Refer above. |

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| *3.16 The question is whether those consequences are such that the Mount Pleasant Project would, if modified in the manner proposed by the application, amount to a radical transformation of the development as approved now. In BMC's submission the answer is "yes".* | Refer above. MACH Energy notes that this question is different to the other supposedly "central" questions which BMC posed at paragraph 3.13 (though, in common with those questions, this question also misapplies the law). Contrary to BMC's submission at paragraph 3.16, both the Land and Environment Court and the NSW Court of Appeal have specifically rejected the "radical transformation" test for s75W: see *Barrick Australia* at [51]; *Billinudgel* at [71].<br><br>In any event, MACH Energy's Modification 3 would not amount to a "radical transformation" of DA 92/97 for the reasons given above. |
| *3.17 The use of a specific date (rather than a time period) in the original development consent was deliberate and intrinsic[13] to the nature and impacts of the consent.*<br><br>*[13] It is noted that Modification 1 of DA 92/97 incorporated an extension of time of 2 years (until December 2022) but this was withdrawn during the assessment process.* | BMC appears to have misread the original development consent. The original consent for DA 92/97 relevantly states (at original Condition 1.2(1)):<br><br>***Period of Approval***<br><br>*Consent shall operate for a period of 21 years from the date of the granting of the development consent*<br><br>MACH Energy queries on what basis BMC makes the submission that "a period of 21 years" is not a "time period". The submission is factually incorrect and, if anything, supports MACH Energy's position. |
| *Other Legal Reasons to Refuse*<br><br>*3.18 There are a variety of other related legal principles which would support the proposition that in this case, the discretion to modify DA 92/97 (if that power were to exist) should not be exercised including the following:*<br><br>*(a) MACH has purchased and acted on the consent with only limited time to run. There are principles established in a number of cases determined by the court that say that having accepted the benefit of the consent, the proponent should not now be permitted to be relieved of the burden brought about by the time limit. The purchase of the project by MACH is not a change in circumstances that is relevant to the exercise of the discretion to modify.*<br><br>*(b) MACH should be required to seek a new development consent for mining beyond the expiry date in the consent thus engaging the full and required environmental planning assessment needed for such a proposal.*<br><br>*(c) The application is, in substance, an appeal against the time limit placed on the consent outside the time for appeal.* | As above, MACH Energy disagrees with BMC's assertion that the proposed changes to the Mount Pleasant Operation cannot be characterised as a Modification under section 75W of the EP&A Act.<br><br>In relation to the subparagraphs of 3.18, MACH Energy responds as follows:<br><br>(a) MACH Energy has never made the submission that Modification 3 should be approved solely for the reason that MACH Energy recently purchased the Mount Pleasant Mine. It is MACH Energy's position that Modification 3 should be approved as it is a meritorious application. MACH Energy notes BMC does not elaborate on the "number of cases" alluded to by BMC in that subparagraph.<br><br>(b) Subparagraph (b) is incorrect as a matter of law. MACH Energy notes that extensions of time for the life of a mine are commonly granted pursuant to s75W of the EP&A Act. Further, MACH Energy notes that the PAC has previously approved an extension to the life of a mine of under s75W in circumstances where the proponent was preparing a SSD application for the mine: see DA 98/35 MOD 3 ("Hillgrove Mine Mod 3 – Extension of Mine Life"). MACH Energy also notes that the applicant in that case had recently purchased the mine prior to making the modification application, which also refutes the submission made by BMC at subparagraph (a) above.<br><br>(c) This submission is absurd. If it were correct, it would be the case that no person could ever apply for an extension to the life of a mine outside of the very short appeal period following the grant of development consent. |

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| ***4 Adequacy of EA*** | |
| *BMC has identified areas in which the EA is not adequate for the purpose of assessing the impacts of the development as proposed to be modified on the environment as required by the objects of the EPA Act. Whilst these matters will be developed more fully in the detailed submission which is to follow, those adequacy matters include the following:* | MACH Energy disagrees with BMC's stated view that the Modification 3 Environmental Assessment (EA) is inadequate. Further justification is provided in response to the specific comments made by BMC below. |
| *4.1 Misdescription of the scope of the changes proposed*<br><br>*Table 1 (on page 7) is described as "Overview of the Approved Mount Pleasant Operation and the Modification" however it appears to be incomplete in that it makes no reference to the following elements of the application:* | Refer MACH Energy's response to BMC Comment 3.2. |
| *(a) The absence of any mining in "North Pit" (see Figures 10, 11 and 12);* | Refer MACH Energy's response to BMC Comment 3.3(a). |
| *(b) Changes to mine sequencing and flexibility sought in that regard;* | Refer MACH Energy's response to BMC Comment 3.3(b). |
| *(c) Changes to the final landform at Mount Pleasant and potential to cause change to the final landform at Bengalla;* | Refer MACH Energy's response to BMC Comment 3.3(e). |
| *(d) Reduction in total coal extraction and associated economic impacts;* | Refer MACH Energy's response to BMC Comment 3.3(f). |
| *(e) Changed context (namely maintaining MTP South Infrastructure for the 6 year period after December 2020) and different impacts of that.* | Refer MACH Energy's response to BMC Comments 3.3(i) and 3.3(j). |
| *4.2 No quantification of water take*<br><br>*There does not appear to be any quantification of the volumes of water which will be extracted from each of the water sources which will be (directly or indirectly) affected by the development or any evidence of how much licensed water entitlement will be required to be held to satisfy that take and whether that entitlement is held.* | The Mod 3 EA states the following (Section 4.8):<br><br>*The Modification would not result in a material change to the groundwater and surface water impacts of the approved Mount Pleasant Operation, given the Modification would not:*<br><br>• *significantly alter the approved general arrangement of the Mount Pleasant Operation;*<br>• *significantly increase the development area of the mine;*<br>• *increase the approved annual maximum ROM coal and waste rock production rates; or*<br>• *include any significant changes to the approved water management system at the site.*<br><br>The Mod 3 EA also states the following with respect to water licensing (section 4.8.3:<br><br>***Water Licensing***<br><br>*MACH Energy is required to hold water access licences to account for groundwater inflows, incidental groundwater take and groundwater pumped for water supply from aquifers regulated by the Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009 and Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources 2016.*<br><br>*MACH Energy's groundwater licensing requirements will ultimately be determined by the contemporary groundwater modelling being undertaken by HydroSimulations. In the interim, the Water Management Plan presents conservative estimates of MACH* |

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| | *Energy's initial groundwater licensing requirements.*<br><br>*MACH Energy will also maintain surface water licences under the Water Sharing Plan for the Hunter Regulated River Water Source 2016 to account for any water pumped from the Hunter River.*<br><br>The Mount Pleasant Operation is being developed in accordance with the Development Consent DA92/97 and an approved Water Management Plan. |
| *4.3 Aquifer Interference Policy*<br><br>*The development has not been assessed in terms of the principles set out in the Aquifer Interference Policy.* | MACH Energy notes that the Mod 3 EA states the following (Section 6.2) (emphasis added):<br><br>***Aquifer Interference Policy***<br><br>*The AIP (NSW Government, 2012b) has been developed by the NSW Government as a component of the NSW Government's Strategic Regional Land Use Policy. The AIP applies State-wide and details water licence and impact assessment requirements.*<br><br>*The AIP has been developed to ensure equitable water sharing between various water users and proper licensing of water taken by aquifer interference activities such that the take is accounted for in the water budget and water sharing arrangements. The AIP will also enhance existing regulation, contributing to a comprehensive framework to protect the rights of all water users and the environment in NSW.*<br><br>*The Water Management Act, 2000 defines an aquifer interference activity as that which involves any of the following:*<br><br>• *the penetration of an aquifer;*<br>• *the interference with water in an aquifer;*<br>• *the obstruction of the flow of water in an aquifer;*<br>• *the taking of water from an aquifer in the course of carrying out mining or any other activity prescribed by the regulations; and*<br>• *the disposal of water taken from an aquifer in the course of carrying out mining or any other activity prescribed by the regulations.*<br><br>*The AIP requires all water taken by aquifer interference activities to be accounted for within the extraction limits set by the relevant Water Sharing Plan.*<br><br>*The Water Sharing Plans relevant to groundwater resources for the Mount Pleasant Operation are the Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources, 2009 and the Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources, 2016.*<br><br>***As the Modification would not change the approved open cut extent and maximum rate of mining, impacts on groundwater resources arising from the Modification would be negligible. It therefore follows that the Modification would fall within the Level 1 minimal impact criteria under the AIP, when compared to the approved impacts of the Mount Pleasant Operation.***<br><br>… |

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| *4.4 Detailed Designs*<br><br>*The EA does not contain a detailed design of the MTP South Infrastructure (including especially the rail and loading infrastructure), despite the fact that construction of this infrastructure has already commenced. This is acknowledged in paragraph 2.5 at page 14 of the EA.*<br><br>*Similarly, there is no detailed design of the Coal Handling and Preparation Plant (despite the fact that construction of this infrastructure has already commenced) which is acknowledged in paragraph 2.4 at page 10.*<br><br>*BMC submits that there is insufficient detail about these elements of the proposal to enable a proper assessment of the impacts upon the environment.* | It is not necessary for the Mod 3 EA to seek to describe these elements of the Mount Pleasant Operation in any particular detail, as they are already approved.<br><br>As set out above, MACH Energy's right to construct, operate and maintain this infrastructure is acknowledged in multiple places in the Bengalla Continuation Project Environmental Impact Statement (Bengalla September, 2013), and also within BMC's Modification 3 submission. |
| *4.5 Errors / Omissions on Plans in EA*<br><br>*The plans in the EA (for example Figure 3 on page 4) have a number of material errors in them including:* | A response to each of BMC's perceived errors is provided below. |
| • *They do not show Mining Lease ML 1711 held by BMC for the purpose of supporting CW1, an existing clean water dam of 900 megalitres capacity, which operates as a dry detention pond as part of the Dry Creek diversion. Instead, the plans show an open cut pit in the area of BMC's existing CW1;* | MACH Energy notes that no BMC mining leases are shown on the Figures in the Mod 3 EA, nor is there any specific requirement for the BMC leases to be shown. The BMC (including the CW1 area) is represented on numerous figures in the Modification 3 EA (including Figure 3 on page 4) by the Approved Disturbance Boundary as shown on Appendix 2 of Development Consent SSD-5170.<br><br>Further, MACH Energy notes that perusal of recent BMC approval documentation suggest that BMC commonly does not show its own mining leases in many comparable plans shown in Environmental Assessment documentation. |
| • *They do not show a "DA Boundary" for the Mount Pleasant Project (contrary to the orthodox approach for such matters);* | Appendix 1 of the Mount Pleasant Development Consent provides a Schedule of land to which the Consent applies. |
| • *They show an area labelled as "Conveyor Corridor" in an area within Bengalla's DA Boundary which (presumably) relates to the approved coal conveyor (alternative to the rail infrastructure being built now). MACH notified the Department of Planning and Environment (pursuant to condition 7 schedule 2 of the development consent DA 92/97) by letter dated 20 January 2017 that it was not developing the coal conveyor and instead was developing the rail spur and loop. Under DA 92/97, MACH is authorised to undertake one or the other (rail or conveyor). In giving the notification and subsequently constructing the rail option MACH has forgone its ability to construct the conveyor option and accordingly showing this on the plan is misleading and incorrect.* | MACH Energy notes that the conveyor corridor shown on Figure 3 of the Mod 3 EA is consistent with Appendix 2 of the Mount Pleasant Operation Development Consent DA92/97. |

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| *4.6 Absence of economic assessment* | |
| *(a) There is no assessment of the economic impact of the proposal as modified to enable a proper consideration by the consent authority of the social and economic welfare of the community and other matters which should properly attract the attention of the consent authority under the objects of the EPA Act.* | MACH Energy notes that the construction and operation of the Mount Pleasant Operation has already been assessed and approved as being in the public interest. The construction and operation of the project will already occur in accordance with its existing approvals.<br><br>Further, MACH Energy notes that the Mod 3 EA states the following (Section 4.10.4):<br><br>*The Modification would not involve any material change to the operational workforce of the approved Mount Pleasant Operation of up to approximately 380 people.*<br><br>*The Modification also would not involve any additional production of coal relative to the originally approved mine.*<br><br>*Given the contraction of the Hunter Valley coal industry that has been observed in the last decade and the closure of some nearby operations, it is anticipated that the Mount Pleasant Operation will provide important employment and business opportunities for the industry.*<br><br>*These employment and business opportunities in the Muswellbrook LGA and the wider Hunter Valley region would be extended by approximately six years, should the Modification be approved.*<br><br>*Over the course of the period from December 2020 to December 2026 MACH Energy also estimates that approximately 46 Mt of product coal would be produced by the Mount Pleasant Operation. This incremental production would be valued at over $4.5 Billion based on MACH Energy coal price and exchange rate estimates, and is anticipated to generate significant associated royalties to the State of NSW (i.e. >$350M).* |
| *(b) Furthermore, there is no assessment of the economic impact of the material adverse impacts or interference with the Bengalla Mine which is reasonably likely to occur if this modification application is approved.* | For the reasons outlined above, there is no basis to assert that MACH Energy's modification application will have a material adverse impact on or interfere with the Bengalla Mine. Therefore, it is not necessary for MACH Energy's modification application to address these matters.<br><br>In any event, the Mod 3 EA explains that a Master Cooperation Agreement is in place to manage the interaction of the two mines.<br><br>The existence of this agreement was also acknowledged in the Bengalla Continuation Project Environmental Impact Statement (BMC, September 2013). Refer MACH Energy's response to BMC Comment 3.3(i). |
| *(c) There has been no compliance with the requirements of the "Guidelines for the economic assessment of mining and coal seam gas proposals" (December 2015).* | MACH Energy consulted with the DPE with respect to the proposed Modification and the supporting studies required in support of the Environmental Assessment.<br><br>Further, MACH Energy notes that perusal of the three Environmental Assessment documents prepared for the Bengalla Continuation Project modification applications to date indicates that none were accompanied by an appendix presenting a detailed economic assessment in support of the application. |

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| *4.7 Inconsistency between Figure 32 and Coal Schedule on Page 28*<br><br>*Figure 32 (on page 78 of the EA) depicts the "Conceptual Final Landform (2026)". This figure is inconsistent with the Coal Schedule on page 28 of the EA in that Table 2 shows 10.5 Mtpa (the maximum allowable) ROM being mined in 2026 and simultaneously the establishment of a final landform in the form of a lake by the end of that same year.*<br><br>*Figure 32 is also inconsistent with the Bengalla development consent SSD 5170 in that in 2026 Bengalla is approved for another 13 years of open cut mining (until 2039) after which time the final void of Bengalla (consistent with SSD 5170) may be in place. Figure 32 appears to depict a final void for Bengalla in 2026.*<br><br>*Figure 32 also portrays a position which is unlikely to happen in that it portrays Bengalla's final void (post 2039) simultaneously with Mount Pleasant final void occurring in 2026. The Figure is labelled "Conceptual Final Landform (2026)" whilst Bengalla's final landform would not reach the state shown in that plan until at least 2039 (per SSD 5170) if at all if the incompatibility issues identified in this submission are not adequately dealt with.* | MACH Energy notes that the Mod 3 EA states the following with respect to the development of final landforms for the Mount Pleasant Operation (Section 5):<br><br>*When Development Consent DA 92/97 was granted in 1999, the mine was permitted to carry out mining operations for a period of 21 years from the date of the granting of the development consent (i.e. until 22 December 2020).*<br><br>*Mining will commence in 2017 and will be conducted for approximately 10 years if the Modification is approved. Significant open cut coal reserves are available if mining is subsequently approved to continue past 2026 (i.e. subject to separate assessment and approval). MACH Energy has developed a conceptual final landform diagram for Year 2038 if mining activities were to continue beyond the Modification operational period. This would be subject to separate assessment and approval and will therefore be presented in future modifications or State Significant Development applications.*<br><br>…<br><br>*The conceptual final landforms discussed in the following subsections therefore are limited to the Modification period (i.e. to 2026).*<br><br>Therefore, the naming of Figure 32 "Conceptual Final Landform (2026)" indicates that it shows the final landform, if Mount Pleasant Operation mining operations were to cease in 2026.<br><br>It does not represent a year 2026 snapshot of the Mount Pleasant Operation or the Bengalla Mine. |
| *4.8 Other Environmental Impacts*<br><br>*BMC proposes to lodge supplementary information in support of this submission as soon as possible to address the assessments which have been made in the EA of the environmental impacts of the proposed modified development. This additional information will include detailed scientific analysis of environmental impacts assessed via the EA in all areas including especially blasting, economic impacts, dust, noise, visual, groundwater and surface water and cumulative impacts across all impact types.* | A response to BMC's supplementary analysis is provided separately. |
| ***5 State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (SEPP Mining)***<br><br>*5.1 The applicability of SEPP Mining to this application is acknowledged at page 82 of the EA.*<br><br>*The following parts of SEPP Mining have not been addressed in the EA and a proper assessment of them would, in BMC's submission, result in the consent authority concluding that the application, in its present form, should be refused.*<br><br>*5.2 Compatibility with surrounding land use* | Responses to BMC's specific concerns/comments regarding the Mining SEPP are provided below. |

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| (a) *Clause 13 of SEPP Mining states:*<br>*(1) This clause applies to an application for consent for development on land that is, immediately before the application is determined:*<br>*(a) in the vicinity of an existing mine, petroleum production facility or extractive industry, or*<br>*(b) identified on a map (being a map that is approved and signed by the Minister and copies of which are deposited in the head office of the Department and publicly available on the Department's website) as being the location of State or regionally significant resources of minerals, petroleum or extractive materials, or*<br>*Note. At the commencement of this Policy, no land was identified as referred to in paragraph (b).*<br>*(c) identified by an environmental planning instrument as being the location of significant resources of minerals, petroleum or extractive materials.*<br>*(2) Before determining an application to which this clause applies, the consent authority must:*<br>*(a) consider:*<br>*(i) the existing uses and approved uses of land in the vicinity of the development, and*<br>*(ii) whether or not the development is likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials (including by limiting access to, or impeding assessment of, those resources), and*<br>*(iii) any ways in which the development may be incompatible with any of those existing or approved uses or that current or future extraction or recovery, and*<br>*(b) evaluate and compare the respective public benefits of the development and the uses, extraction and recovery referred to in paragraph (a) (i) and (ii), and*<br>*(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).* | Noted. |
| (b) *Clause 13 applies to this application with regard to impacts on Bengalla Mine because Bengalla is an "existing mine" (see clause 13(1)(a)).* | MACH Energy concurs that Bengalla Mine is an existing mine for the purposes of Clause 13(1)(a) of the Mining SEPP. |

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| (c) *As stated above, the existence of the MTP South Infrastructure in the years after 2020 has a very different impact to that which it had prior to the continuation of the Bengalla Mine (SSD 5170) being approved (which approval was entirely consistent with the position which has always been anticipated since 1992 as will be demonstrated from the historical material which will accompany our supplemental submission on this modification). In short, approving the existence and use of the MTP South Infrastructure in the years until 2020 was a development which had little material impact on the neighbouring approved mine.* | As noted above, BMC has always been aware of the potential for MACH Energy's infrastructure to intersect with the operations of the Bengalla Mine. This is expressly acknowledged in the Bengalla Continuation Project Environmental Impact Statement which explored the likely outcome that the Mount Pleasant Operation would commence mining in 2017, and then run for the originally approved period of 21 years.<br><br>Further, the management of interactions between the two operations is already addressed by DA 92/97 in its current form, and the Master Cooperation Agreement, as described in the various responses above. |
| (d) *An approval for the existence and use of that same infrastructure in the years after 2020 is reasonably likely to materially interfere with or have material adverse impacts on SSD 5170, and on BMC's operations permitted under it, as well as on BMC's mining leases and associated approvals. Bengalla Mine cannot continue mining through the area occupied by the MTP South Infrastructure whilst it is present there. An approval of this modification that does not address this issue is in fundamental conflict with SSD 5170.* | MACH Energy's modification application does not seek approval for the "*existence and use*" of its rail and pipeline infrastructure in the years after 2020, but rather seeks an extension of its existing approval, which includes approval to construct this infrastructure south of Wybong Road, beyond 2020. The interaction between the two mines south of Wybong Road is already addressed in DA 92/97, and in particular by Condition 37 of DA 92/97. Condition 37 is satisfied by a Deed of Undertaking to which MACH Energy and the Minister for Resources are parties. Under the Deed of Undertaking, MACH Energy has given an undertaking to the Minister to comply with its relevant obligations under the Master Cooperation Agreement (an agreement to which BMC is a party). The Master Cooperation Agreement governs the potential interactions between Mount Pleasant and the operations of the Bengalla Mine and entitles the owners of the Bengalla Mine to require MACH Energy to relocate this infrastructure provided certain conditions are met.<br><br>In the circumstances, there is no basis to say that the approval of MACH Energy's modification application "*is reasonably likely to materially interfere with or have material adverse impacts on SSD 5170, and on BMC's operations permitted under it, as well as on BMC's mining leases and associated approvals*". |
| (e) *BMC notes that at section 2.16.1 of the EA (page 22), MACH states that "The Mount Pleasant Operation has a Master Co-Operation Agreement with Bengalla Mine which has been developed to manage interactions between the two mining operations". It is BMC's position that the agreement referred to does not satisfactorily address or manage the potential impact of this application on the Bengalla Mine. The "Master Co- operation Agreement" was agreed in 2011 and was predicated upon a development consent for the Mount Pleasant Project which expired in 2020. This application is a significant departure from that context and the interactions between the proposed Mount Pleasant Mine and the existing Bengalla Mine far more complex as a result. Accordingly, this application must be dealt with entirely on its own merits and conditioned appropriately.* | MACH Energy notes that the only explanation provided for BMC's statement that the Master Cooperation Agreement "*does not satisfactorily address or manage the potential impact of this application on the Bengalla Mine*" is its statement that the Master Cooperation Agreement "*was predicated upon a development consent for the Mount Pleasant Project which expired in 2020*".<br><br>However, it is not correct to say that the Master Cooperation Agreement "*was predicated upon a development consent for the Mount Pleasant Project which expired in 2020*". At the time the Master Cooperation Agreement was entered into, MACH Energy's predecessor (Coal & Allied Operations Pty Limited) had lodged a s75W modification application which sought, *inter alia*, a two year extension to the life of the Mount Pleasant consent, to December 2022 (MOD 1). BMC did not lodge any objection to that s75W |

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| | modification application, which was publicly exhibited during October 2010.<br><br>That aspect of the modification application was later withdrawn by Coal & Allied by way of letter a letter to the Department dated 1 February 2011. However, in that same letter (which is publicly available on the Department's website),[6] Coal & Allied wrote:<br><br>*The existing development consent is due to expire on 22 December 2020. Allowing approximately three years for construction and development, the footprint of disturbance and rehabilitation at the end of year 2020 would reflect approximately year six of mining operations. This may vary depending on the rate of construction/development and* ***it is expected that mining will continue beyond year six as contemplated in the EIS. Development beyond the current expiry date of the development consent would be the subject of future development applications.***<br><br>The fact is that the Master Cooperation Agreement was entered into on 5 May 2011 in circumstances where the Mount Pleasant Development Consent contemplated extraction of coal over a 21 year period, the development of the Mount Pleasant Mine had not yet begun, and further mining beyond 2020 had already been sought by MACH Energy's predecessor (Coal & Allied) by way of a s75W modification application lodged in 2010. That application was not opposed by BMC. Moreover, Coal & Allied had explicitly stated in public documents that mining was expected to occur at Mount Pleasant beyond 2020. Furthermore, in a scheme booklet released to the ASX on 24 October 2011, Coal & Allied published a report which stated that mining was envisaged at Mount Pleasant through to 2040.[7] BMC again agreed to its obligations under the Master Cooperation Agreement in February 2016, and agreed to novate that agreement to MACH Energy in July 2016. BMC's submission that the MCA was predicated on the expiry of the Mount Pleasant development consent in 2020 is inconsistent with those facts and with the Master Cooperation Agreement itself, which does not expire in 2020 but rather continues to apply for the duration of mining at Mount Pleasant.<br><br>MACH Energy also notes that at all times prior to February 2016, Coal & Allied's parent company, Rio Tinto Limited, also held a 40% interest in the Bengalla Mine.<br><br>In the circumstances, the parties clearly contemplated that approval would eventually be sought to enable mining to occur at Mount Pleasant beyond 2020, and the Master Cooperation Agreement accommodates that state of affairs. Further, as set out above, the likelihood that the Mount Pleasant Mine would seek approval to extend its operations beyond 2020 was expressly acknowledged in the Bengalla Continuation Project Environmental Impact Statement (BMC, September 2013) which was provided in support of Bengalla's SSD Consent application. |

[6] https://majorprojects.accelo.com/public/e0ffcdb60f3fd8ff9c3542e3eb61c63f/Response%20to%20Submissions%202%20-%20Additional%20Noise%20Assessment%20-%20Vacant%20Land.pdf
[7] http://www.aspecthuntley.com.au/asxdata/20111024/pdf/01231657.pdf, Appendix J, Coal & Allied Technical Specialist Report, page 22.

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| | In any event, the fact remains that the parties have entered into a commercial agreement which governs the potential interactions between MACH Energy's infrastructure and the Bengalla Mine. It is not open to BMC to now complain about the adequacy of the terms of that agreement, particularly in circumstances where it has already obtained a significant commercial benefit under that agreement. |
| *(f) In any event, the existence of the agreement is irrelevant to the determination of the modification application by the consent authority. The development consent must itself, without relying upon agreements of instruments external to it, address all reasonably proximate impacts within the terms of the consent. Private agreements (which can be changed or not performed without recourse to or for the consent authority or the community) cannot be relied upon by the consent authority in determining an application under the EPA Act.* | BMC's makes the submission that a "*development consent must itself, without relying upon agreements of instruments external to it, address all reasonably proximate impacts within the terms of the consent*". MACH Energy notes that DA 92/97 already addresses the "proximate impact" of the Mount Pleasant consent on the Bengalla Mine by reason of Condition 37.<br><br>In satisfaction of this condition, the previous owner of the Mount Pleasant Mine, Coal & Allied Operations Pty Ltd, entered into a Deed of Undertaking with the Minister for Resources, Industry and Energy on 7 July 2016 by which it undertook to the Minister to comply with its obligations under the Master Cooperation Agreement in relation to the relocation of the relevant rail infrastructure.<br><br>Furthermore, in the Deed of Undertaking, the Minister for Resources acknowledged that the Deed of Undertaking satisfied the Minister's requirements in relation to Condition 37. This Deed of Undertaking was novated to MACH Energy on 25 May 2017. Under the terms of the Deed of Undertaking, MACH Energy cannot agree to any variation of its relocation obligations under the Master Cooperation Agreement without obtaining the prior written consent of the Minister for Resources.<br><br>In addition to ignoring Condition 37 of DA 92/97, BMC's submission also misapprehends the law. Whilst it is true that a development consent is generally to be construed without reference to extrinsic materials (*Lake Macquarie City Council v Australian Native Landscapes Pty Ltd (No 2)* [2015] NSWLEC 114 at [44]; *Allandale Blue Metal Pty Ltd v Roads and Maritime Services* [2013] NSWCA 103 at [43]), that does not mean that a proponent cannot rely on an external agreement to **satisfy a condition** of that consent. Indeed, Condition 37 of DA 92/97 specifically requires the existence of an external agreement between MACH Energy and the Minister for Resources (being the Deed of Undertaking).<br><br>It is not, and has never been, MACH Energy's positon that the consent authority must "rely" on the Master Cooperation Agreement in determining the Modification 3 application. In determining the merits of MACH Energy's application, the consent authority can be satisfied that DA 92/97 already addresses the interaction between Mount Pleasant and Bengalla Mine south of Wybong Road by reason of Condition 37. Condition 37 has been satisfied by the Deed of Undertaking, under the terms of which MACH Energy has undertaken to the Minister for Resources to comply with its relevant obligations under the Master Cooperation Agreement. |

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| (g) *Clause 13 of SEPP Mining focuses on the application for planning approval alone and not on any extraneous documents or obligations requiring that the consent authority address the interaction matters in its consideration of the modification application alone. Any such matters must be assessed having regard solely for the application and the provisions of SEPP Mining. To the extent that the applicant purports to rely upon extraneous matters (outside the application and the proposed consent) to assess these or any other issue raised in this submission, the application is deficient and cannot be approved.* | Refer above. |
| (h) *Addressing the individual heads of consideration under Clause 13 of SEPP Mining BMC submits as follows:*<br>(i) ***Clause 13(2)(a)(i)** – both of Bengalla's existing operations and its approved operations under SSD 5170 must be considered. The retention of the MTP South Infrastructure in the proposed location for the additional period is in direct conflict with development approved by SSD 5170 in that it seeks approval to maintain and use the MTP South Infrastructure at the same time as BMC is approved (under SSD 5170) to mine the same area by open cut methods. The application and EA incorporates no assessment of this conflict.* | Refer responses above. |
| (ii) ***Clause 13(2)(b)(ii)** – the MTP South Infrastructure is directly inconsistent with the approved Bengalla Mine. Both uses cannot occur simultaneously in that area. If the MTP South Infrastructure (which is being constructed under DA 92/97 now) is not removed after December 2020 (as is presently required under DA 92/97) then the impact on the Bengalla Mine will be material. The potential result of that will be that the coal within the balance of the Bengalla SSD 5170 area will not be recovered, the value of which to the state of New South Wales and to the local community will be "significant".*<br>*Further, Figure 8, on page 16 of the EA, shows water from one of Mount Pleasant mine's dams being discharged into "Bengalla Mine". This would have a material adverse impact on Bengalla's current and future approved operations and on SSD 5170 and mining leases (although as there has been no consultation with BMC on this or any other point of detail on matters which have an impact on Bengalla, that impact is actually difficult for BMC to determine). BMC submits that it is simply absurd to contemplate issuing a development consent which authorises the discharge of water into the asset of a third party (and equally to request such a thing). The impact of such a proposition is not assessed at all in the EA and to authorise such an activity would be to authorise a major infringement of Bengalla's rights and an extremely serious risk to human safety.* | Refer responses above (i.e. MACH Energy responses to BMC Comments 1, 2.5. 3.3(i) and 5.2(f)) regarding the interaction between Mount Pleasant infrastructure and the Bengalla Mine.<br>Figure 8 provides a schematic diagram of the water management system at the Mount Pleasant Operation. It should be noted that Figure 8 does not show controlled mine water discharge to Bengalla Mine.<br>The legend of Figure 8 clearly identifies that the type of flow that would report to the Bengalla Mine water management system is "Overflow Due to Rainfall in Excess of Design Criteria" (i.e. representative of a spillway).<br>Given both mines are located within the "Dry Creek" catchment and Bengalla Mine water management infrastructure is located immediately downstream of the Mount Pleasant Operation, this is a factual schematic representation of the approved water management system. |

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| *(iii)* ***Clause 13(2)(a)(iii)*** *– in the area* of *the MTP South Infrastructure, the proposed development the subject of the modification is entirely incompatible with the Bengalla Mine in that both* uses *cannot occur simultaneously. Similarly, the proposed discharge of water from a Mount Pleasant dam into the Bengalla Mine (see Figure 8) is incompatible with the Bengalla Mine and unsafe (to humans and the natural and man-made environment).* | Refer to responses above. |
| (iv) ***Clause 13(2)(c)*** *– there are no measures proposed by the applicant in the application to avoid or minimise any incompatibility between the MTP South Infrastructure and approved Bengalla Mine SSD 5170.* | For the reasons set out above, it is not necessary for the MACH Energy to include measures in its modification application to avoid or minimise any incompatibility between MACH Energy's rail and pipeline infrastructure and the Bengalla Mine. The management of interactions between the two operations is addressed by DA 92/97 (and in particular, Condition 37) and the Master Cooperation Agreement, as described above. |
| *(v) BMC submits that the direct inconsistency, significant impact on extraction of minerals and* incompatibility *of the development with Bengalla Mine SSD 5170, which is both existing and approved, renders this modification such as cannot be approved in its current form. The incompatibility, impact and inconsistency issues require a detailed assessment including provision for the following:*<br>*(A) the MTP South Infrastructure needs to be removed and Mining Lease 1645 south of Wybong Road part transferred to BMC by the date at which BMC requires access to that area of land for mining purposes (indicatively December 2021) in order to facilitate the operations required for continuation of Bengalla in accordance with SSD 5170;*<br>*(B) the applicant should be required to give access across the rail or coal loading infrastructure to enable BMC to operate Bengalla Mine in the period leading up to removal of the MTP South Infrastructure so as to facilitate BMC to access its land on the western side of the MTP South Infrastructure for purposes such as topsoil and overburden emplacement and storage and mine related infrastructure (such as water management facilities, including water diversion levees, water pipelines and pumps, drainage structures, dams, explosives magazine(s), reload facility(ies), access roads, electrical substations, electricity transmission lines, maintenance pads, bioremediation farm, environmental monitoring stations and others);* | The management of interactions between the two operations is addressed by DA 92/97 (and in particular, condition 37) and the Master Cooperation Agreement, as described in the various responses above. Further, the imposition of conditions of the nature identified in paragraphs (A) and (B) would allow BMC and the owners of the Bengalla Mine to effectively walk away from their obligations under that agreement. In circumstances where BMC and owners of the Bengalla Mine have already obtained a significant commercial benefit under that Master Cooperation Agreement it would be grossly unjust to allow BMC and the owners of the Bengalla Mine to do so. |

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| *(C) the applicant should be required to adhere to construction standards for all infrastructure which it constructs within the potential blasting impact zone of the Bengalla Mine active mining areas or future mining areas to mining industry standard benchmarks for infrastructure constructed in the vicinity of proposed blasting and should be required to adhere to mining industry standard operational blasting requirements in order to ensure that risks associated with blasting impacts arising from the ordinary approved blasting activities of the Bengalla Mine are anticipated and appropriately managed;* | MACH Energy notes that amendments to mine infrastructure are not proposed as part of the Modification 3 application. The interaction between blasting at the Bengalla Mine and the approved Mount Pleasant infrastructure was considered and addressed as part of the Bengalla Continuation Project Environmental Impact Statement, which states (BMC, 2013):<br><br>*BMC's existing Blast Management Plan will be revised in consultation with the relevant regulators to include at least the following:*<br><br>• …<br>• *Commitment for a maximum of one blast event per day during the hours of 11:00 am to 3:00 pm on Sundays only for blasts scheduled within 500 m of the MIA as defined on Figure 17 (or the approved but not yet constructed Mount Pleasant Project infrastructure area);*<br>• …<br>• *Blast design procedures to be undertaken by appropriately qualified personnel to minimise the potential for overpressure, ground vibration and blast fume impacts to residential receptors, surrounding infrastructure and BMC employees;*<br><br>Under Condition 14, Schedule 3 of the Bengalla Mine Development Consent (SSD-5170), BMC must not undertake blasting on site within 500 metres of any land that is not owned by BMC (i.e. land owned by MACH Energy) without:<br><br>• a written agreement with the relevant landowner (MACH Energy).<br>• demonstrating to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock or damaging buildings and/or structures; and<br>• updating the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the road or land.<br><br>On this basis, MACH Energy understands that the approved MACH Energy infrastructure is not required to be constructed to any specific standard to withstanding potential Bengalla Mine blasting impacts. Rather, it is BMC's Development Consent that dictates that blasting must not impact on Mount Pleasant infrastructure, without the written agreement of MACH Energy). This is consistent with standard practice for a proponent to be responsible for managing the off-site impacts of its development to suitable standards. |

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| *(D) measures should be put in place to ensure that the physical safety of Bengalla's clean water dam CW1 and its associated infrastructure and the environmental and operational integrity of the dam is preserved at all times. CW1 is intended to be and approved to be operated as a dry detention dam which receives clean run off water from its catchment and then diverts that water around the former location of Dry Creek via a system of pipes and then discharged into the Hunter River at an approved discharge point. Any risk to the integrity of the water which flows into CW1 must be addressed by the applicant;* | BMC's CW1 was approved as part of the Bengalla Continuation Project. The Environmental Impact Statement for the Bengalla Continuation Project included a Dry Creek Interim Management System and Conceptual Re-establishment Study (CW1 Study).<br><br>The CW1 Study describes 'Option 2A2' as the preferred management system option for the Bengalla Mine (i.e. Option 2A2 refers to the approved design of CW1). The CW1 Study includes the following statements regarding the interaction between CW1/Option 2A2 and the Mount Pleasant Operation (emphasis added):<br><br>*Option 2A2 was adopted by BMC for the interim management system as it allows that mining efficiency for the Project is maximised,* ***was compatible with the Mount Pleasant Project's approved works*** *and includes the two separate discharge dams that allow the two mines to remain independent for the HRSTS.*<br>*…*<br>*The preferred option as presented and assessed in the Mount Pleasant Mine Environmental Impact Statement (MTP EIS) (ERM Mitchell McCotter 1997) demonstrates that the interim water management system developed for the Project is practical* ***with extensive consideration provided in relation to the layout of the approved Mount Pleasant Project.***<br>*…*<br>*Construction of a clean water dam (CW1) for BMC north of Wybong Road. The dam has been designed to capture the runoff generated from the 1 in 200 year average recurrence interval (ARI), 72 hour storm prior to passing under Wybong Road. Noting that this dam is essentially all surcharge capacity, CW1 has a surcharge capacity of 900 ML to reduce the potential for runoff entering the Project's void.* ***Should the Mount Pleasant Project proceed, the clean water catchment would decrease due to their infrastructure occupying part of the catchment.***<br><br>Based on the above, MACH Energy is of the view that BMC's concerns regarding CW1 have already been considered and addressed as part of BMC's application for that dam. Notwithstanding, MACH Energy notes that management of interactions between the two operations is addressed by MACH Energy's existing consent (and in particular by Condition 37 of DA 92/97) and the Master Cooperation Agreement, as described above. |
| *(E) discharge of water from the Mount Pleasant operation into the Bengalla Mine should not be approved* | Refer to MACH Energy's response to BMC Comment 5.2(h)(ii). |

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| *5.3 Resource Recovery* | |
| *(a) Clause 15 of SEPP Mining provides as follows:* | Noted. |
| *(1) Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider the efficiency or otherwise of the development in terms of resource recovery.* | |
| *(2) Before granting consent for the development, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at optimising the efficiency of resource recovery and the reuse or recycling of material.* | |
| *(3) The consent authority may refuse to grant consent to development if it is not satisfied that the development will be carried out in such a way as to optimise the efficiency of recovery of minerals, petroleum or extractive materials and to minimise the creation of waste in association with the extraction, recovery or processing of minerals, petroleum or extractive materials.* | |
| *(b) Clause 15 is also relevant to the consideration of the interaction between the Bengalla Mine and proposed Mount Pleasant Mine as described in Modification 3 and militates against approval because:* | For the reasons outlined above, MACH Energy's modification application does not jeopardise recovery of the coal resource in ML 1729 as asserted by BMC. Therefore, there is no reason why MACH Energy's modification application needs to include "*measures to ensure that the Bengalla Mine is enabled to continue operation and recovering coal in accordance with its existing development consent (SSD 5170)*." |
| *(i) The proposed development described in the application recovers 46 Million tonnes of product coal but in so doing jeopardises the recovery of in the order of 200 Million tonnes[14] of Run Of Mine Coal at Bengalla;* | |
| *(ii) Under clause 15 the consent authority "may refuse to grant consent" if the development is not proposed to be conducted in " … such a way as to optimise the efficiency of recovery of minerals …". The development described in the modification contains no measures to ensure that the Bengalla Mine is enabled to continue operation and recovering coal in accordance with its existing development consent (SSD 5170). In the absence of the application containing such measures, it is BMC's submission that this application cannot be approved having regard for the objects of the EPA Act and the provisions of clause 15 of SEPP Mining.* | |
| *(iii) Relevantly to resource recovery issues required to be considered under clause 15 of SEPP Mining, BMC also notes the apparent exclusion of mining in the "North Pit" from the consent (if the modification is approved).* | |
| *(iv) If the Bengalla Mine is forced to prematurely curtail operations due to the continued existence of the MTP South Infrastructure then recovery of the very significant coal resource within ML 1729 will be jeopardised. It is not feasible to recommence open cut mining in the (limited) area of ML 1729 located west of the MTP South Infrastructure because of the significant capital cost of establishing a new box cut, need for new development consent and the lack of access from that area to the existing coal handling and preparation plant and loading infrastructure at Bengalla Mine due to the impediment of the MTP South Infrastructure.* | |

| Bengalla Mining Company Pty Limited Submission | Response |
|---|---|
| ***6 Conclusion***<br>*6.1 The changes to DA 92/97 are not such as may be approved as a modification. The development as proposed under the modification application is a radical transformation from that which is presently approved due to the material differences in the impacts, benefits and activities proposed (including, without limitation, the axiomatic inconsistency with the approved Bengalla Mine).*<br>*6.2 The development the subject of the application would be reasonably likely to materially interfere with or have a material adverse impact upon BMC's, current mining operations and its future approved mining operations and its development consent (SSD 5170), mining lease and associated approvals.*<br>*6.3 When assessed against the objects of the EPA Act[15] this application must be refused.*<br>*6.4 When assessed against the relevant matters in SEPP Mining this application must be refused.*<br>*6.5 To the extent that the applicant may seek to rely upon extraneous documents or arrangements which are outside the application to address impacts of what is proposed by this application, those extraneous matters must be ignored and this application can only be determined on its content. A development consent is a right in rem (attaching to land) and arrangements in personam should not be taken into consideration in determining this application. On that basis, the obvious and profound inconsistency between the continued presence of the MTP South Infrastructure after December 2020 (the date by which operations must stop under DA 92/97 as it stands) and the approved pathway of the Bengalla Mine must preclude approval of this application.*<br>*6.6 There are material deficiencies in the EA (including inadequacies in environmental assessments and assessment elements not addressed which are required to be).* | In conclusion:<br>The central concern raised by BMC's submission is that the continued existence of MACH Energy's rail and pipeline infrastructure in an area south of Wybong Road after 2020 is "*wholly incompatible with SSD 5170"* and will be *"reasonably likely to materially interfere with or have a material adverse impact"* upon BMC's mining operations and its development consent (SSD 5170).<br>However, BMC's submission fails to take into account the fact that this interaction between the two mines is already addressed by MACH Energy's existing consent, and in particular by Condition 37 of DA 92/97. In satisfaction of that condition, MACH Energy has undertaken to the Minister for Resources to comply with its relevant obligations under a commercial agreement (to which BMC is a party) known as the Master Cooperation Agreement. The Master Cooperation Agreement governs the potential interactions between the two mines and contains mechanisms to address the potential intersection of MACH Energy's rail and pipeline infrastructure and the operations of the Bengalla Mine. In accordance with its obligations under the terms of this agreement, MACH Energy has already obtained a Pre-Feasibility Study into potentially viable alternative rail infrastructure arrangements and has commenced consultation with the owners of the Bengalla Mine about this.<br>BMC's submission also fails to mention that at all material times leading up to the approval of SSD 5170, BMC and the owners of the Bengalla Mine were aware (having expressly acknowledged these matters in the Bengalla Continuation Project Environmental Impact Statement) that:<br>(a) it was likely that the Mount Pleasant infrastructure would be constructed south of Wybong Road;<br>(b) it was likely that approval would be sought to extend the operations of the Mount Pleasant Mine beyond 2020; and<br>(c) the potential interactions between the Mount Pleasant infrastructure and the operations of the Bengalla Mine would be managed in accordance with the terms of the Master Cooperation Agreement.<br>BMC alleges that in order to address its concerns MACH Energy's modification application must provide for the removal of MACH Energy's infrastructure by a fixed date and BMC must be provided with access across the infrastructure in the period leading up to its removal. However, the imposition of a condition to this effect would be entirely inconsistent with the terms of the Master Cooperation Agreement and would effectively allow BMC and the owners of the Bengalla Mine to walk away from their obligations under that agreement. In circumstances where BMC and the owners of the Bengalla Mine have already obtained a significant commercial benefit under that agreement this would be a grossly unjust result. |

ENCLOSURE 1

REDACTED VERSION OF THE MASTER COOPERATION AGREEMENT

# Bengalla - Mount Pleasant
# Master Cooperation Agreement

Allens Arthur Robinson
Deutsche Bank Place
Corner Hunter and Phillip Streets
Sydney NSW 2000
Australia
Tel 61 2 9230 4000
Fax 61 2 9230 5333
www.aar.com.au



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| | |
|---|---|
| **Date** | 5 MAY 2011 |
| **Parties** | |
| 1. | **Coal & Allied Operations Pty Limited** (ACN 000 023 656) of Level 3, West Tower, 410 Ann Street, Brisbane, Queensland (***Coal & Allied***) |
| 2. | **CNA Bengalla Investments Pty Ltd** (ACN 056 937 172) of Level 3, West Tower, 410 Ann Street, Brisbane, Queensland |
| 3. | **Wesfarmers Bengalla Limited** (ACN 008 744 278) of Level 31, Central Plaza 1, 345 Queen Street (Cnr Creek and Queen Sts), Brisbane, Queensland (***Wesfarmers***) |
| 4. | **Taipower Bengalla Pty Limited** (ACN 075 407 617) of Suite 8, Level 2, 58 Pitt Street, Sydney, New South Wales (***Taipower***) |
| 5. | **Mitsui Bengalla Investment Pty Limited** (ACN 056 823 780) of Level 12, 240 Queen Street, Brisbane, Queensland (***Mitsui***) |
| 6. | **Bengalla Mining Company Pty Limited** (ACN 053 909 470) of Bengalla Mine, Bengalla Road, Muswellbrook, New South Wales (***BMC***) |
| 7. | **CNA Bengalla Pty Ltd** (ACN 003 713 399) of Level 3, West Tower, 410 Ann Street, Brisbane, Queensland (***CNA Bengalla***) |
| **Recitals** | |
| A | The Bengalla Joint Venturers own the Bengalla Mine and BMC operates the Bengalla Mine on behalf of the Bengalla Joint Venturers. CNA Bengalla provides management services to BMC. |
| B | Coal & Allied wishes to develop and operate the Mount Pleasant Mine, which will be adjacent to the Bengalla Mine. |
| C | To facilitate the development of the Mount Pleasant Mine, Coal & Allied wishes to:<br>(a) conduct certain mining activities north of Wybong Road; and<br>(b) either or both of, depending on the options selected by Coal & Allied under clause 6.2:<br>(1) use Bengalla's Rail Loop only or Bengalla's Rail Loop and Bengalla Loading Infrastructure or construct its own rail loop and train loading facilities potentially on land owned by the Bengalla Joint Venturers; and/or<br>(2) construct a conveyor to the relevant rail loading point and a pipeline from the Hunter River potentially over land owned by the Bengalla Joint Venturers. |
| D | The Bengalla Joint Venturers:<br>(a) wish to be able to expand mining operations in a direction west of current operations, including into the AL 13 Area; and<br>(b) propose to divert Dry Creek to the western area of AL 13, potentially from a point commencing in the area of the Mount Pleasant project area. |
| E | The parties have agreed to enter into a series of transactions to allow the above to occur on the terms and conditions set out in this Agreement. |
| F | On or about the date of this Agreement the Bengalla Joint Venturers have entered into a Deed amending the Bengalla Joint Venture Agreement to provide for a change in the scope of the Bengalla Joint Venture Operations and related matters. |





**It is agreed** as follows.

## Part A – Definitions and interpretation

### 1. Definitions and interpretation

**1.1 Definitions**

The following definitions apply unless the context requires otherwise.

[redacted]

***AL 13*** means Assessment Lease 13 dated 20 December 2006, including any renewals, temporal extensions, and amendments thereof and any tenements issued in place thereof or over any part of the area covered by that Assessment Lease. A diagram of AL 13 is set out in Schedule 25.

***AL13 Area*** means the area covered by AL13, which for the avoidance of doubt includes the Specified MLA 100 Area.

[redacted]

***Associated Infrastructure*** means such other infrastructure as may be required for Coal & Allied to operate, maintain and otherwise service:

[redacted]

(c) where Option C applies, the Option C Infrastructure; and

(d) where Option D applies, the Option D Rail Spur,

including, as appropriate having regard to the option which is selected by Coal & Allied:

(e) service roads and paths;

(f) culvert drainage and water management infrastructure including (without limitation) sediment traps, catch drains and water dams;

(g) lighting, power and communication systems;

(h) fire water, wash down water and dust suppression systems and equipment;

(i) pump booster stations and intermediate tanks in connection with the Pipeline;

(j) environmental monitoring equipment or systems as may be required to comply with the conditions of any relevant Authorisations;

(k) temporary facilities including pipelines, access tracks, temporary roads for civil works, topsoil stockpiles and erosion and sedimentation controls; and

(l) fences,

but not including any roads or other infrastructure to permit the haulage of coal by road (with Coal & Allied acknowledging that it is not its intent to use any roads which are built as part of the Associated Infrastructure for the haulage of coal).

***Authorisation*** includes any consent, authorisation, registration, filing, lodgement, permit, agreement, notarisation, certificate, permission, licence, approval, direction, declaration, authority or exemption from, by or with any Authority.

[redacted]





[redacted]

***Bengalla Development Consent*** means the development consent 'DA 211/93' issued to the Bengalla Joint Venturers under the EP Act in relation to the development and operation of the Bengalla Mine.

***Bengalla EPL*** means the environment protection licence number 6538 issued under the POEO Act to BMC in respect of the Bengalla Mine.

[redacted]

***Bengalla Joint Venture*** means the joint venture carried on by the Bengalla Joint Venturers in accordance with the Bengalla Joint Venture Agreement.

***Bengalla Joint Venturers*** means:

(a) while the Bengalla Joint Venture remains on foot, the participants in the Bengalla Joint Venture (being at the date of this Agreement CNA Bengalla Investments Pty Ltd, Wesfarmers Bengalla Limited, Taipower Bengalla Pty Limited and Mitsui Bengalla Investment Pty Limited) collectively unless otherwise indicated; and

(b) if the Bengalla Joint Venture is dissolved or terminated, the party that owns the Bengalla Mine.

***Bengalla Joint Venture Agreement*** means the Bengalla Joint Venture Deed dated 24 June 1993, as amended from time to time.

[redacted]

***Bengalla Loading Infrastructure*** means the train loading conveyor, train load out bin and associated infrastructure owned beneficially by the Bengalla Joint Venturers as described in and indicated in the map in Schedule 18, and all improvements and modifications to those particular facilities from time to time.

[redacted]

***Bengalla Mine*** means the coal mine and related infrastructure, the development and operation of which is the subject of the Bengalla Joint Venture Agreement.

[redacted]





[redacted]

***Coal & Allied Infrastructure*** means:

(a) if Option A or Option B applies, the Coal & Allied Loading Infrastructure, the Conveyor, the Pipeline and the Associated Infrastructure;

(b) if Option C applies, the Option C Infrastructure, the Pipeline and the Associated Infrastructure; and

(c) if Option D applies, the Option D Infrastructure, the Pipeline and the Associated Infrastructure.

[redacted]

[redacted]





***Current Bengalla Tenements*** means the following Mining Leases and Assessment Lease granted under the Mining Act to BMC on behalf of the Bengalla Joint Venturers in respect of the Bengalla Mine:

(a) ML 1450;

(b) ML 1469;

(c) ML 1397;

(d) ML 1592; and

(e) AL13,

including any renewals, temporal extensions, and amendments thereof and any tenements issued in place thereof or over any part of the area covered by these tenements.

***Current or Future Operations*** means, in respect of the Mount Pleasant Mine or the Bengalla Mine (as the case may be) at a particular time:

(a) the current mining, exploration and processing operations and associated activities of the Mount Pleasant Mine or the Bengalla Mine (respectively) at that time and the plant, equipment and infrastructure directly relating to those operations and activities;

(b) the future mining, exploration and processing operations and associated activities of the Mount Pleasant Mine or the Bengalla Mine (respectively) and the plant, equipment and infrastructure directly relating to those operations and activities:

(i) which are intended to be carried out, commenced or constructed within 10 years of that time under a life of mine plan for the Mount Pleasant Mine or the Bengalla Mine (respectively) which has been approved and is in force at time (in the case of the Bengalla Mine, in accordance with the relevant procedures and requirements of the Bengalla Joint Venture Agreement); and

(ii) in respect of which a Mining Lease and development consent under the EP Act are held or have been applied for at that time by Coal & Allied or the Bengalla Joint Venturers (respectively) and, in the case of a development consent which has been applied for, that application has satisfied an "adequacy review" or other preliminary assessment by the relevant Authority; and

(c) the Authorisations held in connection with the operations and activities referred to in paragraph (a) and the Authorisations referred to in paragraph (b)(ii).

***DII*** means the Department of Industry and Investment or such other governmental agency responsible for administering the Mining Act from time to time.

***Disputant, Dispute*** and ***Dispute Notice*** have the meanings given in clause 34.1(a).

[redacted]

[redacted]

***Dry Creek Diversion*** means either the Dry Creek Base Case, the Dry Creek Secondary Case or the Dry Creek Alternative Case, as selected in accordance with clause 8.2.

[redacted]





[redacted]

***Implementation Committee*** means the committee established under clause 4.1.

[redacted]

***Independent Expert*** means either of the Independent Operations Expert, the Independent Financial Expert or the Independent Legal Expert.

[redacted]

***Infrastructure Mining Lease*** means a "mining purposes" Mining Lease or Mining Leases granted under the Mining Act, in accordance with clause 7.3, from the surface to 40 metres

beneath the surface, in respect of the construction, operation and maintenance of the Pipeline and:

(a) where Option A or Option B applies, the Conveyor and the Coal & Allied Loading Infrastructure; and

(b) the Associated Infrastructure.

[redacted]

***Marketable Coal Reserves*** has the meaning set out in clause 39 of the 2004 Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves (JORC Code) issued by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia.

***Mining Act*** means the *Mining Act 1992* (NSW).

***Mining Lease*** and ***ML*** mean a mining lease granted under Part 5 of the Mining Act.

***Minister*** means the Minister responsible for the administration of the Mining Act.

***MLA 100*** means the application for Mining Lease initially made by Coal & Allied under the Mining Act on 21 October 1997 in respect of the Mount Pleasant Mine, as amended and modified.





[redacted]

***Mount Pleasant Development Consent*** means the development consent 'DA 92/97' issued to Coal & Allied under the EP Act in relation to the development and operation of the Mount Pleasant Mine.

[redacted]

***Mount Pleasant Mining Lease*** means the Mining Lease granted to Coal & Allied in December 2010 pursuant to MLA 100 over an area that includes the Specified MLA 100 Area.

[redacted]

***Mount Pleasant Sale Properties*** means Lots 1, 2 and 3 on DP 998477, owned by Coal & Allied and located south of Wybong Road, or such parts of those Lots as continue to be owned by Coal & Allied following completion under the Subdivision and Sale Agreement.

[redacted]

[redacted]

***Option A*** has the meaning given in clause 6.2.

***Option B*** has the meaning given in clause 6.2.

***Option C*** has the meaning given in clause 6.2.

***Option C Easement*** means an easement or easements substantially on the terms set out in the instrument attached as Schedule 13 between the Bengalla Joint Venturers and/or BMC (depending on which of them is the registered proprietor of the relevant land) and Coal & Allied, and benefiting relevant land owned as at the date of this Agreement by Coal & Allied, for the construction, operation and maintenance on and along the Infrastructure Corridor of the Option C Infrastructure and the Associated Infrastructure which relates to the Option C Infrastructure, where Coal & Allied elects to proceed with Option C under clause 6.2 or clause 16.3 (as applicable), to be entered into:

(a) on Implementation where Option C is elected under clause 6.2; and

(b) otherwise, in accordance with clause 16.3,

as amended or replaced in accordance with clause 27.7.

***Option C Infrastructure*** means the infrastructure and facilities selected in accordance with clause 6.4.

***Option C Mining Lease*** means a "mining purposes" Mining Lease or Mining Leases under the Mining Act, from the surface to 40 metres beneath the surface, in respect of the construction, operation and maintenance of the Option C Infrastructure which is granted pursuant to an application made by Coal & Allied under clause 6.4(l).

***Option D*** has the meaning given in clause 6.2(f).

***Option D Easement*** means an easement or easements substantially on the terms set out in the instrument attached as Schedule 15 between the Bengalla Joint Venturers and/or BMC (depending on which of them is the registered proprietor of the relevant land) and Coal & Allied, and benefiting relevant land owned as at the date of this Agreement by Coal & Allied, for the construction, operation and maintenance on and along the Specified MLA 100 Area of the Option D Rail Spur and the Associated Infrastructure which relates to the Option D Rail Spur, to be entered into on Implementation where clause 6.5 applies.

***Option D Infrastructure*** means the infrastructure and facilities notified by Coal & Allied to the Bengalla Joint Venturers under clause 6.5(a).

***Option D Power of Attorney*** means the power of attorney to be granted by Coal & Allied in accordance with clause 11.2(f) and in the form of Schedule 22.

***Option D Rail Spur*** means a rail spur, within the Specified MLA 100 Area, to connect the rail loop to be constructed by Coal & Allied where Option D applies and the main ARTC rail line.





***Pipeline*** means a pipeline to pump water from the Hunter River to the Mount Pleasant Mine.

***Pipeline Easement*** means an easement or easements substantially on the terms set out in the relevant instrument attached as Schedule 12 between the Bengalla Joint Venturers and/or BMC (depending on which of them is the registered proprietor of the relevant land) and Coal & Allied, and benefiting relevant land owned as at the date of this Agreement by Coal & Allied, for the construction, operation and maintenance on and along the Infrastructure Corridor of the Pipeline and the Associated Infrastructure which relates to the Pipeline, to be entered into on Implementation, as amended or replaced in accordance with clause 27.7.

[redacted]

***POEO Act*** means the *Protection of the Environment Operations Act 1997* (NSW).

***Pre-mining*** means, in respect of any land, any activities on or under that land for which a Mining Lease covering the surface of that land is required, excluding the extraction of coal from the land.

***Protocols*** means:

(a) the Construction Protocol;

(b) the Dry Creek Interaction Protocol;

(c) the Nominations and Scheduling Protocol;

(d) the Operating Protocol;

(e) the Maintenance Protocol;

(f) the Coal Remnants Borrow and Loan Protocol;

(g) the Blasting Protocol; and

(h) the Plan of Management.

[redacted]

[redacted]

***Rail Loop*** means the rail track (including the connecting rail spur) and associated infrastructure beneficially owned by the Bengalla Joint Venturers and indicated on the map in Schedule 18.

***Rehabilitation*** means, in respect of an area of land, the works required to rehabilitate that land, as required under the Mining Act or any other applicable Authorisations, in each case to the satisfaction of DII or such other relevant Authority.

[redacted]





[redacted]

***Restricted Permitted Infrastructure Corridor*** means the area of land indicated by the hatched corridor in the map in Schedule 14.

[redacted]

***Specified MLA 100 Area*** means that part of the area covered by MLA 100 and the Mount Pleasant Mining Lease from the surface to 40 metres beneath the surface, which is represented by the hatched area in the diagram contained in Schedule 25, but excluding any area which is transferred, relinquished, sublet or otherwise dealt with, under clause 12.7.

[redacted]

***Unrestricted Permitted Infrastructure Corridor*** means the area of land as indicated in the map in Schedule 14, in which the Bengalla Joint Venturers must consent to Coal & Allied constructing, operating and maintaining the Coal & Allied Infrastructure.

***Unrestricted Permitted Relocation Corridor*** means a corridor shown in the map in Schedule 21 into which the Bengalla Joint Venturers must consent to Coal & Allied relocating infrastructure, as contemplated by clause 27 or 27A, as the case may be.





[redacted]

(iii) Option C – construction of a dedicated Mount Pleasant rail loop, spur, conveyor and loading infrastructure in the Infrastructure Corridor instead of using the Bengalla Loading Infrastructure and/or the Rail Loop pursuant to Option A or Option B.

[redacted]

(ii) [redacted] Option D – construction of an initial dedicated Mount Pleasant rail loop, spur and loading infrastructure in the Specified MLA 100 Area – in which case clause 6.5 will apply.

[redacted]





[redacted]

[redacted]





[redacted]

**6.4 Pre-Implementation steps if Option C applies**

If Coal & Allied elects to proceed with Option C, the following provisions will apply:

**Design and engineering for Option C**

(a) As soon as practicable after Option C is elected, Coal & Allied will provide the Bengalla Joint Venturers and BMC with details and plans of the dedicated conveyor, coal loading infrastructure, rail loop, rail spur line and associated infrastructure which it proposes to construct and operate for the purposes of proceeding with Option C (the ***Proposed Option C Infrastructure***), and the location of that Proposed Option C Infrastructure.

(b) As soon as practicable after provision of the details and plans under paragraph (a), the Bengalla Joint Venturers, BMC and Coal & Allied will proceed with design and engineering of the Proposed Option C Infrastructure in a location or locations nominated by Coal & Allied, including:

(i) steps to be taken in the design and engineering of the works to be done for the Proposed Option C Infrastructure to protect the Bengalla Loading Infrastructure and the Rail Loop from adverse effects resulting from the construction, operation and maintenance of the Proposed Option C Infrastructure;

(ii) steps to be taken in the design and engineering of any modifications to the Rail Loop or the Bengalla Loading Infrastructure to accommodate the Proposed Option C Infrastructure being constructed in the future on, adjacent to or affecting the Bengalla Loading Infrastructure and the Rail Loop; and

(iii) responsibility for the ongoing operation and maintenance of those works and for complying with the Authorisations for those works, for any defects in or rectifications required in relation to those works and for bearing the costs of the matters referred to in this paragraph,

it being agreed that this clause does not deal with any impact that the Dry Creek Diversion may have on the design, engineering or responsibility for obtaining Authorisations for Option C Infrastructure, as that is to be dealt with, where applicable, under clause 8.

**Selection of the Option C Infrastructure and its location**

(c) Coal & Allied and the Bengalla Joint Venturers will engage in good faith co-operative consultation with respect to what will constitute the Option C Infrastructure and where it will be located, provided that nothing in this clause will require the Bengalla Joint Venturers to agree to a location for the Option C Infrastructure which is inconsistent with the principles contained in paragraph (f).

(d) Coal & Allied may select as the Option C Infrastructure any Proposed Option C Infrastructure for which design, engineering and location has been agreed with the Bengalla Joint Venturers in accordance with paragraphs (a) and (b).

(e) If Coal & Allied does not select the Option C Infrastructure in accordance with paragraph (d), Coal & Allied may nominate any dedicated conveyor, coal loading infrastructure, rail loop, rail spur line and associated infrastructure as the Option C Infrastructure, provided that:

(i) the Bengalla Joint Venturers consent to the location of the infrastructure in accordance with paragraph (f); and

(ii) the construction, maintenance and operation of the infrastructure must not materially interfere with or have a materially adverse impact on the Bengalla Loading Infrastructure or the Rail Loop.

(f) For the purposes of paragraphs (c) and (e), the Bengalla Joint Venturers may withhold their consent to a location for the Option C Infrastructure as follows:

(i) the Bengalla Joint Venturers must consent to the Option C Infrastructure being located within the Unrestricted Permitted Infrastructure Corridor;

(ii) the Bengalla Joint Venturers must consent to any part of the Option C Infrastructure being located within the Restricted Permitted Infrastructure Corridor, provided that no infrastructure of the Bengalla Joint Venturers which is located within that area which has to be altered or moved to accommodate a part of the Option C Infrastructure, can be altered or moved without the consent of the Bengalla Joint Venturers (which must not be unreasonably withheld) and any such alteration or move must be carried out at no cost or risk to the Bengalla Joint Venturers;

(iii) to the extent the Option C Infrastructure is to be located within the Initial Restricted Area, the Bengalla Joint Venturers may withhold their consent in their absolute discretion; and

(iv) if the Option C Infrastructure is to be located in any other area or areas within tenements or surface rights held by the Bengalla Joint Venturers, the Bengalla Joint Venturers may only withhold their consent if the construction of the Option C Infrastructure in the proposed location would be reasonably likely to materially interfere with or have a materially adverse impact on the Current or Future Operations at the Bengalla Mine.

(g) For the avoidance of doubt, the consent of the Bengalla Joint Venturers is not required to the extent that the Option C Infrastructure is located in any area where the Bengalla Joint Venturers do not hold tenements or surface rights at the time of the nomination under paragraph (e).

(h) The parties undertake to use reasonable endeavours, subject to paragraph (e), to enable the Option C Infrastructure to be determined as soon as practicable after Option C is elected.





(i) Option C Infrastructure which is constructed pursuant to this clause 6.4 will be subject to potential future relocation in accordance with clause 27.

**Preparation of documents for execution at Implementation – Option C Easement**

(j) Where the Option C Infrastructure has been determined in accordance with this clause 6.4, the Implementation Committee must seek in good faith to finalise the Option C Easement taking account of the nature and agreed location of the Option C Infrastructure, and any other factors which the Implementation Committee considers, at the time, relevant to the terms of the Option C Easement in the context of the land to which it relates.

(k) If the Implementation Committee has not agreed the final form of the Option C Easement by the date three months after the Option C Infrastructure and its location is determined pursuant to this clause 6.4, a Dispute will be taken to exist under clause 34.1 in relation to the final form of the Option C Easement and a Dispute Notice will be taken to have been issued under clause 34.1. If the final form of the Option C Easement is not then agreed in accordance with clause 34.1, the Dispute must be referred to an Independent Expert under clause 35 for resolution. The Independent Expert must draft or re-draft the terms of the Option C Easement to the extent necessary to complete the Option C Easement, but in doing so must not depart from the terms set out in Schedule 13, provided that the Independent Expert must, in drafting the terms of the Option C Easement, take account of the nature and agreed location of the Option C Infrastructure and any other factors which the Independent Expert considers, at the time, relevant to the terms of the Option C Easement in the context of the land to which it relates.

**Authorisations**

(l) Where the Option C Infrastructure has been determined in accordance with this clause 6.4:

(i) Coal & Allied will be responsible for obtaining all Authorisations to construct, operate and maintain the Option C Infrastructure, including as a modification or addition to the Mount Pleasant Development Consent;

(ii) Coal & Allied will also be responsible for obtaining any environment protection licence under the POEO Act or other Authorisations required to enable it to construct, operate and maintain the Option C Infrastructure, including (if Coal & Allied so elects) an Option C Mining Lease;

(iii) to the extent amendments need to be made to the Bengalla Development Consent or the Bengalla EPL as a result the Authorisations referred to in paragraphs (i) and (ii), and those amendments would be reasonably likely to have an adverse impact on Current or Future Operations at the Bengalla Mine, those amendments must be reasonably satisfactory to the Bengalla Joint Venturers;

(iv) to the extent paragraph (iii) applies, if the amendments are not reasonably satisfactory to the Bengalla Joint Venturers (acting reasonably), Coal & Allied must not pursue those amendments, and may elect to proceed with Option D, in which case clause 6.5 will apply;

(v) if paragraph (iii) does not apply, or if it does but the amendments are reasonably satisfactory to the Bengalla Joint Venturers, the Bengalla Joint Venturers will not object to Coal & Allied's Authorisations, will provide any assistance that Coal & Allied reasonably requires in relation to its applications and will consent to any application by Coal & Allied for approval of the Minister to apply for, or will consent to an application for, an Option C Mining Lease or any Authorisations referred to in paragraph (i) and (ii);

(vi) the assistance of the Bengalla Joint Venturers under paragraph (v) will include allowing a survey to be conducted in relation to the area to be covered by the Option C Mining Lease which satisfies the requirements of section 66 of the Mining Act;

(vii) if Coal & Allied elects under paragraph (v) to apply for an Option C Mining Lease:

(A) the Bengalla Joint Venturers must give their irrevocable consent to the grant of the Option C Mining Lease;

(B) if the Option C Mining Lease is granted, or if it is required as a condition of grant of the Option C Mining Lease, the Bengalla Joint Venturers must cancel or relinquish the Current Bengalla Tenements to the extent of the Option C Mining Lease and for this purpose, the Bengalla Joint Venturers must apply to DII to cancel or relinquish the Current Bengalla Tenements to the extent of the Option C Mining Lease, conditional upon the Option C Mining Lease being granted; and

(C) if the Minister does not provide consent to Coal & Allied applying for the Option C Mining Lease, or the Option C Mining Lease is not granted on terms reasonably acceptable to Coal & Allied, or the Option C Mining Lease is not granted within 12 months of Coal & Allied applying for the Minister's consent, the parties will use reasonable endeavours in consultation with DII to pursue other tenement structures in respect of the area which was to be covered by the Option C Mining Lease that enable Coal & Allied to proceed with Option C in accordance with this agreement and that require Coal & Allied to assume all Rehabilitation obligations in connection with its activities on that land (and for this purpose, the parties acknowledge that a sublease will be commercially acceptable, subject to obtaining any required Authorisations and subject to the





sublease requiring Coal & Allied to not cause a breach of the head lease); and

(viii) for the avoidance of doubt, any Authorisations or steps which are applied for or taken under this clause 6.4(l) will not be conditions precedent to Implementation in accordance with clause 11, including any Authorisations which are required to construct, operate and maintain any conveyor forming part of the Option C Infrastructure (whether located within the Restricted Permitted Infrastructure Corridor, the Unrestricted Permitted Infrastructure Corridor, or elsewhere).

**Post-Implementation negotiations**

(m) Following Implementation, the parties shall engage in good faith negotiations with a view to establishing procedures for Coal & Allied to make casual use of the Bengalla Loading Infrastructure and the Rail Loop on terms substantially similar to those that would apply under this Agreement in relation to Casual Use where Option A or Option B applied.

**16.3 Implementation of Option C**

(a) Coal & Allied may at any time proceed with Option C by issuing written notice to the Bengalla Joint Venturers in accordance with clause 6.4(a).

(b) If Coal & Allied gives notice in accordance with paragraph (a):

(i) the parties must comply with the provisions of clause 6.4 (except clauses 6.4(l)(iv) and 6.4(m), if not relevant in the circumstances), provided that:

(A) in clause 6.4(f), if a Relocation Notice has been issued in accordance with clause 27 or clause 27A, paragraphs (i), (ii) and (iii) are replaced with:

'(i) the Bengalla Joint Venturers must consent to the Option C Infrastructure being located within the Unrestricted Permitted Relocation Corridor;

(ii) the Bengalla Joint Venturers must consent to any part of the Option C Infrastructure being located within the Restricted Permitted Relocation Corridor, provided that no infrastructure of the Bengalla Joint Venturers which is located within that area which has to be altered or moved to accommodate a part of the Option C Infrastructure, can be altered or moved without the consent of the Bengalla Joint Venturers (which must not be unreasonably withheld) and any such alteration or move must be carried out at no cost or risk to the Bengalla Joint Venturers; and

(ii) if the Option C Infrastructure is located in any other area or areas within tenements or surface rights held by the Bengalla Joint Venturers, the Bengalla Joint Venturers may only withhold their consent if the construction of the Option C Infrastructure in the proposed location would be reasonably likely to materially interfere with or have a materially adverse impact on the Current or Future Operations at the Bengalla Mine';

(B) in clause 6.4(h) the reference to 'Option C is elected' is to be read as 'the date of the issue of a notice by Coal & Allied under clause 16.3';

(C) in clause 6.4(k) the reference to 'the date three months prior to the Expected Implementation Date' is to be read as 'the date four months after notice is given in accordance with clause 16.3(a)';

(ii) Coal & Allied and the Bengalla Joint Venturers will execute the Option C Easement no later than 1 month after the final form of easement is agreed in accordance with clause 6.4 (as that clause is modified by this clause 16.3(b));

(iii) the parties will agree in good faith any amendments to existing Protocols or the development of any additional Protocols required as a result of Coal &

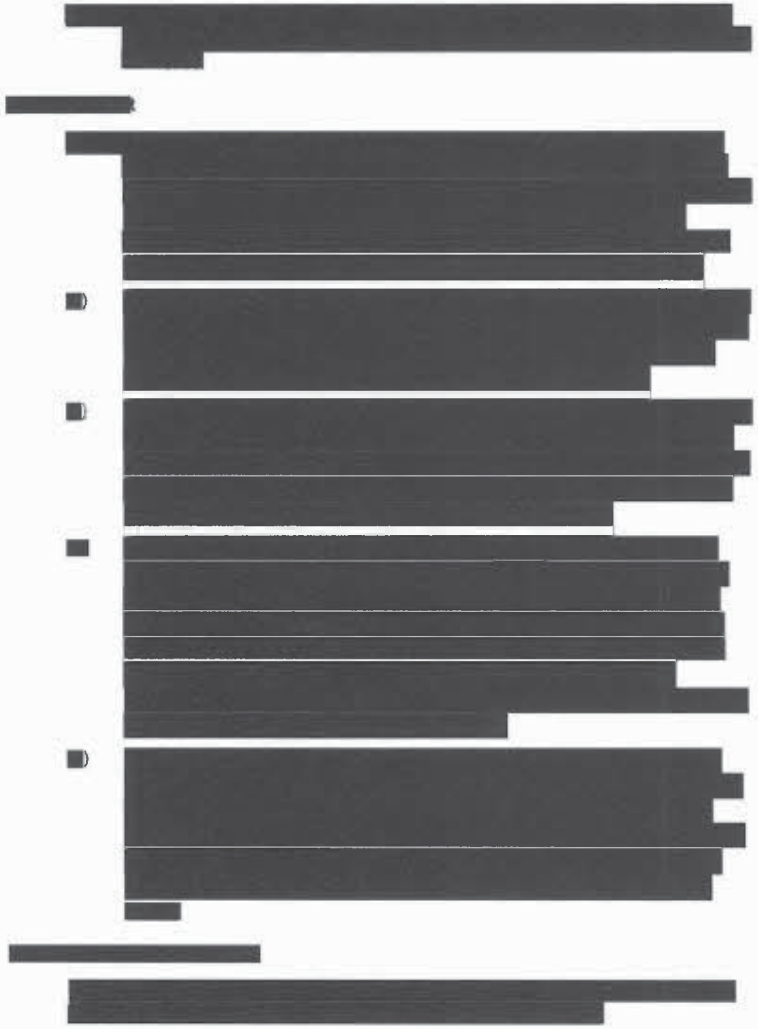




Allied proceeding with Option C (and if these amendments cannot be agreed within 3 months of the notice in clause 16.3(a) being given, a Dispute will be taken to exist in relation to the final form of those amendments and a Dispute Notice will be taken to have been issued under clause 34.1, and if the final form of those amendments are not then agreed in accordance with clause 34.1, they must be referred to an Independent Expert under clause 35 for completion);

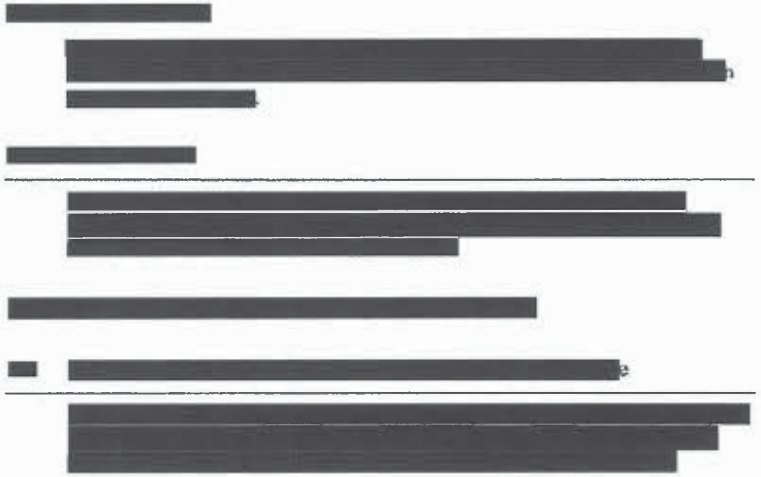
(iv) if, after the Option C Infrastructure is commissioned and operating, Coal & Allied's average use of the Relevant Bengalla Infrastructure over any rolling 15 month period expressed on an annualised basis is less than 85% of the Mount Pleasant Maximum Capacity at that time, the Bengalla Joint Venturers may require that the Mount Pleasant Maximum Annual Capacity be reduced by an amount equal to the amount by which the average use is below 85% of Mount Pleasant Maximum Annual Capacity at that time (notwithstanding that the Mount Pleasant Maximum Annual Capacity may have already been reduced pursuant to this process); and

(v) notwithstanding anything else in this Agreement, if Coal & Allied develops Option C in accordance with this clause 16.3, Option C will have effect in addition to whichever of Option A or Option B applies from time to time, subject to paragraph (b)(iv).









## 27. Relocation of infrastructure (excluding Option D Infrastructure)

**27.1 Application**

This clause 27 applies in relation to:

(a) if Option D applies, the Pipeline and its Associated Infrastructure; and

(b) if Option A, Option B, or Option C applies, the Coal & Allied Infrastructure.

**27.2 Pre-relocation notice**

(a) The Bengalla Joint Venturers may, no earlier than 12 months before they expect to issue a Relocation Notice under clause 27.3, issue a notice to Coal & Allied requiring it to provide an estimate of the cost of relocating any or all of the Coal & Allied Infrastructure other than, where Option C applies, the rail loop, rail spur and loading facilities which comprise the Option C Infrastructure (a ***Pre-relocation Notice***), with the Pre-relocation Notice to specify the particular infrastructure in respect of which Coal & Allied is to provide an estimate of relocation costs (the ***Pre-relocation Infrastructure***).

(b) Within six months of receiving a Pre-relocation Notice, Coal & Allied must provide the Bengalla Joint Venturers with an estimate of the cost of relocating the Pre-relocation Infrastructure in accordance with the requirements of this clause 27.

(c) The estimate referred to in paragraph (b) must distinguish between expenditure that the Bengalla Joint Venturers may potentially be liable to reimburse under

clause 27.10(d) (whose total shall constitute the ***Estimated Recoverable Amount***), and other expenditure.

(d) If the Bengalla Joint Venturers reasonably request, Coal & Allied will provide supporting materials, on a confidential basis, to an independent third party for the purposes of that party auditing or verifying, at the Bengalla Joint Venturers' cost, the estimate referred to in paragraph (b). If there is a material difference in the amount specified by Coal & Allied as the Estimated Recoverable Amount and the amount audited or verified by that third party, Coal & Allied and the Bengalla Joint Venturers will discuss this matter in good faith to seek to reach mutual agreement as to an alternative amount. However, if the parties are not able to reach this mutual agreement then the amount specified by Coal & Allied will remain the Estimated Recoverable Amount.

**27.3 Obligation to relocate**

(a) The Bengalla Joint Venturers may issue a notice to Coal & Allied requiring it to relocate any or all of the Coal & Allied Infrastructure other than, where Option C applies, the rail loop, rail spur and loading facilities which comprise the Option C Infrastructure (a ***Relocation Notice***), with the Relocation Notice to specify the particular infrastructure to be relocated (the ***Relocation Infrastructure***).

(b) A Relocation Notice:

(i) must be issued by the Bengalla Joint Venturers no later than three years and six months before the date (the ***Relocation Date***) on which the Bengalla Joint Venturers reasonably anticipate that they will commence Pre-mining on the land on which the Relocation Infrastructure is located at the time the Relocation Notice is given (the ***Current Infrastructure Location***), based on a life of mine plan for the Bengalla Mine which has been approved and is in force at the time of the Relocation Notice (in accordance with the relevant procedures and requirements of the Bengalla Joint Venture Agreement);

(ii) must be issued by the Bengalla Joint Venturers no sooner than 12 months after, and no later than 18 months after, the issuing of a Pre-relocation Notice in respect of (at least) the Relocation Infrastructure. For the avoidance of doubt, if the Bengalla Joint Venturers do not comply with the time frames contemplated by this paragraph (ii), then they may re-commence this process by serving a new Pre-relocation Notice in accordance with clause 27.2;

(iii) may only be issued if the life of mine plan referred to in paragraph (i) provides:

(A) for mining to occur on any part of the Current Infrastructure Location, and on areas adjacent to the Current Infrastructure





Location following mining through the Current Infrastructure Location, on a continuous basis after the Relocation Date; and

(B) for the amount of Marketable Coal Reserves contained in the Current Infrastructure Location, and in the areas adjacent to the Current Infrastructure Location to be mined at the same time as or following mining through the Current Infrastructure Location, to be not less than 25 million tonnes; and

(iv) may only be issued if the Bengalla Joint Venturers or BMC have obtained a Mining Lease (from 40 metres beneath the surface to depth in respect of the Current Infrastructure Location) covering the area containing the Marketable Coal Reserves as referred to in paragraph (iii)(B).

(c) If a Relocation Notice is issued and complies with the requirements in paragraph (b), Coal & Allied must relocate the Relocation Infrastructure in accordance with this clause 27.

**27.4 Location of relocated infrastructure**

(a) Upon receipt of a Relocation Notice, Coal & Allied must cooperate with the Bengalla Joint Venturers to undertake and consider in good faith and as soon as practicable the results of a relocation study in a form and scope agreed by Coal & Allied and the Bengalla Joint Venturers, each party acting reasonably.

(b) On the completion of the relocation study, the parties must negotiate in good faith a location for the Relocation Infrastructure. The Bengalla Joint Venturers must consent to a location proposed by Coal & Allied if that location lies within the Unrestricted Permitted Relocation Corridor. To the extent the proposed location lies outside the Unrestricted Permitted Relocation Corridor, the Bengalla Joint Venturers may only withhold consent if they can reasonably establish that:

(i) they will, based on a life of mine plan which has been approved and is in force at the time of completion of the relocation study referred to in paragraph (a) (in accordance with the relevant procedures and requirements of the Bengalla Joint Venture Agreement) be mining or procuring mining on the proposed location within 5 years of the Relocation Date; or

(ii) relocation of the Relocation Infrastructure to the proposed location would not be in compliance with existing Authorisations at the time, and Coal & Allied will be unable to procure any necessary amendments to those Authorisations by the date 12 months prior to the Relocation Date.

(c) The land on which the parties agree the Relocation Infrastructure will be located after the relocation shall, for the purposes of this clause 27, be referred to as the ***Relocation Land***.

**27.5 Mining Leases, easements and transfers**

(a) The Bengalla Joint Venturers must consent to Coal & Allied applying for "mining purposes" Mining Leases over the Relocation Land (from surface to 40 metres beneath the surface), and any other Authorisations that Coal & Allied reasonably requires for the purposes of relocation in accordance with this clause 27, and must provide any assistance throughout the application process that Coal & Allied reasonably requires.

(b) Upon the Mining Leases referred to in clause 27.5(a) being granted, the Bengalla Joint Venturers must (or must procure BMC to):

(i) relinquish the mining tenements then held by or on behalf of the Bengalla Joint Venturers over the Relocation Land (from surface to 40 metres beneath the surface); and

(ii) amend the Conveyor Easement, Pipeline Easement and Option C Easement (as applicable in the context of the particular Relocation Infrastructure), or grant new easements on similar terms, so that the Relocation Land is covered by those easements (to the extent required by each relevant easement).

(c) If the steps provided for under paragraphs (a) and (b) cannot be achieved due to factors beyond the control of the parties, the parties agree to take such other steps, following good faith negotiations, as they consider necessary or desirable to give effect to the relocation contemplated by this clause 27 (and for this purpose, the parties acknowledge that a sublease will be commercially acceptable, subject to obtaining any required Authorisations, and subject to the sublease requiring Coal & Allied to not cause a breach of the head lease).

**27.6 Time for relocation**

(a) Coal & Allied is not obliged to commence relocation of the Relocation Infrastructure until the later of:

(i) the Mining Leases and other Authorisations referred to in clause 27.5(a) and the easements referred to in clause 27.5(b) being granted, or such other steps as agreed in clause 27.5(c) being completed; and

(ii) six months after the location of the Relocation Land is agreed in accordance with clause 27.4.

(b) Subject to paragraph (a), Coal & Allied must complete the relocation of the Relocation Infrastructure no later than six months before the Relocation Date (or such other deadline date to be agreed by the parties).

(c) For the purposes of clauses 27.6(b) and 27.7, completion of the relocation of the Relocation Infrastructure will mean the decommissioning of the Relocation Infrastructure and its removal from the Current Infrastructure Location and the commissioning of the Relocation Infrastructure (or replacement items of





infrastructure) on the Relocation Land. It is acknowledged that, upon completion of the relocation of the Relocation Infrastructure and completion of the transfers and relinquishments referred to in clause 27.7, the Bengalla Joint Venturers will assume responsibility for all Rehabilitation obligations in respect of the Current Infrastructure Location.

**27.7 Obligations on completion of relocation**

Upon completion of the relocation of the Relocation Infrastructure:

(a) Coal & Allied and the Bengalla Joint Venturers will amend the Conveyor Easement, Pipeline Easement and Option C Easement (as applicable in the context of the particular Relocation Infrastructure), or cancel or relinquish those easements and adopt in their place the easements granted pursuant to clause 27.5(b)(ii), such that the Current Infrastructure Location is no longer covered by any such easement and the Relocation Land is;

(b) Coal & Allied must provide the Bengalla Joint Venturers with an itemised account, in reasonable detail and with appropriate supporting materials, of all expenditure incurred in relocating the Relocation Infrastructure in accordance with this clause 27, distinguishing between expenditure that the Bengalla Joint Venturers may potentially be liable to reimburse under clause 27.10(d) (whose total shall constitute the ***Recoverable Amount***), and other expenditure; and

(c) at the election of the Bengalla Joint Venturers, Coal & Allied will either:

(i) relinquish all Infrastructure Mining Leases that it holds in respect of the Current Infrastructure Location, and not object to, and provide all necessary consents and good faith assistance required by the Bengalla Joint Venturers in connection with, an application by the Bengalla Joint Venturers for a Mining Lease over the Current Infrastructure Location; or

(ii) apply to the Minister under section 120 of the Mining Act for the transfer of the Infrastructure Mining Leases to the Bengalla Joint Venturers, in which case the Bengalla Joint Venturers will supply all consents, information and materials required to be provided by them as transferees and must otherwise provide any assistance which Coal & Allied reasonably requires in relation to the application and the steps required to effect the transfer, and Coal & Allied will co-operate with DII in conjunction with the Bengalla Joint Venturers to settle the terms of the Mining Lease to be issued as a result of the transfer; and

(d) if the Minister does not provide consent to the Bengalla Joint Venturers applying for a Mining Lease or transfer of a Mining Lease as contemplated by paragraph (c), or that Mining Lease is not granted or transferred on terms reasonably acceptable to the Bengalla Joint Venturers, the parties will use reasonable endeavours in consultation with DII to pursue other tenement structures in respect of the area which was to be covered by that Mining Lease that enable the Bengalla Joint

Venturers to proceed with mining over the Current Infrastructure Location and that require the Bengalla Joint Venturers to assume all Rehabilitation obligations in connection with its activities on that land (and for this purpose, the parties acknowledge that a sublease will be commercially acceptable, subject to obtaining any required Authorisations and subject to the sublease requiring the Bengalla Joint Venturers to not cause a breach of the head lease).

**27.8 Cost of relocation**

(a) Subject to paragraph (b) and clause 27.10, Coal & Allied will bear the cost of any relocation under this clause 27.

(b) To the extent any relocation requires the Bengalla Joint Venturers to modify the Dry Creek diversion works undertaken pursuant to clause 8, the cost of those modifications is to be borne by the Bengalla Joint Venturers.

**27.9 Rehabilitation of land**

Unless the parties otherwise agree not later than 12 months before the Bengalla Joint Venturers expect to cease mining in the area (as notified by them to Coal & Allied no later than 15 months before that time), the Bengalla Joint Venturers are obliged to rehabilitate the land comprising the Unrestricted Permitted Relocation Corridor, after the Bengalla Joint Venturers have ceased mining there, to a level and standard and within a timeframe sufficient to allow Coal & Allied to relocate any Relocation Infrastructure to that rehabilitated land as required by this clause.

**27.10 Conditional reimbursement obligation**

(a) The Bengalla Joint Venturers must reimburse Coal & Allied for the cost of relocating the Relocation Infrastructure if:

(i) the Bengalla Joint Venturers have not commenced Pre-mining within the Current Infrastructure Location within 12 months after the later of the completion of relocation and the Relocation Date, it being acknowledged that the Bengalla Joint Venturers may commence Pre-mining without a Mining Lease having been granted to them (provided that, if Coal & Allied still holds the Infrastructure Mining Lease over the Current Infrastructure Location at that time, the Bengalla Joint Venturers and BMC must comply with Coal & Allied's safety and other procedures as notified by Coal & Allied in conducting that Pre-mining, and must ensure that the Pre-mining does not cause any breach or non-compliance with the Infrastructure Mining Lease); or

(ii) the total amount of product coal produced by the Bengalla Joint Venturers from mining at the Current Infrastructure Location, and the areas adjacent to the Current Infrastructure Location mined at the same time as or following mining through the Current Infrastructure Location, is less than 25





million tonnes by the date seven years after the commencement of Pre-mining at the Current Infrastructure Location.

(b) The time periods referred to in paragraph (a) will be extended by the duration of any relevant Force Majeure (as defined in clause 33).

(c) The Bengalla Joint Venturers must notify Coal & Allied when they commence Pre-mining at the Current Infrastructure Location, and if reasonably requested by Coal & Allied from time to time, the Bengalla Joint Venturers and BMC will allow an independent auditor to audit its records to determine whether the requirements of paragraph (a)(i) or paragraph (a)(ii) have been satisfied.

(d) If Coal & Allied is entitled to reimbursement under paragraph (a), it may issue a notice of demand to the Bengalla Joint Venturers stipulating the total amount of reimbursement (the ***Reimbursement Amount***) in accordance with the following principles:

(i) subject to paragraphs (ii) and (iii), the Bengalla Joint Venturers must reimburse Coal & Allied's actual costs of relocation, as notified by Coal & Allied under clause 27.7(b) (and as adjusted to reflect the movement in CPI between the dates of actual expenditure and the date Coal & Allied makes its demand on the Bengalla Joint Venturers);

(ii) the Bengalla Joint Venturers are not required to reimburse Coal & Allied for any expenditure to the extent it is attributable to the capacity of the Relocation Infrastructure (either before or after the relocation) exceeding 8.4 mtpa; and

(iii) the Bengalla Joint Venturers are not required to reimburse Coal & Allied for any unreasonable expenditure,

and the Bengalla Joint Venturers must reimburse Coal & Allied the Reimbursement Amount within 30 days, in accordance with clause 1.4(a).

(e) Within 30 days of the later of:

(i) issuing the Relocation Notice; and

(ii) Coal & Allied obtaining all Mining Leases, easements and other Authorisations it requires to relocate the Relocation Infrastructure as required by this clause,

the Bengalla Joint Venturers must each provide a bank guarantee in favour of Coal & Allied for the reimbursement obligations under this clause 27.10, in accordance with the following provisions:

(iii) the bank guarantees must initially total the Estimated Recoverable Amount as notified by Coal & Allied under clause 27.2(b), and each Bengalla Joint Venturer's bank guarantee must be for a percentage of that total equivalent to that Bengalla Joint Venturer's percentage interest in the Bengalla Joint Venture;

(iv) following completion of the relocation, each Bengalla Joint Venturer must provide replacement or additional bank guarantees, such that the total of the bank guarantees is the Recoverable Amount as notified by Coal & Allied under clause 27.7(b), and each Bengalla Joint Venturer's bank guarantee is for a percentage of that total equivalent to that Bengalla Joint Venturer's percentage interest in the Bengalla Joint Venture;

(v) on each anniversary of the issue of the Relocation Notice, the Bengalla Joint Venturers must provide replacement or additional bank guarantees such that the total amount guaranteed reflects the movement in CPI between the issue of the Relocation Notice (or the previous anniversary of the issue date, as the case may be) and the anniversary date;

(vi) if, following action by a Bengalla Joint Venturer under paragraphs (iv) or (v), the total of the bank guarantees provided by that Bengalla Joint Venturer exceeds that entity's reimbursement obligation, Coal & Allied must release and return (or partially release and return) such bank guarantees (or parts of them) provided by that Bengalla Joint Venturer (to that Bengalla Joint Venturer or to the person nominated by that Bengalla Joint Venturer) such that the total amount of the bank guarantees provided by that Bengalla Joint Venturer matches that entity's reimbursement obligation;

(vii) subject to paragraph (viii), Coal & Allied may draw on a bank guarantee to the extent the Bengalla Joint Venturer that provided the guarantee has not met its reimbursement obligations under paragraph (d);

(viii) Coal & Allied must not draw on a bank guarantee if the matter of reimbursement is the subject of a bona-fide Dispute between Coal & Allied and the Bengalla Joint Venturers;

(ix) if a Bengalla Joint Venturer has satisfied its reimbursement obligation to Coal & Allied under this clause 27.10 to Coal & Allied's reasonable satisfaction, or if sufficient time has passed or sufficient coal has been mined such that the conditions for reimbursement in paragraph (a) are incapable of being satisfied, Coal & Allied must release and return all bank guarantees provided by that Bengalla Joint Venturer (to that Bengalla Joint Venturer or to the person nominated by that Bengalla Joint Venturer); and

(x) each bank guarantee provided from time to time under this paragraph (e) must be an irrevocable and unconditional "demand" guarantee on terms reasonably acceptable to Coal & Allied, and must be issued by a bank with, or a local branch of a bank with, a Standard & Poor's Corporation long term debt rating of A or better, or a Moody's Investor Service, Inc long term debt rating of A2 or better.





## 27A Relocation of Option D Infrastructure

### 27A.1 Application

This clause 27A applies in relation to the Option D Infrastructure if Option D applies.

### 27A.1A Pre-relocation notice

(a) The Bengalla Joint Venturers may, no earlier than 12 months before they expect to issue a Relocation Notice under clause 27A.2, issue a notice to Coal & Allied requiring it to provide an estimate of the cost of removing the Option D Infrastructure and implementing Option C (a ***Pre-relocation Notice***).

(b) Within six months of receiving a Pre-relocation Notice, Coal & Allied must provide the Bengalla Joint Venturers with an estimate of the cost of removing the Option D Infrastructure and implementing Option C in accordance with the requirements of this clause 27A.

(c) The estimate referred to in paragraph (b) must distinguish between expenditure that the Bengalla Joint Venturers may potentially be liable to reimburse under clause 27A.9(d) (whose total shall constitute the ***Estimated Recoverable Amount***), and other expenditure.

(d) If the Bengalla Joint Venturers reasonably request, Coal & Allied will provide supporting materials, on a confidential basis, to an independent third party for the purposes of that party auditing or verifying, at the Bengalla Joint Venturers' cost, the estimate referred to in paragraph (b). If there is a material difference in the amount specified by Coal & Allied as the Estimated Recoverable Amount and the amount audited or verified by that third party Coal & Allied and the Bengalla Joint Venturers will discuss this matter in good faith to seek to reach mutual agreement as to an alternative amount. However, if the parties are not able to reach this mutual agreement then the amount specified by Coal & Allied will remain the Estimated Recoverable Amount.

(e) Following the issue of a Pre-relocation Notice, Coal & Allied must, in a timely and reasonable manner, take all steps necessary for the application of all relevant Authorisations to facilitate the implementation of Option C under clause 16.3 (regardless of whether a Relocation Notice is subsequently issued). Coal & Allied must keep the Bengalla Joint Venturers reasonably informed of the progress of such applications.

### 27A.2 Obligation to relocate

(a) The Bengalla Joint Venturers may issue a notice to Coal & Allied requiring it to remove the Option D Infrastructure and implement Option C (a ***Relocation Notice***).

(b) A Relocation Notice:

(i) must be issued by the Bengalla Joint Venturers no later than three years and six months before the date (the ***Relocation Date***) on which the Bengalla Joint Venturers reasonably anticipate that they will commence Pre-mining on the Specified MLA 100 Area, based on a life of mine plan for the Bengalla Mine which has been approved and is in force at the time of the Relocation Notice (in accordance with the relevant procedures and requirements of the Bengalla Joint Venture Agreement);

(ii) must be issued by the Bengalla Joint Venturers no sooner than 12 months after, and no later than 18 months after, the issuing of a Pre-relocation Notice. For the avoidance of doubt, if the Bengalla Joint Venturers do not comply with the time frames contemplated by this paragraph (ii), then they may re-commence this process by serving a new Pre-relocation Notice in accordance with clause 27A.1A;

(iii) may only be issued if the life of mine plan referred to in paragraph (i) provides:

(A) for mining to occur on any part of the Specified MLA 100 Area on a continuous basis after the Relocation Date; and

(B) for the amount of Marketable Coal Reserves contained in the AL 13 Area to be not less than 25 million tonnes; and

(iv) may only be issued if the Bengalla Joint Venturers or BMC have obtained a Mining Lease in respect of AL 13 that together with the Mining Lease over the Specified MLA 100 Area as contemplated in clause 27A.4, will contain the Marketable Coal Reserves as referred to in paragraph (iii)(B).

(c) If a Relocation Notice is issued and complies with the requirements of paragraph (b), Coal & Allied must remove the Option D Infrastructure and implement Option C in accordance with clause 16.3, and for these purposes Coal & Allied will be deemed to have given notice under clause 16.3(a).

**27A.3 Time for relocation**

(a) Coal & Allied is not obliged to remove the Option D Infrastructure or implement Option C until it obtains all Mining Leases, easements or other Authorisations as are required for it to proceed with the implementation of Option C, and the Bengalla Joint Venturers must provide any assistance that Coal & Allied reasonably requires in order to obtain those Mining Leases, easements or other Authorisations, including granting Coal & Allied the Option C Easement.

(b) Subject to paragraph (a), Coal & Allied must remove the Option D Infrastructure and complete the implementation of Option C no later than six months before the Relocation Date (or such other deadline date to be agreed by the parties). Coal & Allied must serve written notice on the Bengalla Joint Venturers of the removal and





implementation (a ***Notice of Completion and Relocation***) as soon as reasonably practicable after the removal and implementation has completed.

(c) For the purposes of clauses 27A.3(b) and 27A.4, removal of the Option D Infrastructure and completion of the implementation of Option C will mean the decommissioning of the Option D Infrastructure and its removal from the Specified MLA 100 Area and the commissioning of the Option C Infrastructure pursuant to clause 16.3. It is acknowledged that, upon completion of the implementation of Option C, the service of the Notice of Completion of Relocation and completion of the transfers and relinquishments referred to in clause 27A.4 , the Bengalla Joint Venturers will assume responsibility for all Rehabilitation obligations in respect of the Specified MLA 100 Area.

**27A.4 Obligations on completion of relocation**

Subject to clause 27A.5, upon service of the Notice of Completion of Relocation:

(a) Coal & Allied will relinquish the Option D Easement;

(b) Coal & Allied will transfer to the Bengalla Joint Venturers all Mount Pleasant Sale Properties that are held by Coal & Allied at the time;

(c) Coal & Allied must provide the Bengalla Joint Venturers with an itemised account, in reasonable detail and with appropriate supporting materials, of all expenditure incurred in removing the Option D Infrastructure and implementing Option C in accordance with this clause 27A, distinguishing between expenditure that the Bengalla Joint Venturers may potentially be liable to reimburse under clause 27A.9(d) (whose total shall constitute the ***Recoverable Amount***), and other expenditure;

(d) at the election of the Bengalla Joint Venturers, Coal & Allied will either:

(i) relinquish that part of the Mount Pleasant Mining Lease within the Specified MLA 100 Area, and provide all necessary consents and good faith assistance required by the Bengalla Joint Venturers, in connection with an application by the Bengalla Joint Venturers for a Mining Lease over the Specified MLA 100 Area; or

(ii) apply to the Minister under section 120 of the Mining Act for the part transfer of the Mount Pleasant Mining Lease to the Bengalla Joint Venturers in respect of the Specified MLA 100 Area, in which case the Bengalla Joint Venturers will supply all consents, information and materials required to be provided by them as transferees and must otherwise provide any assistance which Coal & Allied reasonably requires in relation to the application and the steps required to effect the transfer, and Coal & Allied will co-operate with DII in conjunction with the Bengalla Joint Venturers to settle the terms of the Mining Lease to be issued as a result of the transfer;

(e) if the Minister does not provide consent to the Bengalla Joint Venturers applying for a Mining Lease or transfer of a Mining Lease as contemplated by paragraph (d), or

that Mining Lease is not granted or transferred on terms reasonably acceptable to the Bengalla Joint Venturers, the parties will use reasonable endeavours in consultation with DII to pursue other tenement structures in respect of the area which was to be covered by that Mining Lease that enable the Bengalla Joint Venturers to proceed with mining over the AL13 Area and that require the Bengalla Joint Venturers to assume all Rehabilitation obligations in connection with its activities on that land (and for this purpose, the parties acknowledge that a sublease will be commercially acceptable, subject to obtaining any required Authorisations and subject to the sublease requiring the Bengalla Joint Venturers to not cause a breach of the head lease); and

(f) Coal & Allied and the Bengalla Joint Venturers will terminate the Option D Power of Attorney.

**27A.5 Transfer procedures**

(a) The transfers referred to in clause 27A.4(d)(ii) will take effect only upon the Bengalla Joint Venturers obtaining all Authorisations which they require in order to give effect to those transfers. Coal & Allied will not object to, and will provide all necessary consents and good faith assistance required by the Bengalla Joint Venturers in connection with, the Bengalla Joint Venturers obtaining those Authorisations.

(c) The transfer of the Mount Pleasant Sale Properties referred to in clause 27A.4(b) will be in the form of the Land Sale Agreements – Mount Pleasant Sale Properties, with the purchase prices to be determined in accordance with clause 9.2 as though references in clause 9.2 to "Implementation" and "the Expected Implementation Date" were references to the Relocation Date and the references to the "Mount Pleasant Sale Properties" were references to the Mount Pleasant Sale Properties referred to in clause 27A.4(b).

**27A.6 Cost of relocation**

(a) Subject to paragraph (b) and clause 27A.9, Coal & Allied will bear the cost of removing the Option D Infrastructure and implementing Option C as required by this clause 27A.

(b) To the extent that removing the Option D Infrastructure or implementing Option C requires the Bengalla Joint Venturers to modify the Dry Creek diversion works undertaken pursuant to clause 8, the cost of those modifications is to be borne by the Bengalla Joint Venturers.

**27A.7 Rehabilitation of land**

Unless the parties otherwise agree not later than 12 months before the Bengalla Joint Venturers expect to cease mining in the area (as notified by them to Coal & Allied no later than 15 months before that time), the Bengalla Joint Venturers are obliged to rehabilitate the land comprising the Unrestricted Permitted Relocation Corridor, after the Bengalla Joint





Venturers have ceased mining there, to a level and standard and within a timeframe sufficient to allow Coal & Allied to implement Option C over that rehabilitated land as required by this clause 27A and as permitted by clause 16.3.

**27A.8 Relocation by the Bengalla Joint Venturers**

(a) If Coal & Allied fails to remove the Option D Infrastructure as required by this clause 27A, then in its own right under this Agreement and/or as the attorney of Coal & Allied under the Option D Power of Attorney, the Bengalla Joint Venturers may do all things required to remove the Option D Infrastructure on behalf of Coal & Allied.

(b) All costs incurred by the Bengalla Joint Venturers under this clause 27A.8 will be due as a debt, due and payable by Coal & Allied to the Bengalla Joint Venturers.

**27A.9 Conditional reimbursement obligation**

(a) The Bengalla Joint Venturers must reimburse Coal & Allied for the cost of relocating the Relocation Infrastructure if:

(i) the Bengalla Joint Venturers have not commenced Pre-mining within the Specified MLA 100 Area within 12 months after the later of the completion of relocation and the Relocation Date, it being acknowledged that Bengalla Joint Venturers may commence Pre-mining without a Mining Lease having been granted to them (provided that, if Coal & Allied still holds Mining Leases over the Specified MLA 100 Area at that time, the Bengalla Joint Venturers and BMC must comply with Coal & Allied's safety and other procedures as notified by Coal & Allied in conducting that Pre-mining, and must ensure that the Pre-mining does not cause any breach or non-compliance with those Mining Leases); or

(ii) the total amount of product coal produced by the Bengalla Joint Venturers from mining the Specified MLA 100 Area, and the areas adjacent to the Specified MLA 100 Area mined at the same time as or following mining through the Specified MLA 100 Area (as well as that part of the AL 13 Area west of the Specified MLA 100 Area), is less than 25 million tonnes by the date seven years after the commencement of Pre-mining in the Specified MLA 100 Area.

(b) The time periods referred to in paragraph (a) will be extended by the duration of any relevant Force Majeure (as defined in clause 33).

(c) The Bengalla Joint Venturers must notify Coal & Allied when they commence Pre-mining at the Specified MLA 100 Area, and if reasonably requested by Coal & Allied from time to time, the Bengalla Joint Venturers and BMC will allow an independent auditor, on a confidential basis, to audit its records to determine whether the requirements of paragraph (a)(i) or paragraph (a)(ii) have been satisfied.

(d) If Coal & Allied is entitled to reimbursement under paragraph (a), it may issue a notice of demand to the Bengalla Joint Venturers stipulating the total amount of reimbursement (the ***Reimbursement Amount***) in accordance with the following principles:

(i) subject to paragraphs (ii) and (iii), the Bengalla Joint Venturers must reimburse Coal & Allied's actual costs of relocation, as notified by Coal & Allied under clause 27A.4(c) (and as adjusted to reflect the movement in CPI between the dates of actual expenditure and the date Coal & Allied makes its demand on the Bengalla Joint Venturers);

(ii) the Bengalla Joint Venturers are not required to reimburse Coal & Allied for any expenditure to the extent it is attributable to the capacity of the Relocation Infrastructure (either before or after the relocation) exceeding 8.4 mtpa; and

(iii) the Bengalla Joint Venturers are not required to reimburse Coal & Allied for any unreasonable expenditure.

(e) If the Bengalla Joint Venturers reasonably request within 45 days after the notice of demand, Coal & Allied will provide supporting materials, on a confidential basis, to an independent third party for the purposes of that party auditing or verifying, at the Bengalla Joint Venturers' cost, that the Reimbursement Amount notified by Coal & Allied complies with the principles in paragraph (d). If the result of that verification or audit is materially different from the amount notified by Coal & Allied, then the quantum of the Reimbursement Amount will be determined in accordance with clauses 34 and 35.

(f) The Bengalla Joint Venturers must reimburse Coal & Allied the Reimbursement Amount (as notified or determined) within 30 days of the later of the notice of demand, the auditor's report, and the determination by the Independent Expert (as the case may be), in accordance with clause 1.4(a). If the Bengalla Joint Venturers have requested that the Reimbursement Amount be audited in accordance with paragraph (e), the Reimbursement Amount (as notified or determined) must be adjusted to reflect the movement in CPI (if any) between the date of that referral and the date of the auditor's report, or (if the matter is referred to an Independent Expert) the date of the Independent Expert's determination.

(g) Within 30 days of the later of:

(i) issuing the Relocation Notice; and

(ii) Coal & Allied obtaining all Authorisations it requires for the Relocation, including all Mining Leases, easements or other Authorisations as are required for it to proceed with the implementation of Option C,





the Bengalla Joint Venturers must each provide a bank guarantee in favour of Coal & Allied for the reimbursement obligations under this clause 27A.9, in accordance with the following provisions:

(iii) the bank guarantees must initially total the Estimated Recoverable Amount as notified by Coal & Allied under clause 27A.1A(b), and each Bengalla Joint Venturer's bank guarantee must be for a percentage of that total equivalent to that Bengalla Joint Venturer's percentage interest in the Bengalla Joint Venture;

(iv) following completion of the relocation, each Bengalla Joint Venturer must provide replacement or additional bank guarantees, such that the total of the bank guarantees is the Recoverable Amount as notified by Coal & Allied under clause 27A.4(c), and each Bengalla Joint Venturer's bank guarantee is for a percentage of that total equivalent to that Bengalla Joint Venturer's percentage interest in the Bengalla Joint Venture;

(v) on each anniversary of the issue of the Relocation Notice, the Bengalla Joint Venturers must provide replacement or additional bank guarantees such that the total amount guaranteed reflects the movement in CPI between the issue of the Relocation Notice (or the previous anniversary of the issue date, as the case may be) and the anniversary date;

(vi) if, following action by a Bengalla Joint Venturer under paragraphs (iv) or (v), the total of the bank guarantees provided by that Bengalla Joint Venturer exceeds that entity's reimbursement obligation, Coal & Allied must release and return (or partially release and return) such bank guarantees (or parts of them) provided by that Bengalla Joint Venturer (to that Bengalla Joint Venturer or to the person nominated by that Bengalla Joint Venturer) such that the total amount of the bank guarantees provided by that Bengalla Joint Venturer matches that entity's reimbursement obligation;

(vii) subject to paragraph (viii), Coal & Allied may draw on a bank guarantee to the extent the Bengalla Joint Venturer that provided the guarantee has not met its reimbursement obligations under paragraph (f), but this will not limit Coal & Allied's right to receive payment of any balance from that Bengalla Joint Venturer in the event the guarantee is insufficient;

(viii) Coal & Allied must not draw on a bank guarantee if the matter of reimbursement is the subject of a bona-fide Dispute between Coal & Allied and the Bengalla Joint Venturers;

(ix) if a Bengalla Joint Venturer has satisfied its reimbursement obligation to Coal & Allied under this clause 27A.9 to Coal & Allied's reasonable satisfaction, or if sufficient time has passed or sufficient coal has been mined such that the conditions for reimbursement in paragraph (a) are incapable of being satisfied, Coal & Allied must release and return all bank

guarantees provided by that Bengalla Joint Venturer (to that Bengalla Joint Venturer or to the person nominated by that Bengalla Joint Venturer); and

(x) each bank guarantee provided from time to time under this paragraph (g) must be an irrevocable and unconditional "demand" guarantee on terms reasonably acceptable to Coal & Allied, and must be issued by a bank with, or a local branch of a bank with, a Standard & Poor's Corporation long term debt rating of A or better, or a Moody's Investor Service, Inc long term debt rating of A2 or better.

## 34. Dispute resolution

**34.1 Negotiation**

(a) If there is a dispute or difference (a ***Dispute***) between Coal & Allied and the Bengalla Joint Venturers (each a ***Disputant***) arising out of or in connection with this Agreement, either Disputant may issue a notice to the other (a ***Dispute Notice***) requiring the Disputants to use their best efforts acting in good faith to resolve the Dispute within 15 Business Days of receipt of the Dispute Notice (the ***Initial Period***).

(b) If the Disputants are unable to resolve the Dispute within the Initial Period, each Disputant may refer the Dispute to the respective Chief Executive Officers (or their nominees) of the Disputants, who must use their best efforts acting in good faith to resolve the Dispute within 15 Business Days after the referral to them.

(c) Subject to clause 5.3 and the other provisions of this Agreement which provide that a Dispute will be taken to exist if the final form of a Contemporaneous Interaction Document is not agreed by a particular date, a party cannot claim a Dispute has arisen in relation to the negotiation of a Contemporaneous Interaction Document until 6 months after commencing negotiations for the relevant Contemporaneous Interaction Document.

**34.2 Certain matters may be referred to Independent Expert**

If a Dispute is listed in clause 35.1 and:

(a) is not resolved negotiation pursuant to clause 34.1(a) and is not referred to the Chief Executive Officers of the Disputants within 5 Business Days after the end of the Initial Period; or

(b) is not resolved by negotiation pursuant to clause 34.1(b),

then that Dispute may be referred to an Independent Expert in accordance with clause 35.1.

**34.3 Court proceedings and other relief**

A party may not start court proceedings in relation to a Dispute until it has exhausted the procedures in this clause, and where relevant clause 35, unless the party seeks injunctive or other interlocutory relief.





## 35. Independent Expert

**35.1 Application**

This clause 35 applies to Disputes relating to or arising from the Nominations and Scheduling Protocol or the following clauses of this Agreement, which may be referred to the Independent Operations Expert, or the Independent Expert indicated in the following table, respectively. Any other Dispute must be dealt with solely in accordance with clause 34.

| Clause | Relevant Independent Expert |
|---|---|
| 1.1 (definition of CPI only) | Independent Financial Expert |
| 3.8(c) – Suspension Period access arrangements | Independent Legal Expert |
| 5.3 – Development of Protocols | Independent Operations Expert |
| 6.3(b) – Definition of 'Relevant Bengalla Infrastructure' and 'Bengalla Infrastructure Land' | Independent Operations Expert |
| 6.3(d) – Charge components | Independent Financial Expert |
| 6.3(g) – Bengalla Infrastructure Easement | Independent Legal Expert |
| 6.4(k) – Option C Easement | Independent Legal Expert |
| 6.5(d) – Option D Easement | Independent Legal Expert |
| 6.5(g) – Option D access arrangements | Independent Legal Expert |
| 7.4(b) – Conveyor Easement / Pipeline Easement | Independent Legal Expert |
| 8.2(h) – Dry Creek Diversion Easement | Independent Legal Expert |
| 14.5 – Bengalla Loading Infrastructure usage | Independent Operations Expert |
| 16.3(b)(iii) – Option C Protocols | Independent Operations Expert |
| 17.2(d) – Remedial actions to ensure annual capacity | Independent Operations Expert |
| 20.2(b)(iii), 24.3(d) – Cure Plan | Independent Operations Expert |
| 24.10(e) – Step-out | Independent Operations Expert |
| 27.10(d), 27A.9(e) – Assessment of relocation costs | Independent Operations Expert |
| 28.2 – Protocol amendments | Independent Operations Expert |
| 30.4(b) – Valuation – Closure of Bengalla Mine | Independent Financial Expert |

**35.2 Appointment**

(a) An Independent Financial Expert, Independent Operations Expert, and Independent Legal Expert who each satisfy the Requirements must each be appointed by the parties from time to time, and the Initial Independent Experts must

be appointed by agreement between the parties as soon as practicable after (or before if otherwise agreed) a Dispute relevant to the appropriate Independent Expert arises. An Independent Expert may be removed by the parties by agreement and must be removed if they cease to satisfy the Requirements.

(b) Where a Dispute has been referred to an Independent Expert, if the relevant Independent Expert has not already been appointed in accordance with clause 35.2(a) then the Disputants will endeavour to agree on the selection of the Independent Expert within 7 Business Days after the date of the Dispute Notice. If the Disputants cannot reach agreement within that period then, upon the application of any Disputant, the Independent Expert will be appointed by the President, for the time being, of the Relevant Body (or their delegate) and, for that purpose, any Disputant may submit a request for the appointment of the Independent Expert to the President, for the time being, of the Relevant Body.

(c) The application referred to in clause 35.2(b) must be in writing, accompanied by a copy of this Agreement or other evidence of the agreement of the Disputants that the provisions of clause 35 should apply and a copy of the Dispute Notice. The application will request that the President, for the time being, of the Relevant Body (or their delegate) appoint as the Independent Expert an independent person of suitable experience and expertise who is qualified to resolve the Dispute and meets the Requirements as soon as reasonably practicable. A copy of the application must be given to each party to this Agreement.

(d) The Independent Expert once selected or appointed will be instructed by the Disputants to make their decision in relation to any matter referred to them from time to time in accordance with clause 35 as soon as reasonably practicable, and in any event in accordance with clause 35.3(l).

(e) The terms on which the Independent Expert is appointed must include an obligation to abide by the terms of this Agreement, so far as they are relevant to the Independent Expert.

(f) If any of the Independent Financial Expert, the Independent Operations Expert, and Independent Legal Expert are appointed jointly to determine any matter, they may only do so unanimously. If they do not reach a unanimous decision then any Disputant may commence court proceedings in relation to the Dispute.

**35.3 Scope of Independent Expert determination**

Where a Dispute is referred to an Independent Expert, the following applies:

(a) Subject to the express provisions of this Agreement, the Independent Expert will establish the procedure and timetable for its determination.

(b) Each Disputant may provide written submissions in relation to the Dispute to the Independent Expert, and if it does so that Disputant must also provide copies of its submissions to the other Disputants.





(c) The written determination of the Independent Expert will be final and binding on the Disputants in the absence of fraud or manifest error.

(d) The Independent Expert may add or remove any party to this Agreement as a Disputant on the application of any party to this Agreement or of their own volition, provided that the Independent Expert may only remove a party where the Independent Expert is satisfied that the determination of the Dispute by the Independent Expert will not impact on the rights or obligations of such party.

(e) The Independent Expert may:

(i) request any Disputant to deliver written statements relating to matters in issue in the Dispute, and if it does so that Disputant must also provide copies of those written statements to the other Disputants;

(ii) request any Disputant to deliver copies of any documents other than documents that would have legal privilege attached, and if it does so that Disputant must also provide copies of those documents to the other Disputants, but no party is bound to produce statements or documents in accordance with this paragraph except insofar as it is bound by any other provision of this Agreement to produce it to another party to this Agreement, although the Independent Expert may draw an adverse inference from a failure to produce such material.

(f) The Independent Expert may request any Disputant to make an oral submission or to orally answer queries from the Independent Expert. If it does, the Independent Expert must convene, on not less than five Business Days notice, a meeting for the purposes of receiving such oral submissions or answers at which each Disputant is entitled to attend. Each Disputant must ensure that one of its representatives attends every such meeting, although subject to clause 35.3(k) the submissions or answers may be received even if such representatives are not present. Each Disputant will be provided with a reasonable opportunity to respond to such oral submissions or answers and the provisions of this clause 35.3(f) shall apply to such responses.

(g) The Independent Expert may:

(i) limit the length of any written or oral submission;

(ii) require the attendance before them for questioning of any Disputant or employee or agent of any Disputant;

(iii) make site visits, provided that each Disputant is entitled to send a representative to accompany the Independent Expert, and the Independent Expert must give at least five Business Days notice of the visit to each Disputant;

(iv) make use of their own specialist knowledge, whether within or outside the scope of the Dispute referred to them and the submissions and other materials provide to them;

(v) to the extent the Dispute relates to a matter for which there are agreed principles contained in or attached to this Agreement, not depart from those principles or produce an outcome that is inconsistent with those principles;

(vi) obtain advice from specialist consultants, provided that at least one of the Disputants so requests or consents;

(vii) review and revise any of their own previous directions; and

(viii) conduct the proceedings in an inquisitorial manner, and take the initiative in ascertaining the facts and the law.

(h) The Independent Expert may reach their decision with or without holding an oral hearing.

(i) The Independent Expert will exercise their powers fairly and impartially, giving each Disputant a reasonable opportunity, in light of the timetable, of putting their case and dealing with that of the other Disputants.

(j) All correspondence between the Independent Expert and a Disputant must be in writing and copied to each other Disputant.

(k) The Independent Expert may not:

(i) consider any written submissions from one Disputant that are not also made available to the other Disputant;

(ii) consider any oral submissions from one Disputant unless a majority of the representatives of the other Disputants are present;

(iii) refuse any Disputant the right at any hearing or meeting to be represented by a representative of that Disputant's choosing who is present;

(iv) act or continue to act in the face of a conflict of interest or if they do not meet the Requirements; or

(v) require any Disputant to pay or make contribution to the legal costs of any other party.

(l) The Independent Expert will reach a decision within 28 Business Days of referral or their appointment, whichever is the later, or such other period as may be unanimously agreed between the Independent Expert and each Disputant.

(m) Upon becoming aware that the Dispute is the same as or substantially similar to a dispute which has previously been referred to the Independent Expert under this Agreement within the preceding 12 months, and that a decision has previously been issued by the Independent Expert, at the request of either Coal & Allied or the Bengalla Joint Venturers that Independent Expert will immediately withdraw from the Dispute and a new Independent Expert will be appointed in accordance with clause 35.2.

(n) The Independent Expert must act as an expert and not as an arbitrator.





**35.4 Scope of Dispute**

(a) An Independent Expert to which a Dispute is referred may only decide on matters within scope of that Dispute, being:

(i) the matters identified in the Dispute Notice;

(ii) any further matters which all of the Disputants unanimously agree in writing should be within the scope of the Dispute; and

(iii) any further matters which the Independent Expert determines either:

(A) must be included in order that the determination of the Dispute may be effective and/or meaningful; or

(B) are related matters which would be more efficiently dealt with as part of the one matter.

(b) The Independent Expert may rule upon their own substantive jurisdiction, and as to the scope of the Dispute.

**35.5 Decisions**

(a) All decisions of the Independent Expert must be in writing and addressed to each of Coal & Allied, BMC, and each of the Bengalla Joint Venturers. If requested by any party, not later than 7 Business Days from the date of delivery of the Independent Expert's decision to that party, the Independent Expert must provide reasons for that decision.

(b) If the Independent Expert decides that interest is to be paid on any amount it must be calculated in accordance with clause 41.

**35.6 Enforcement**

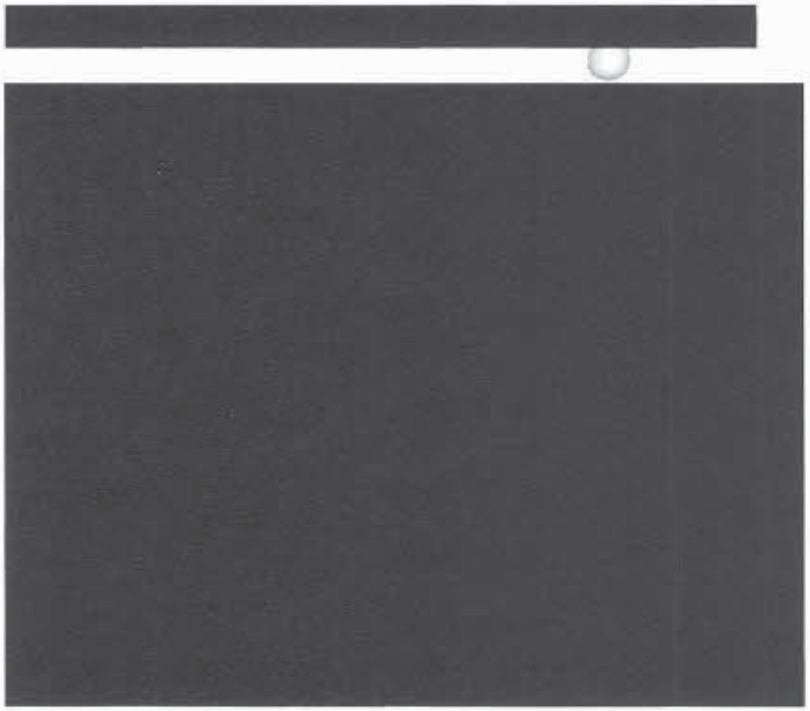
The Disputants must implement the decision of an Independent Expert in accordance with any timetable set out in the final determination or otherwise as soon as practicable in accordance with Accepted Mining Practice. The Disputants will be entitled to such relief and remedies as are set out in the determination. A party which is not a Disputant is not affected by any determination made in accordance with this clause, and a decision in respect of which a party is not a Disputant will not form a precedent for disputes involving that party.

**35.7 Immunity and non-compellability**

(a) Neither the Independent Expert nor any employee or agent of theirs will be liable for anything done or not done in the discharge or purported discharge of their functions, whether in negligence or otherwise, unless the act or omission is fraudulent or in bad faith. The Disputants must indemnify the Independent Expert in respect of any losses, liabilities, costs and expenses incurred as a result of a referral under this clause 35, except in the case of fraud or bad faith, severally in equal shares.

(b) In the event that any Disputant seeks to challenge or review any decision of the Independent Expert in any subsequent legal proceedings, the Independent Expert will not be joined as a party to, nor will be cited or otherwise compelled to give evidence or provide their notes in such legal proceedings except where required by law.

(c) No Disputant will, save in case of fraud or bad faith on the part of the Independent Expert or as otherwise provided by this Agreement, make any application to the courts whatsoever in relation to the conduct of the Dispute or the decision of the Independent Expert until such time as the Independent Expert has made their final determination, or refused to make a final determination.







**Schedule 21 – Restricted Permitted Relocation Corridor and Unrestricted Permitted Relocation Corridor**


DRAWING CHECK PRINT

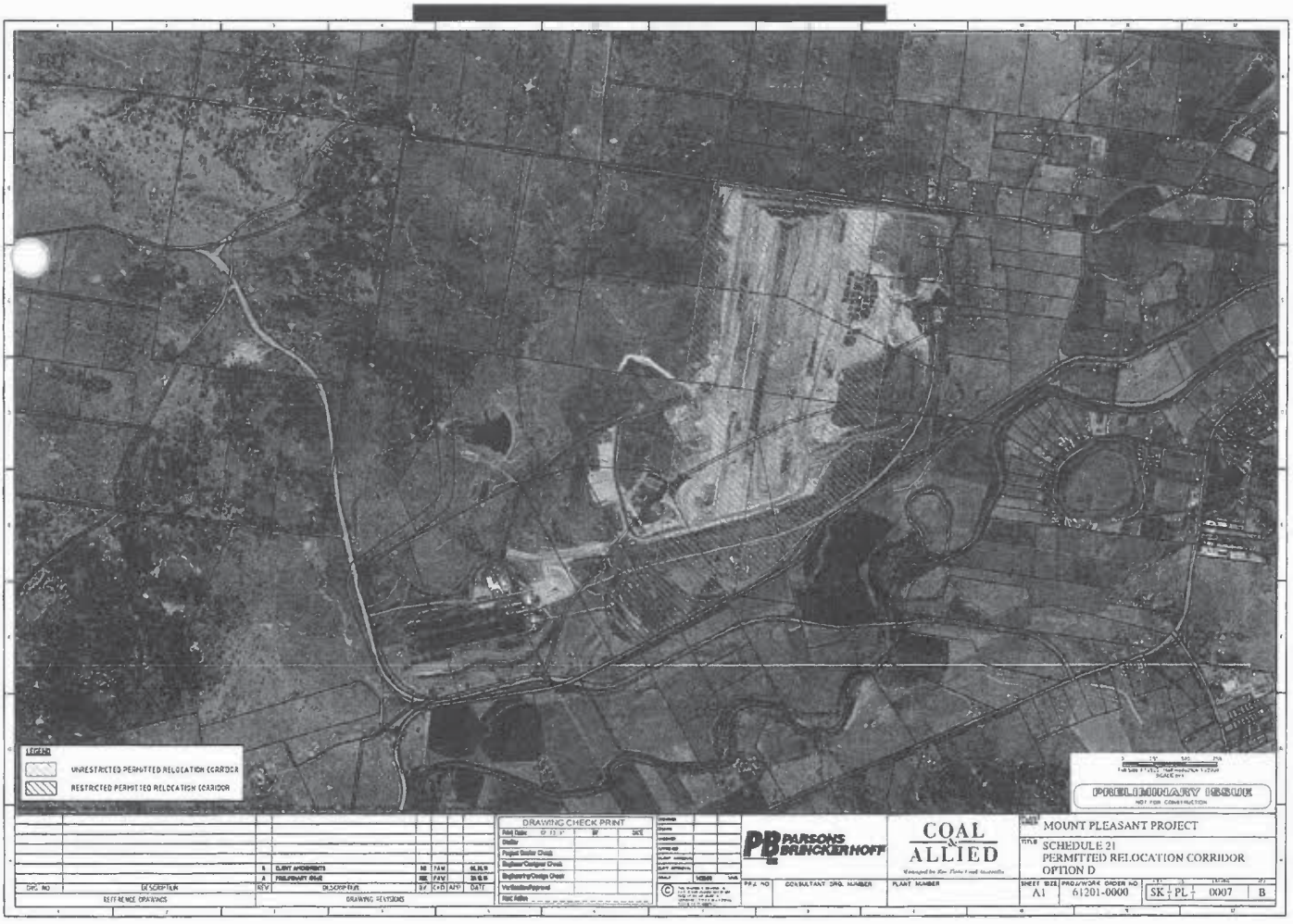
PARSONS BRINCKERHOFF

COAL & ALLIED

MOUNT PLEASANT PROJECT

TITLE: SCHEDULE 21
PERMITTED RELOCATION CORRIDOR
OPTION A B OR C

| SHEET SIZE | PROJ/WORK ORDER NO | | | | |
|---|---|---|---|---|---|
| A1 | 61203-0000 | SK | PL | 0006 | B |




DRAWING CHECK PRINT

PARSONS BRINCKERHOFF

COAL & ALLIED

MOUNT PLEASANT PROJECT

TITLE: SCHEDULE 21
PERMITTED RELOCATION CORRIDOR
OPTION D

| SHEET SIZE | PROJ/WORK ORDER NO | | | | |
|---|---|---|---|---|---|
| A1 | 61201-0000 | SK | PL | 0007 | B |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Coal & Allied Operations Pty Limited**:

| | |
|---|---|
| Director Signature | Director/~~Secretary~~ Signature |
| Matthew William Halliday | Benjamin David Rose |
| Print Name | Print Name |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **CNA Bengalla Investments Pty Ltd**:

| | |
|---|---|
| Director Signature | Director/Secretary Signature |
| Matthew William Halliday | Anthony David Miller |
| Print Name | Print Name |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Wesfarmers Bengalla Limited**:

| | |
|---|---|
| Director Signature | Director/~~Secretary~~ Signature |
| STEWART BUTEL | ROBERT BRENCHLEY |
| Print Name | Print Name |





**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Taipower Bengalla Pty Limited**:

| | |
|---|---|
| Director Signature | Director/Secretary Signature |
| Print Name: Jenn-Hwu, Hsu | Print Name: Stanley C.M. Tsai |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Mitsui Bengalla Investment Pty Limited**:

| | |
|---|---|
| Director Signature | Director/Secretary Signature |
| Print Name | Print Name |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Bengalla Mining Company Pty Limited**:

| | |
|---|---|
| Director Signature | Director/Secretary Signature |
| Print Name | Print Name |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Taipower Bengalla Pty Limited**:

| | |
|---|---|
| Director Signature | Director/Secretary Signature |
| Print Name | Print Name |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Mitsui Bengalla Investment Pty Limited**:

| | |
|---|---|
| Director Signature | ~~Director~~/Secretary Signature |
| SO YAMADA | Paul Williams |
| Print Name | Print Name |

**Executed** in accordance with section 127 of the *Corporations Act 2001* by **Bengalla Mining Company Pty Limited**:

| | |
|---|---|
| Director Signature | Director/Secretary Signature Anthony David Miller |
| STEWART BUTEL | |
| Print Name | Print Name |





**Executed** in accordance with section 127 of the *Corporations Act 2001* by **CNA Bengalla Pty Ltd**:

| | |
|---|---|
| Director Signature Matthew William Halliday | ~~Director/Secretary~~ Signature Anthony David Miller |
| Print Name | Print Name |

MACHEnergy

# Attachment 2

Preliminary Mount Pleasant Operation Rehabilitation Strategy

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# 1 INTRODUCTION

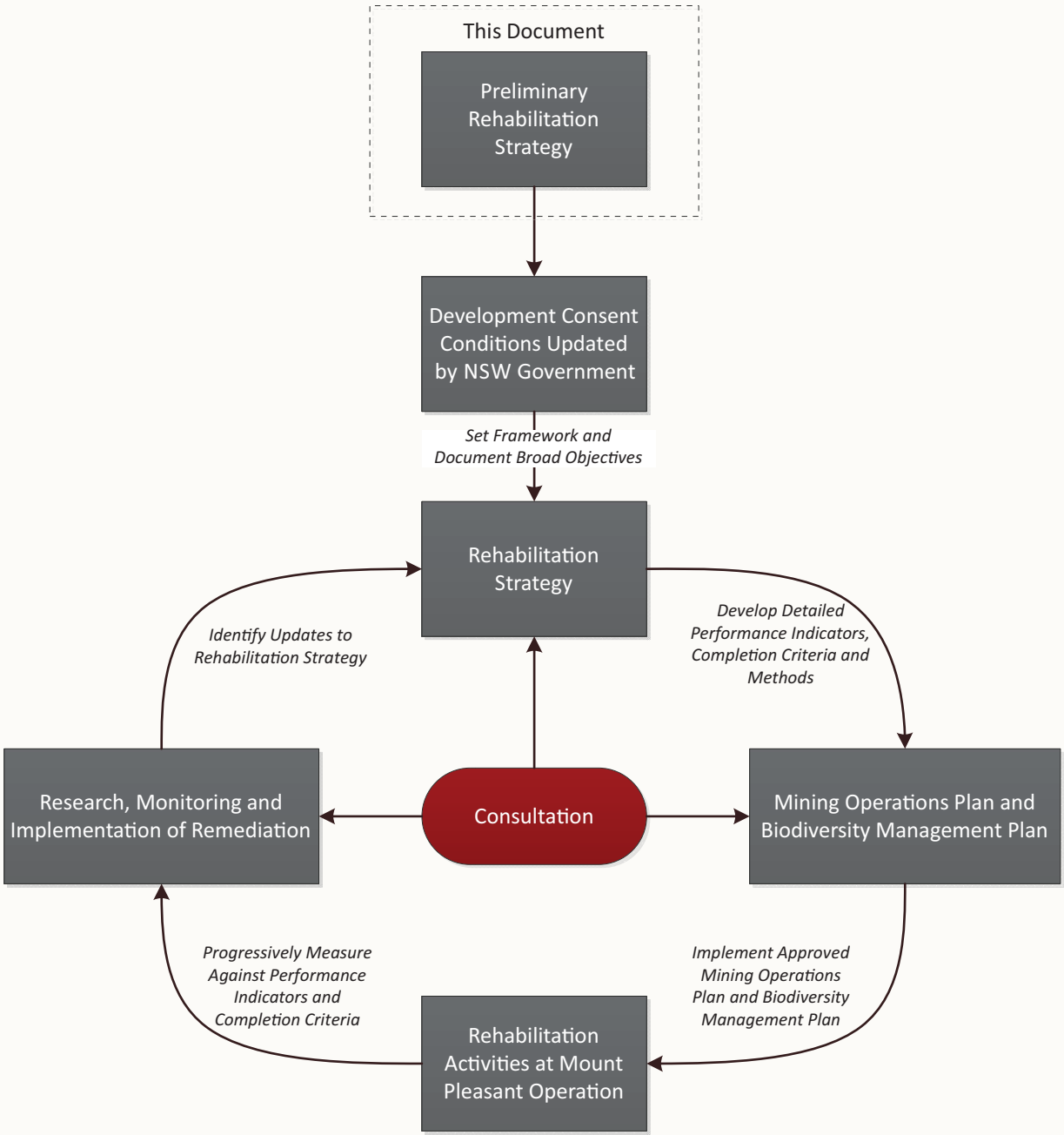
This Preliminary Rehabilitation Strategy (the Preliminary Strategy) has been prepared to assist the Department of Planning and Environment (DP&E) and the Division of Resources and Geoscience (DRG) with contemporising relevant Conditions in Development Consent DA 92/97, should the Mount Pleasant Operation Mine Optimisation Modification (the Modification) be approved.

The Preliminary Strategy has been prepared with reference to comments provided by the DP&E and the DRG following the public exhibition of the *Mine Optimisation Modification Environmental Assessment* (MACH Energy Australia Pty Ltd [MACH Energy], 2017) (the Environmental Assessment).

In addition, specific reference has been made to the requirements of the ESG3: *Mining Operations Plan (MOP) Guidelines* published by the Department of Trade and Investment, Regional Infrastructure and Services - Division of Resources and Energy (DRE now DRG) in 2013 to avoid duplication between the content of this Preliminary Strategy and the content that is required to be presented in the subsequent Mining Operations Plan (MOP) or Rehabilitation Plan. The key components of the rehabilitation implementation and improvement methodology at the Mount Pleasant Operation and the role of this document is shown on Figure 1.

This Preliminary Strategy has also been drafted with the expectation that the requirement for preparation of a Rehabilitation Strategy in consultation with the relevant Government agencies such as the Muswellbrook Shire Council (MSC) will remain in the Development Consent DA 92/97.

The tables and figures shown in this Preliminary Strategy are therefore conceptual in nature and subject to review and revision in consultation with the key regulatory agencies as a result of subsequent detailed design and ongoing refinement of the mines landforms and rehabilitation techniques over the life of the Mount Pleasant Operation.




MAC-16-01 MLMod_PRS_001A

Resource Strategies

MACHEnergy

MOUNT PLEASANT OPERATION

Key Components of Rehabilitation Implementation and Improvement Methodology

**Figure 1**

# 2 FINAL LANDFORM

MACH Energy is aware of the level of local interest or concern with respect to the shape and form of Mount Pleasant Operation final mine landforms.

MACH Energy has therefore developed the following design principles for the modified Mount Pleasant Operation final landform:

- the emplacement landform would be designed to look less "engineered" when viewed from Muswellbrook (i.e. incorporation of macro-relief to avoid simple blocky forms);
- surface water drainage from the waste emplacement landform would incorporate micro-relief to increase drainage stability and avoid major engineered drop structures where practical; and
- the final void (and associated drainage network) would be shaped to reflect a less engineered profile that is more consistent with the surrounding natural environment.

The following subsections provide further discussion of how these principles will be applied.

***Design Integration of Macro and Micro Relief***

The emplacement extension and other proposed changes to the final landform in the Modification period to 2026 are intended to improve the overall appearance of the Mount Pleasant Operation landform by incorporating the following concepts:

- the final landform surface of the upper lifts on the eastern side of the emplacement would be varied to break up the horizon line when viewed from the east; and
- the toe of the emplacement would be extended in plan to form a more complex shape that better aligns with the underlying topography.

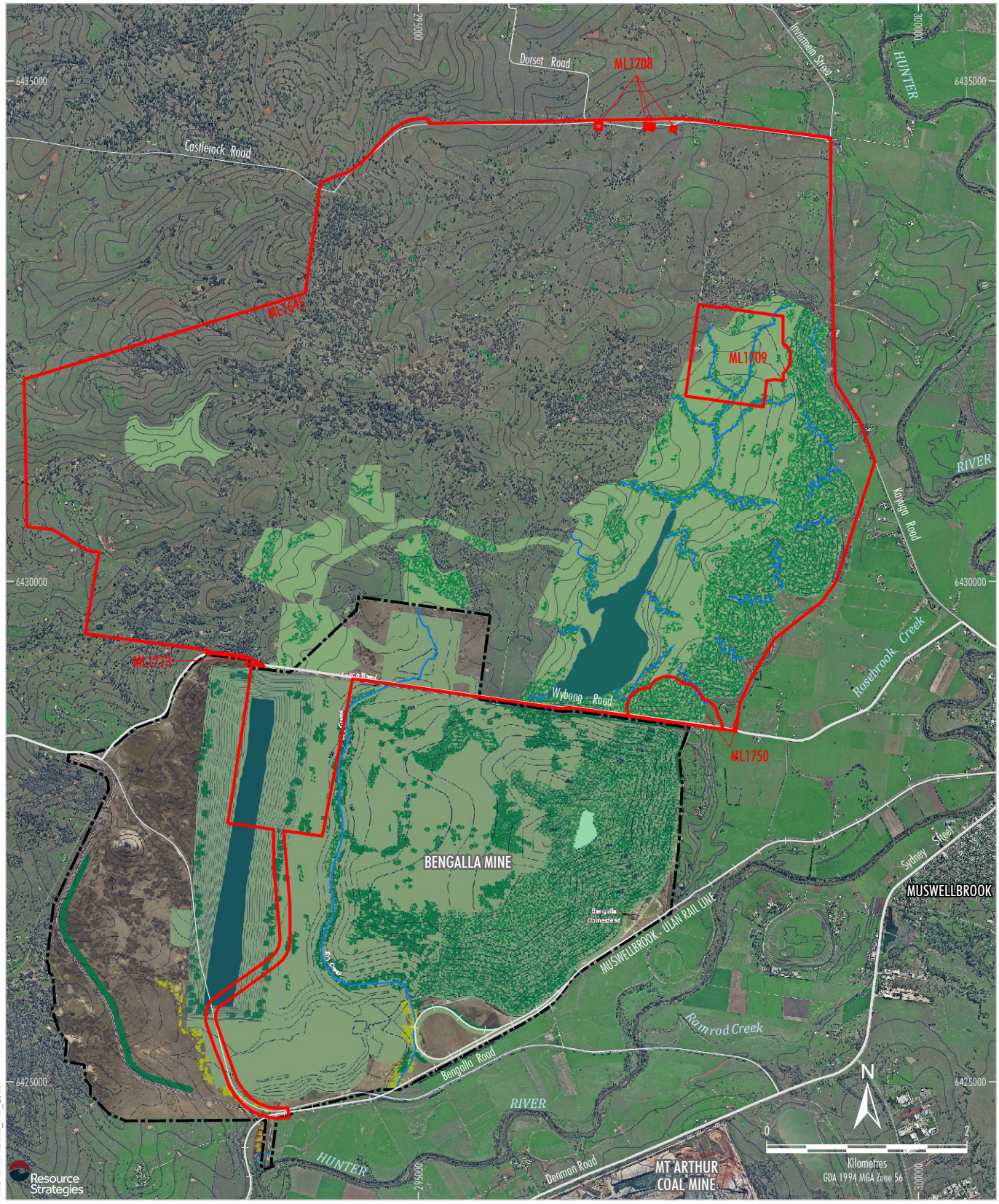
These elements of macro-relief on the eastern face of the 2026 final landform when combined create a number of spurs and valleys, with the high points on the 2026 landform aligning with the spurs to further improve the more natural appearance of the landform from viewpoints to the north-east and south-east.

The objective of the modified final landform is to develop drainage features in the post-mine landform that mitigate erosion potential. This would be achieved by incorporating micro-relief into the drainage design.

The New South Wales (NSW) Mineral Council's *Rehabilitation by Design Practice Notes* (2007) and Department of Environment, Climate Change and Water's *Managing Urban Stormwater Soils and Construction Volume 2E Mines and Quarries* (2008) provide principles for the construction of stable batter slopes. These principles include:

- Use of a combination of convex and concave outer batters to convey runoff (i.e. as opposed to fixed slope batters).
- Appropriately spaced benches to reduce the velocity of runoff.
- Gentler slope gradients.

MACH Energy has considered these principles in developing the conceptual final landform shown on Figure 2.




LEGEND

- Mt Pleasant Mining Lease Boundary
- Final Void
- Final Rehabilitation

Bengalla Mine Conceptual Final Landform *

- Project Boundary (Appendix 2 of Development Consent SSD-5170) (Dated 23 December 2016)
- Dry Creek
- Final Void Lake
- Rehabilitation
- Rehabilitation Class III
- Indicative Tree Screens (or equivalent)
- Treed Rehabilitation
- Indicative Restorative Area

** Digitised from Appendix 9 of Development Consent (SSD-5170) and amended in the Mount Pleasant Operation CHPP area.*

*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 Modified Final Landform

**Figure 2**

In particular, MACH Energy would implement the following measures to increase the stability of the final landform:

- Establish bench drains where necessary to convey runoff from batter slopes to sub-catchment drainage lines.
- Maximise the number of sub-catchments to reduce the catchment area of individual constructed drainage lines.
- Establish meandering drainage lines that increase the total drainage length and therefore result in gentler stream bed gradients.
- Where practical, design drainage lines to generally produce a concave stream bed profile.
- Establish native tree cover on the outer face of the Eastern Out of Pit Emplacement and in final landform drainage features to promote stability of the final landform.

The final landform drainage lines would be designed to accommodate natural erosive processes. This would be achieved through consideration of key erosional and geomorphic characteristics such as nature of bed material (e.g. particle size), presence of rock outcrops, bed features (such as cascades, pool and riffle zones) as well as bed and bank vegetation.

Geomorphic features would be incorporated into the design of the relevant final landform drainages. This would also be informed by investigation into the physical characteristics of waste rock and soil materials at the Mount Pleasant Operation for provision of appropriate rock, sub-soil and topsoil material for use on outer batters and in drainage features.

The conceptual landforms presented in the Environmental Assessment would be further refined over the life of the Mount Pleasant Operation including further review using GeoFluv™ or similar catchment/drainage review and landform design software to examine whether the development of further micro-relief could reasonably be incorporated to limit the need for bench drains on the outer batters of the Eastern Out of Pit Emplacement.

Throughout the life of the Modification, the conceptual final landform may be revised to reflect the outcomes of the above investigations, in consultation with the MSC and relevant NSW Government agencies.

Progressive updates to the final landform that are consistent with the design intent concepts outlined above would be documented in the relevant MOP.

***General Design Concepts – Outer Batters of Eastern Out of Pit Emplacement***

The design improvement work conducted by MACH Energy to date for the outer batters of the Eastern Out of Pit Emplacement has maintained an average outer emplacement slope of approximately 10 degrees, to be generally consistent with the approved final landform for the Mount Pleasant Operation.

In order to develop a more natural looking landform, MACH Energy has incorporated significant areas of the outer emplacement batters at slopes of less than 10 degrees, and more limited areas of slopes up to approximately 14 degrees, to provide important slope variation, while also maintaining waste rock emplacement capacity.

Figures 3 and 4 provide visual simulations that illustrate how the implementation of the concepts described above result in a significantly improved final landform for the Mount Pleasant Operation incorporating the Modification.




LEGEND
Established Rehabilitation

MACHEnergy

MOUNT PLEASANT OPERATION

Final Landform Simulation - Floodplain Properties (Kayuga Road)

**Figure 3**

MAC-16-01 ML Mod_PRS_002A




LEGEND
Established Rehabilitation

MACHEnergy

MOUNT PLEASANT OPERATION

Final Landform Simulation - Muswellbrook (Hill Street)

**Figure 4**

MAC-16-01 ML Mod_PRS_003A

In practice, significantly steeper slopes than 14 degrees in post-mining landforms can be sufficiently stable in the long term (as in the natural Hunter Valley environment), provided that they are utilised in positions in the final landform that have minimal upslope catchment and are part of an integrated geomorphologically robust landform design that reflects the material composition of the waste rock material.

MACH Energy would continue to refine the design of the proposed final landform, and where relevant, will justify areas to be constructed at steep grades on the basis of maintaining waste emplacement capacity and how this is acceptable due to its hydrological/drainage position in the final landform in the relevant MOP.

***External Drainage***

It is noted that the 2026 final landform is representative of the final landform that would remain if the Mount Pleasant Operation does not obtain suitable future authorisations to continue mining beyond 2026. In the event that mining did not proceed past 2026, the final landform would involve a range of earthworks to push down areas of the final highwalls and low-walls; the outcome being a single void remaining in the south with a relatively natural looking shape (Figure 2).

Due to the duration of open cut mining in the Modification period, it follows that the area of the open cut at the end of 2026 would represent a larger proportion of the total Mount Pleasant Operation disturbance area than would be the case after the 21 years of mining that was originally approved in 1999.

In the 2026 final landform (Figure 2) MACH Energy has sought to minimise the catchment area that reports to the eastern face of the Eastern Out of Pit Emplacement, to minimise the volume of water reporting to drainage features on the outer batters, and therefore minimise the need for highly visible traditional engineered linear drop structures.

The southern and eastern batters of the rehabilitated emplacement final landforms will drain externally to local tributary streams and ultimately to the Hunter River.

***Internal Drainage***

In addition to minimising drainage onto the outer batters of the Eastern Out of Pit Emplacement, to minimise the area of steep slopes and the land sterilised by the final void, MACH Energy has designed the 2026 final landform to provide for gently sloping areas to the west of the Eastern Out of Pit Emplacement. These areas can potentially be utilised for productive agricultural industries (Section 3).

This includes a central area where incident rainfall would report to the final void, in part because there is a natural ridgeline to the immediate west of the open cut that remains as a topographic constraint to potential off-site site drainage of the central area if mining were to cease in 2026. It is noted that this ridgeline would be mined through in the originally approved 21 year mine life.

It is also noted that a preliminary water balance of the 2026 south pit final void has been completed by Hydro Engineering Consultants (2017) which indicates that a void lake would establish on average lower than the pre-mining groundwater table (i.e. the void would typically act as a groundwater sink) and the final void is not predicted to spill to the surrounding environment under any of the modelled climatic scenarios.

***Out of Pit Emplacement – Outer Batters Construction Methodology***

To facilitate the more rapid establishment of the final landform profiles, MACH Energy would construct the outer batters of the eastern face of the waste emplacement in 10 metre (m) lifts that also facilitate the construction of more variable compound final landform slopes.

To maximise the topographic shielding of the evening and night-time mining operations, daytime only construction and final shaping of the outer parts of the Eastern Out of Pit Emplacement would be prioritised to advance ahead of the open cut development.

This approach has the advantage of providing a visual and noise attenuation barrier between the open cut operations and the town of Muswellbrook and also facilitates the rapid establishment of initial rehabilitation on the lower portions of the emplacement (Section 5).

# 3 POST-MINING LAND USE AND REHABILITATION DOMAINS

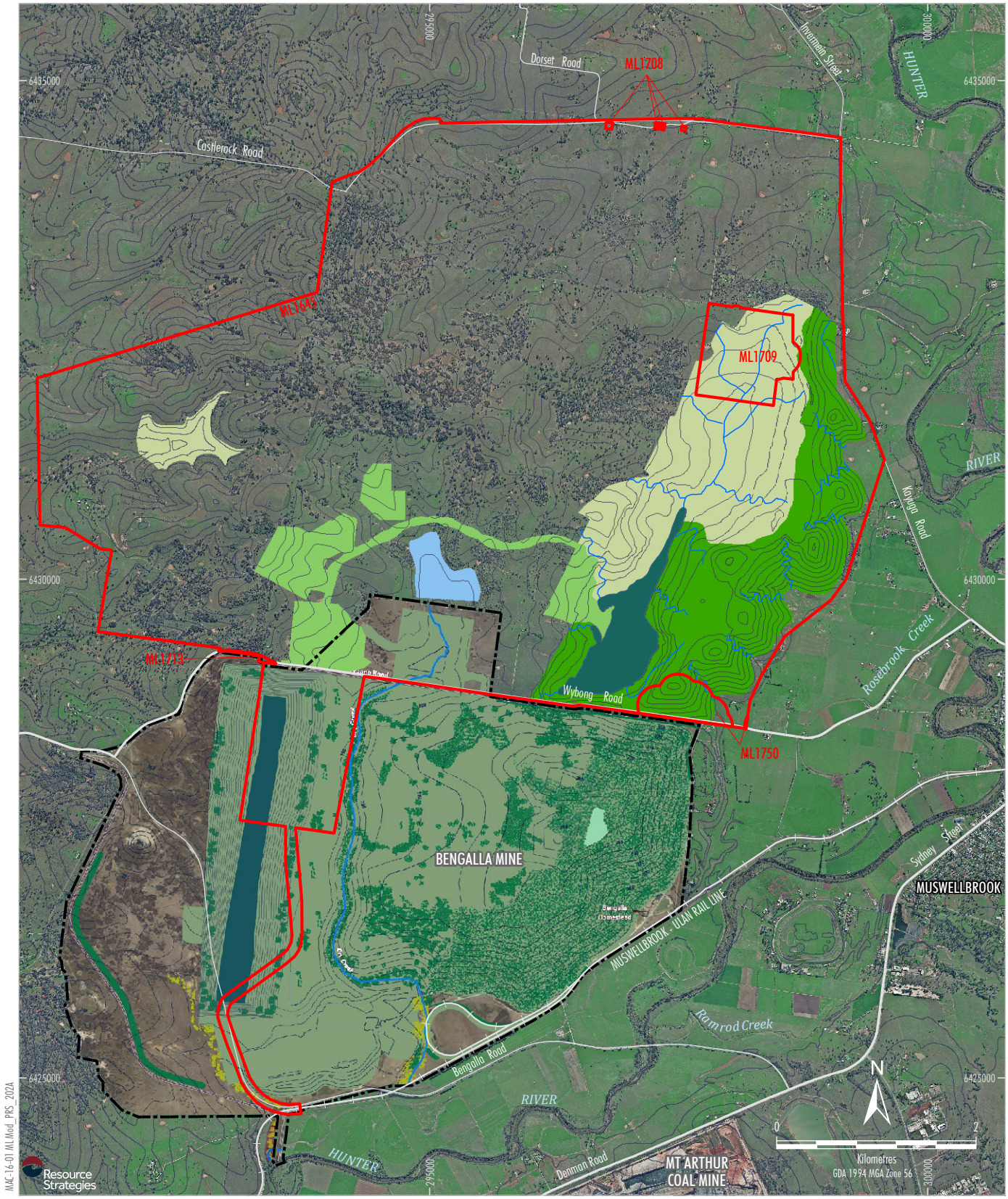
MACH Energy has undertaken a preliminary assessment of potential post-mining land uses (e.g. nature conservation, agriculture) taking into account relevant strategic land use objectives of the area in the vicinity of the Mount Pleasant Operation and the potential benefits of the post-mining land use to the environment, future landholders and the community. This has included consultation with MSC who has indicated a preference for intensive agricultural/industrial post-mining land uses that provide employment for the local community.

Provisional Post Mining Land Use Domains (Secondary Domains) are shown on Figure 5. Consistent with the *Mining Operations Plan (MOP) Guidelines* (DRE, 2013), each of these Secondary Domains are characterised by a similar post mining land use objective. The provisional Secondary Domains for the Mount Pleasant Operation are summarised in Table 1.

**Table 1**
**Provisional Post Mining Land Use Domains**

| Code | Secondary Domain | Description |
|---|---|---|
| A | Final Void | • Residual final void waterbody located in the south of the open cut.<br>• Would typically act as a groundwater sink.<br>• Could provide long-term use for recreational or industrial activities. |
| B | Water Management Area | • Water management infrastructure that would remain post-mining (e.g. upslope diversions).<br>• The Mine Water Dam has been identified as a potential long-term source of water for nearby intensive land uses (subject to obtaining relevant regulatory approvals).<br>• If long-term water supply is not required, MACH Energy would rehabilitate the Mine Water Dam to Domain C or D. |
| C | Rehabilitation Area – Agricultural Land | • Areas that would be rehabilitated to a standard suitable for agricultural (or industrial) post-mining land use (including potential intensive land use areas).<br>• Potential intensive land use areas have been identified based on proximity to nearby supporting infrastructure and/or water storage facilities. |
| D | Rehabilitation Area – Native Woodland/Grassland | • Areas that would be rehabilitated to Native woodland/grassland.<br>• Consistent with MSC's recommendations, the eastern face of the Mount Pleasant Operation final landform would be revegetated with native tree species.<br>• Other Domain D areas have been selected based on slope (i.e. areas that would be of limited relative agricultural use).<br>• Provisional Plant Community Types (PCTs) and key canopy and shrub species are discussed in Section 5. |

These Provisional Post Mining Land Use Domains would be reviewed in consultation with key stakeholders as part of the development of the updated Rehabilitation Strategy and MOP.




LEGEND

Mt Pleasant Mining Lease Boundary

Final Land Use Areas

- Domain A - Final Void
- Domain B - Permanent Water Management Infrastructure (Potential Water Supply Dam for High Intensity Land Uses)
- Domain C - Agriculture (Likely Low Intensity Agriculture)
- Domain C - Agriculture (Potential High Intensity Land Use Area)
- Domain D - Woodland/Grassland

Note: Upslope diversions associated with minimising the catchment of the final void are not shown.

Bengalla Mine Conceptual Final Landform *

- Project Boundary (Appendix 2 of Development Consent SSD-5170) (Dated 23 December 2016)
- Dry Creek
- Final Void Lake
- Rehabilitation
- Rehabilitation Class III
- Indicative Tree Screens (or equivalent)
- Treed Rehabilitation
- Indicative Restorative Area

** Digitised from Appendix 9 of Development Consent (SSD-5170) and amended in the Mount Pleasant Operation CHPP area.*

*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 Land Use Areas**

**Figure 5**

# 4 REHABILITATION OBJECTIVES

Following review of the current rehabilitation objectives specified in Table 14 (Condition 53) of Development Consent DA 92/97, MACH Energy proposes that these be updated to more contemporary standards that reflect its intentions for the Mount Pleasant Operation, should the Modification be approved.

In preparing these draft objectives MACH Energy has reviewed a number of recent Development Consents for major mining projects and has considered where similar objectives may also be applicable to the Mount Pleasant Operation.

MACH Energy's proposed rehabilitation objectives for the Mount Pleasant Operation incorporating the Modification are detailed in Table 2.

**Table 2**
**Proposed Updated Rehabilitation Objectives**

| Feature | Objective |
|---|---|
| Mine site (as a whole) | • Safe, stable and non-polluting.<br>• Final landforms (including final voids) designed to incorporate micro-relief and integrate with surrounding natural landforms.<br>• Constructed landforms maximise surface water drainage to the natural environment (excluding final void catchments).<br>• Minimise visual impact of final landforms as far as is reasonable and feasible.<br>• Final landforms designed in consideration of water licensing requirements. |
| Final Voids | • Designed as to ensure sufficient freeboard at all times to minimise the risk of discharge to surface waters.<br>• Designed as long term groundwater sinks.<br>• Minimise to the greatest extent practicable:<br>– the size and depth of final voids;<br>– any high wall instability risk; and<br>– the risk of flood interaction for all flood events up to and including the Probable Maximum Flood.<br>• The drainage catchment of final voids should be minimized, subject to also achieving the general rehabilitation objectives for the site as a whole. |
| Revegetation | • Restore areas of self-sustaining woodland and/or grassland native PCTs characteristic of vegetation communities found in the local area, as determined in accordance with the final landform context, in the general areas shown conceptually on Figure 5.<br>• Where practical, maximize the area of native vegetation that contributes to habitat for threatened species and/or comprises PCTs recognized as endangered ecological communities.<br>• Effective use of topsoil and subsoil to assist in improved rehabilitation. |
| Agriculture | • Rehabilitate pastoral land use areas to support sustainable grazing activities in the general areas shown conceptually on Figure 5. |
| Surface Infrastructure | • To be decommissioned and removed, unless DRG agrees otherwise. |
| Community | • Ensure public safety.<br>• Minimise adverse socio-economic effects associated with mine closure. |

# 5 PROGRESSIVE REHABILITATION

***Rehabilitation Phases***

The rehabilitation phases for the Mount Pleasant Operation are summarised below:

- Decommissioning Phase – removal of hard stand areas, buildings, contaminated materials, hazardous materials.
- Landform Establishment Phase – incorporates gradient, slope, aspect, drainage, substrate material characterisation and morphology.
- Growing Media Development Phase – incorporates physical, chemical and biological components of the growing media and ameliorants that are used to optimise the potential of the media in terms of the preferred vegetative cover.
- Ecosystem and Land Use Establishment Phase – incorporates revegetated lands and habitat augmentation; species selection, species presence and growth together with weed and pest animal control/management; and establishment of flora.
- Ecosystem and Land Use Sustainability Phase – Incorporates components of floristic structure, nutrient cycling recruitment and recovery, community structure and function which are the key elements of a sustainable landscape.

Progress for relevant rehabilitation domains will be measured against the phases above in the Mount Pleasant Operation MOP.

***Progressive Emplacement Outer Batter Re-Shaping***

MACH Energy would prioritise construction of the lower batters of the waste emplacement to the final landform profile, and the rapid spreading of topsoil and sowing of sterile cover crops to target early revegetation of these batters to progressively minimise visual impacts in Muswellbrook and other locations to the east.

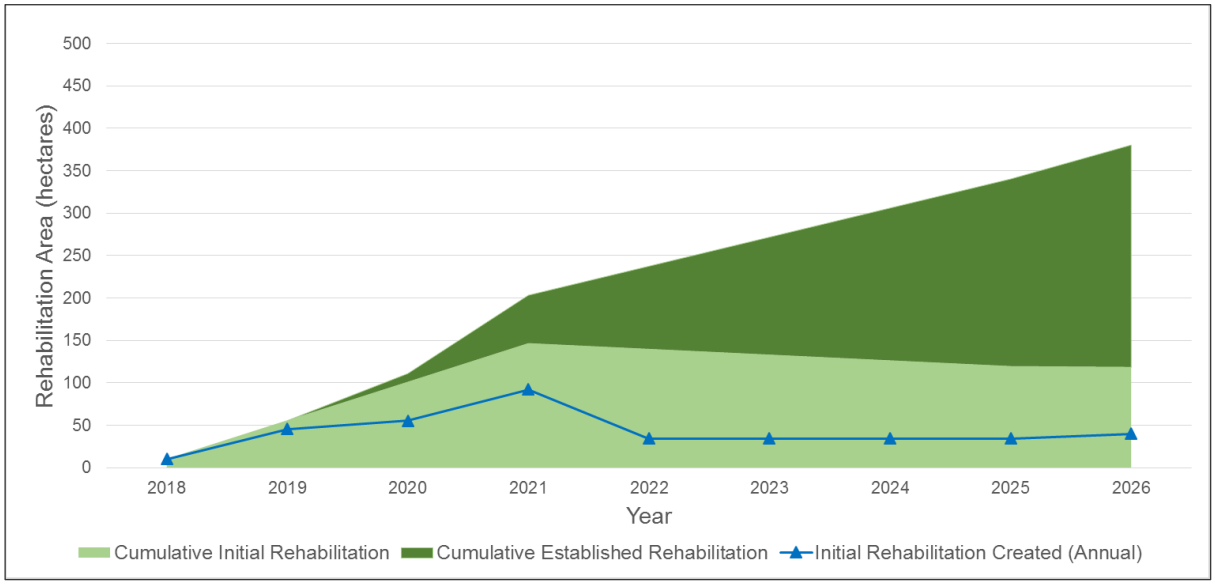
The use of 10 m lifts of the emplacement landform would result in more rapid establishment of the final surface levels, as waste rock placement progresses more rapidly than the alternative of construction in 20 m emplacement lifts that takes significantly longer to develop, and also requires longer to reshape.

MACH Energy anticipates targeting reshaping to final surface level and sowing of sterile cover crops of all outer emplacement batter lifts of the Eastern Out of Pit Emplacement within 6 months of each subsequent dump panel lift being completed (subject to delays associated with climatic extremes).

**Rehabilitation Progress**

Chart 1 provides a preliminary estimate of the progress of both initial and established rehabilitation at the Mount Pleasant Operation incorporating the Modification.

**Chart 1**
**Preliminary Estimate of Rehabilitation Progress**




Note: Timing subject to confirmation of mining rate and emplacement geometry in the MOP and may vary due to factors outside of MACH Energy's control (e.g. climatic extremes).

This chart indicates that the progress of initial and established rehabilitation is highly subject to the planned progress of mining activities and the relative waste rock volumes generated. The area of rehabilitation achieved would initially be lower, followed by a period of rapid establishment of larger areas of rehabilitation once significant portions of the out of pit emplacement external batters are available at final surface level. Later in the Modification period the rate of rehabilitation establishment would reduce as a more steady state is achieved and mining advances more slowly at full scale behind the established South Pit emplacement landform.

**Plant Community Types**

Consistent with MSC's recommendations for the Bengalla Mine final landform, the eastern face of the Mount Pleasant Operation 2026 final landform would be revegetated with native tree species. This would allow the landform to assimilate with the open woodland communities within the surrounding environment and also be visually consistent with the revegetation of the eastern face of the Bengalla Mine landform.

As described in the Landscape Management Plan (Coal & Allied, 2012) flora species endemic to the local area will be preferentially used for rehabilitation, except where seed supply may be a limiting factor. In this case, other appropriate native species which have performed well in the region will also be considered.

Based on seed supply and suitability, flora species to be used in rehabilitation may also include those typical of the NSW listed White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community.

A provisional list of PCTs that are being considered on-site for use in the rehabilitation activities is provided in Table 3. This list includes the PCTs that have been identified as occurring on-site and in the nearby surrounds in ecological investigations to date. The table also lists the key canopy and shrub species relevant to each of the relevant PCTs.

**Table 3**
**Provisional Plant Community Types**

| PCT | PCT Name | Formation | Class | Key Canopy Species | Key Shrub Species |
|---|---|---|---|---|---|
| 483 | Grey Box – White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley | Grassy Woodlands | Western Slopes Grassy Woodland | • *Eucalyptus moluccana*<br>• *Eucalyptus albens*<br>• *Brachychiton populneus subsp. populneus* | • *Notelaea microcarpa*<br>• *Maireana microphylla* |
| 1605 | Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter | Dry Sclerophyll Forests (Shrub/grass sub-formation) | North-west Slopes Dry Sclerophyll Woodlands | • *Eucalyptus crebra* | • *Maireana microphylla*<br>• *Myoporum montanum* |
| 1602 | Spotted Gum - Narrow-leaved Ironbark shrub - grass open forest of the central and lower Hunter | | Hunter-Macleay Dry Sclerophyll Forests | • *Corymbia maculata; Eucalyptus crebra* | • *Allocasuarina torulosa*<br>• *Breynia oblongifolia*<br>• *Persoonia linearis*<br>• *Notelaea longifolia*<br>• *Pandorea pandorana* |
| 1608 | Grey Box - Grey Gum - Rough-barked Apple - Blakelys Red Gum grassy open forest of the central Hunter | | Hunter-Macleay Dry Sclerophyll Forests | • *Brachychiton populneus subsp. Populneus*<br>• *Eucalyptus moluccana*<br>• *Eucalyptus punctate*<br>• *Angophora floribunda*<br>• *Eucalyptus blakelyi* | • *Notelaea microcarpa*<br>• *Spartothamnella juncea*<br>• *Acacia decora*<br>• *Myoporum montanum*<br>• *Clematis glycinoides* |

It is anticipated that this list of provisional PCTs would be further augmented and refined over the life of the Mount Pleasant Operation based on the results of on-site investigations, on-site rehabilitation trials and consultation with key stakeholders. The specific areas that would be targeted for each PCT and the area to be targeted in rehabilitation works would be defined in the relevant MOP.

# 6 PROVISIONAL PERFORMANCE INDICATORS

The *Mining Operations Plan (MOP) Guidelines* (DRE, 2013) defines performance indicators and completion criteria as follows:

- A **Performance Indicator** is an attribute of the biophysical environment (e.g. pH, slope, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion/relinquishment criterion. The indicator may be aligned to an established protocol and used to evaluate changes in a system.
- **Completion** (or Relinquishment) **Criteria** are objective target levels or values that can be measured to quantitatively demonstrate the progress and ultimate success of a biophysical process. These are the standards that are to be met by successful rehabilitation. They will generally be in the form of a numerical value that can be verified by measurement of the indicators selected for the Rehabilitation Objectives. They may include an element based on time.

Provisional Performance Indicators for each rehabilitation phase and domain are provided in Table 4. Site-specific Completion Criteria would be developed as part of the MOP process. This process would also include a review and, if required, an adjustment of the relevant Performance Indicators. The indicative MOP review schedule is summarised below:

- **October 2017 – December 2017**: Undertake review of final landform design and proposed final land uses in consultation with MSC, the community and other relevant stakeholders.
- **December 2017 – May 2018**: Engage suitably qualified and experienced rehabilitation/ biodiversity experts to review the Mount Pleasant Operation area and proposed final landform to confirm final land uses and rehabilitation objectives.
- **January 2018 – May 2018**: Undertake field investigations to identify appropriate control/reference sites for each secondary rehabilitation domain and collect monitoring data from which Completion Criteria will be developed. Parameters to be investigated in the identified control/reference sites would be subject to input from a suitably qualified and experienced rehabilitation/biodiversity expert but may include:
  - Composition of key overstorey and ground cover species.
  - Recruitment and succession of long lived and short lived species.
  - Vegetation community structures.
  - Canopy cover.
  - Weed presence.
  - Water quality (where relevant).
  - Chemical properties of soil profile (e.g. pH, salinity, nitrogen, potassium, phosphorous).
  - Biological properties of soil profile (e.g. organic carbon, presence of A horizon).
- **May 2018 – June 2018**: Development of an appropriate monitoring programme and trigger action response plans based on the SMART (Specific, Measurable, Attainable, Realistic and Time Bound) completion criteria developed.

**Table 4**
**Proposed Rehabilitation Performance Indicators**

| Phase | Relevant Rehabilitation Objectives | Performance Indicators |
|---|---|---|
| Decommissioning | Infrastructure to be decommissioned and removed, unless DRG agrees otherwise. | • Decommission and remove infrastructure.<br>• Removal of all mining plant and equipment.<br>• Disconnect services.<br>• Contamination Assessment.<br>• Removal of hazardous materials.<br>• Mine water structures that are not to be retained are decommissioned. |
| | Minimise adverse socio-economic effects associated with mine closure. | • Investigate intensive land uses that generate employment. |
| Landform Establishment | Safe, stable and non-polluting. | • Geotechnical stability of landform.<br>• Presence of carbonaceous materials.<br>• Presence of materials with potential to generate acid mine drainage. |
| | Final landforms (including final voids) designed to incorporate micro-relief and integrate with surrounding natural landforms. | • Geomorphological modelling of final batters (GeoFluv™ or similar).<br>• Slope gradient.<br>• Catchment size of individual drainage lines.<br>• Use of convex and concave outer batters.<br>• Bench spacing. |
| | Constructed landforms maximise surface water drainage to the natural environment (excluding final void catchments). | • Catchment size draining to natural environment.<br>• Catchment size draining to final void.<br>• Long-term changes to flow in Hunter River. |
| | Minimise visual impact of final landforms as far as is reasonable and feasible. | • Vertical variation in final landform surface.<br>• Establishment of native trees on eastern face (refer Ecosystem and Land Use Establishment and Sustainability Phases).<br>• Variation of eastern toe and integration with underlying topography. |
| | Final landforms designed in consideration of water licensing requirements. | • Modelled long-term water take.<br>• Sufficient water licences retired at end of mining. |
| Landform Establishment (Final Void) | Designed as to ensure sufficient freeboard at all times to minimise the risk of discharge to surface waters. | • Modelling indicates sufficient freeboard. |
| | Designed as long term groundwater sinks. | • Modelling indicates void operates as sink. |
| | Minimise to the greatest extent practicable:<br>• the size and depth of final voids;<br>• any high wall instability risk; and<br>• the risk of flood interaction for all flood events up to and including the Probable Maximum Flood. | • Final void dimensions.<br>• Final void highwalls are constructed in accordance with an approved Final Void Geotechnical Design.<br>• Flood modelling. |

**Table 4 (continued)**
**Proposed Rehabilitation Performance Indicators**

| Phase | Relevant Rehabilitation Objectives | Performance Indicators |
|---|---|---|
| Growing Media Development Phase | Effective use of topsoil and subsoil to assist in improved rehabilitation. | • Topsoil/subsoil spreading depth.<br>• Topsoil/subsoil characterisation (physical, chemical and biological properties).<br>• Soil amelioration. |
| Ecosystem and Land Use Establishment Phase | Restore areas of self-sustaining woodland and/or grassland native PCTs characteristic of vegetation communities found in the local area, as determined in accordance with the final landform context, in the general areas shown conceptually on Figure 5. | • Species composition.<br>• Vegetation structure.<br>• Weed species presence and density.<br>• Pest animal density. |
| | Where practical maximize the area of native vegetation that contributes to habitat for threatened species and/or comprises PCTs recognized as endangered ecological communities. | • Key canopy species matches PCTs.<br>• Key shrub species matches PCTs. |
| | Rehabilitate pastoral land use areas to support sustainable grazing activities in the general areas shown conceptually on Figure 5. | • Pasture cover.<br>• Weed species presence and density.<br>• Pest animal density. |
| Ecosystem and Land Use Sustainability Phase | Restore areas of self-sustaining native woodland and/or grassland. | • Species composition over time.<br>• Vegetation structure over time.<br>• Biometric analysis.<br>• Landscape Function Analysis. |
| | Rehabilitate pastoral land use areas to support sustainable grazing activities. | • Pasture cover over time.<br>• Ecosystem health and self-sustaining trajectory. |

# 7 REHABILITATION RESEARCH AND MONITORING

MACH Energy has identified a number of potential risks or barriers to rehabilitation success that need to be monitored, and where relevant, addressed by suitable mitigation measures throughout the life of the operation (Table 5).

**Table 5**
**Key Potential Risks or Barriers to Rehabilitation Success and Associated Research Considerations**

| Key Risk/Barrier | Key Research Questions | Addressed In |
|---|---|---|
| Landform Instability | • Identification of off-site geomorphological control sites to assist in landform design.<br>• Ongoing refinement of sub-catchment design and incorporation of micro-relief.<br>• Materials stability/suitability testwork (e.g. for use in drainage features, where required).<br>• Erosion and sedimentation generation in formed mine landform drainage lines and on differing slopes.<br>• Efficacy of alternative landform construction methods such as contour deep ripping. | Rehabilitation Strategy / MOP |
| Insufficient Suitable Soils | • Soil stripping planning and management.<br>• Soil stockpile inventory and management.<br>• Soil amelioration or augmentation trials. | |
| Inappropriate Materials Placement | • Geochemical verification programme.<br>• Amelioration trials and treatments (e.g. for dispersive materials).<br>• Mine planning/scheduling of suitable inert material availability. | |
| Failure to Establish Suitable Target Plant Species/Communities | • Use of sterile cover crops in initial rehabilitation.<br>• Selection of appropriate PCTs to target in rehabilitation.<br>• Establishment of performance and completion criteria for revegetation.<br>• Establishment of PCT control sites.<br>• Collection methods and availability of suitable seed stock.<br>• Seed spreading/sowing methods.<br>• Species/seed mixes to use for each PCT selected.<br>• Seed mixes and soil amelioration to be used in agricultural post-mining lands.<br>• Use of controlled burns and/or short term grazing in rehabilitation areas.<br>• Shrub and ground cover establishment methods, use of thinning/felling of excess canopy species.<br>• Efficacy of weed and pest control methods. | Biodiversity Management Plan / MOP |

This preliminary list would be expanded and augmented, and relevant mitigation measures would be implemented, where relevant, under the Rehabilitation Management Plan (MOP) and other key Environmental Management Plans (e.g. Biodiversity Management Plan) at the Mount Pleasant Operation.

These considerations would be the focus of on-site monitoring and the early identification and implementation of remedial measures, where this is required.

# 8 REFERENCES

Coal & Allied Operations Pty Ltd (2012) *Mount Pleasant Project Landscape Management Plan.*

Department of Environment, Climate Change and Water (2008) *Managing Urban Stormwater Soils and Construction Volume 2E Mines and Quarries.*

Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy (2013) *ESG3: Mining Operations Plan (MOP) Guidelines*.

Hydro Engineering Consultants (2017) *Mt Pleasant Coal Project: Final Void Water Balance*.

MACH Energy (2017) *Mine Optimisation Modification Environmental Assessment*.

NSW Mineral Council (2007) *Rehabilitation by Design Practice Notes*.

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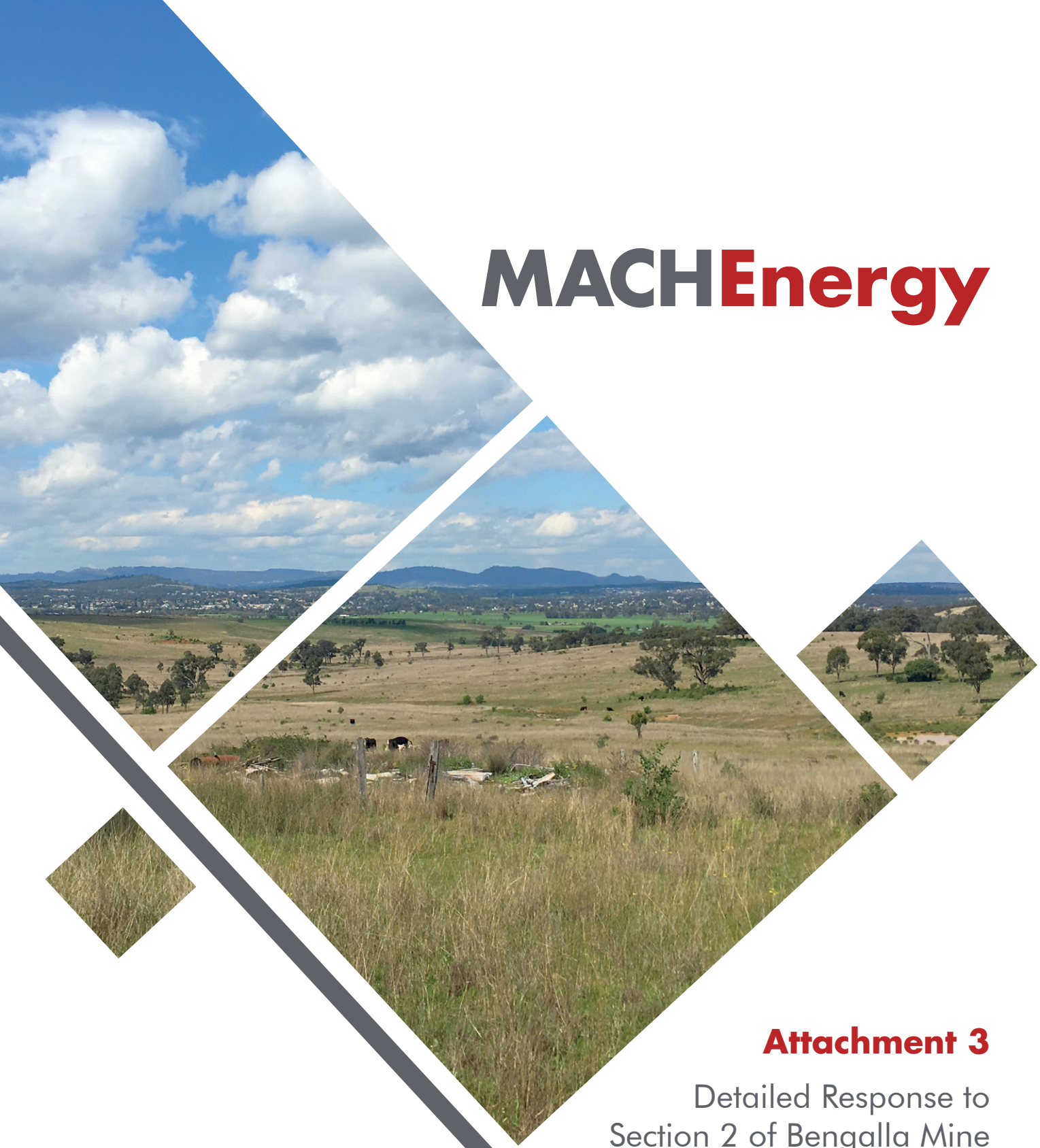


# Attachment 3

Detailed Response to Section 2 of Bengalla Mine Supplementary Objection

BMC has provided what it says is a ‘detailed history' of the Bengalla Mine and suggests this demonstrates that:

1. it was always intended that the Bengalla Mine would mine through the area south of Wybong Road where the Mount Pleasant rail and pipeline infrastructure is currently being constructed; and
2. the Mount Pleasant rail and pipeline infrastructure should yield to Bengalla’s westward mining when required.

However, BMC has overlooked a number of important facts, including:

1. The original development consent for the Bengalla Mine DA 211/93, which was approved on 7 August 1995, required the Bengalla Mine to negotiate an agreement with the Mount Pleasant Project to make the Bengalla rail loop available for future use by the Mount Pleasant Project if required.
2. The Mount Pleasant Submission to the Commission of Inquiry into the Mount Pleasant Mine dated June 1998 provided (at page 8.2):

   *The issues relating to shared funding and usage of the Bengalla Mine Link Road, the Mt Pleasant Rail Loop Corridor issues and amendments to the originally identified route of this road are acknowledged by both the Bengalla and Mt Pleasant mine owners and are intended to be resolved to the satisfaction of both parties.*
3. The Environmental Assessment dated 1 October 2010 which accompanied Mount Pleasant’s application to modify the Mount Pleasant Development Consent (MOD 1) to include an optional conveyor/service corridor between the Mount Pleasant Project area and the adjoining Bengalla Mine to the south as an alternative to the approved rail facilities provided that if the conveyor/service corridor option was to be pursued, a Plan of Management would be prepared in consultation with representatives from the Bengalla Mine to manage the potential interactions with Bengalla Mine.
4. On 11 May 2011 BMC and the Mount Pleasant Mine owner entered into a commercial agreement known as the Master Cooperation Agreement to manage the interactions between the two mines. The Master Cooperation Agreement entitles the Bengalla Mine owners to require Mount Pleasant to relocate its rail infrastructure to make way for the operations of the Bengalla Mine provided that certain requirement are met.
5. The Mount Pleasant MOD 1 application was approved on 19 September 2011. Appendix 3 to the Notice of Modification contains a Statement of Commitments which includes the following:

   *Should the conveyor/service corridor be pursued, a Plan of Management will be prepared in consultation with Bengalla Mine in order to manage activities associated with the facilities at Bengalla Rail Spur. The Plan of Management would include:*

   - *details of responsibilities for Bengalla Mine and Mount Pleasant Project;*
   - *commitments regarding compliance with relevant and respective development consents; and*
   - *details of management protocols to be performed by Bengalla Mine and Mount Pleasant Project ensuring compliance with consent conditions.*
6. BMC acknowledged the existence of the Master Cooperation Agreement in its Environmental Impact Statement dated September 2013 which was provided in support of the Continuation of Bengalla Mine Project (SSD 5170).

7. BMC again acknowledged the existence of this agreement in its Statement of Environmental Effects dated August 2015 which was provided in support of Bengalla MOD2 SSD 5170.
8. MACH Energy has given an undertaking to the Minister for Resources to comply with its relocation obligations under the Master Cooperation Agreement in satisfaction of condition 37 of the Mount Pleasant Development Consent.

Full details of the facts which BMC has omitted from its supplementary submission are contained in Table A3-1.

When all of the facts are taken into account, it is clear that:

1. It was always intended that the Bengalla Mine and the Mount Pleasant Mine would negotiate arrangements to allow the Mount Pleasant Project to access the Muswellbrook to Ulan rail line.
2. The Bengalla Mine and the Mount Pleasant Mine have in fact negotiated these arrangements pursuant to a commercial document known as the Master Cooperation Agreement.
3. The Master Cooperation Agreement comprehensively deals with the construction of the Mount Pleasant rail infrastructure south of Wybong Road and the relocation of that infrastructure in the event of a potential intersection with the operations of the Bengalla Mine.
4. MACH Energy has undertaken to the Minister to comply with its relocation obligations under the Master Cooperation Agreement in satisfaction of Condition 37 of the Mount Pleasant Development Consent.

## Table A3-1
## Extracts from Relevant BMC and MTP Documents

| Ref[8] | Action |
|---|---|
| **D.** | **Bengalla Mine Report to the Minister by the Commission of Inquiry DA211/93 – August 1994** |
| | **The Site and Locality** at page 5<br>"The seams of the Wittingham Coal Measures run beneath the site approximately northsouth and dip gently to the west. Significant coal resources exist in the area…Two potential open cut coal mining areas are adjacent to the Bengalla Authorisation. These are Mount Pleasant to the north and Mount Arthur North to the south of the site." |
| | **Conditions of Consent** at page 121<br>13. Coal Handling Transportation<br>"B) The Applicant may enter into an agreement whereby the rail loop shall be jointly used by others subject to arrangements acceptable to the Council and the Applicant with regard to the following:<br>i) The provision of an additional loading facility.<br>ii) The sharing of maintenance and operating costs.<br>iii) Contributions to amortise capital costs of the establishment of the loop.<br>iv) Access to the loop and the loading area." |
| | **Bengalla Consent DA 211/93 – 7 August 1995** |
| | **13. Coal Handling Transportation** at pages 6 – 7<br>B) Should the Mount Pleasant Project or another mining company require access to rail at the Bengalla rail loop the Applicant shall negotiate an agreement with the said company or companies whereby the rail loop can be made available for future use by the said project subject to arrangements acceptable to the State Rail Authority ("SRA"), the Applicant and the Council with regard to the following:<br>i) The provision of an additional loading facility.<br>ii) The sharing of maintenance and operating costs.<br>iii) Contributions to amortise capital costs of the establishment of the loop.<br>iv) Access to the loop and the loading area.<br>v) Accommodation of a coal transfer and handling system. |
| | **13. Coal Handling Transportation** at page 7<br>C) The Applicant shall design the Bengalla rail loop so as to provide for the accommodation of one additional loading bin or common bin with separate feed systems, as agreed in arrangements provided for in subclause B above. |
| **C.** | **Mt Pleasant Environmental Impact Statement DA92/97 – 5 September 1997** |
| | **Volume 1 – Section 5.1.2 - Overview of the Proposed Development** at pages 5.2 – 5.3<br>*"iii Assessment of Infrastructure Alternatives*<br>A preliminary assessment examined 33 infrastructure layouts to service the mine, based on conventional mine planning. These included three different locations and a number of options for transporting ROM and product coal. The initial 33 options were amalgamated to a short list of 11 based on similarities in environmental impacts. A further option examined at this stage placed the infrastructure outside the Mount Pleasant Authorisation.<br>The eastern boundary of the Authorisation was favoured for infrastructure and a rail loop with loading facilities, based on economic viability, technical feasibility and environmental acceptability.<br>An initial Planning Focus meeting held in March 1995 gave control authorities a preliminary overview of the proposal and associated environmental issues. Mine planning and environmental impact assessment work advanced during 1995 and early 1996.<br>Muswellbrook Shire Council then expressed reservations about having mine infrastructure on the eastern side of the mine. Consequently, a Joint Working Party was established by Coal & Allied and Council under the guidance of an independent facilitator. The working party, which included mine planners and infrastructure designers, sought to reach an outcome that met local community needs, while still ensuring the economic viability of the mine.<br>Other infrastructure locations and rail access options on the western side of the site were examined. One of these was a joint user facility with the proposed Bengalla Mine, while another connected to the Bengalla Mine rail loop by overland conveyor. |

8 References as per Table 1 of Bengalla's Supplementary Submission. Where a reference is not included, the document is not referred to in Table 1 of Bengalla's Supplementary Submission.

## Table A3-1 (Continued)
## Extracts from Relevant BMC and MTP Documents

| Ref | Action |
|---|---|
| **C. (Cont.)** | **Mt Pleasant Environmental Impact Statement DA92/97 – 5 September 1997 (Cont.)** |
| | Approval of the Bengalla project in 1996 paved the way for an immediate commencement of its infrastructure and rail loop. This meant that Bengalla could not commit to a joint user facility because Mount Pleasant could not be developed in time.<br>*iv. The Proposal*<br>Coal & Allied therefore proposed that mining infrastructure be located in the southwest corner of the site. This was about twice as far from Muswellbrook residential areas as the original proposal. Relocating mine infrastructure to the southwest changed access to the pit and lead to a rail loop to the south of the Mount Pleasant infrastructure area. This could be connected to the mine surface facilities by an overland conveyor." |
| **G.** | **Mt Pleasant Submission to the Commission of Inquiry into Mt Pleasant Mine DA 92/97 – June 1998** |
| | **Section 2.4 Project evolution and negotiations with Council regarding surface facilities** at page 2.3<br>"Other infrastructure locations and rail access options on the western side of the site were examined. One of these was a joint user facility with the proposed Bengalla mine, while another connected to the Bengalla mine rail loop by overland conveyor.<br>Approval of the Bengalla project in 1996 paved the way for an immediate commencement of its infrastructure and rail loop. As a consequence, Bengalla was unable to commit to a joint user facility as Mount Pleasant could not be developed in time.<br>Coal & Allied therefore proposed that mining infrastructure be located in the south-west corner of the site. This was about twice as far from Muswellbrook residential areas as the original proposal. Relocating mine infrastructure to the south-west changed access to the pit and lead to a rail loop to the south of the Mount Pleasant infrastructure area. This will be connected to the mine surface facilities by an overland conveyor." |
| | **Section 8.1 Impacts on the rail corridor** at page 8.2<br>"For the Mount Pleasant Project the major potential issue for rail transport is the capacity of the rail system to accommodate additional coal production, not only from the Mount Pleasant Mine, but also from other developing mines such as Bengalla and Kayuga. These will also access the rail system to the north or west of Muswellbrook." |
| | **Section 8.7 Response to EIS submissions** at page 8.12<br>"The issues relating to shared funding and usage of the Bengalla Mine Link Road, the Mt. Pleasant Rail Loop Corridor issues and amendments to the originally identified route of this road are acknowledged by both the Bengalla and Mt. Pleasant mine owners and are intended to be resolved to the satisfaction of both parties." |
| | **Notice of Modification for Bengalla DA 211/93 – 9 November 2006** |
| | **Coal Handling Transport** at page 14<br>"40. Should the Mount Pleasant coal mine or another mining company require access to rail at the Bengalla rail loop, the Applicant shall negotiate an agreement with the said company or companies whereby the rail loop can be made available for future use by the said development subject to arrangements acceptable to the ARTC, the Applicant and the Council with regard to the following:<br>(a) the provision of an additional loading facility;<br>(b) the sharing of maintenance and operating costs;<br>(c) contributions to amortise capital costs of the establishment of the loop;<br>(d) access to the loop and the loading area; and<br>(e) accommodation of a coal transfer and handling system." |
| | **Environmental Assessment for Application to modify Mt Pleasant Consent DA 92/97 MOD 1 – 1 October 2010** |
| | **Proposed modifications – Conveyor/service corridor** at pages 20 - 22<br>"The proposal includes provision of the optional conveyor/service corridor as an alternative to the rail facilities. Only one of the two options (i.e rail facilities or conveyor/service corridor) would be constructed. While consent for the rail facilities will be retained, the application seeks approval for a conveyor/service corridor as an alternative. The preferred option will be selected following further design analysis<br>…. |

## Table A3-1 (Continued)
## Extracts from Relevant BMC and MTP Documents

| Ref | Action |
|---|---|
| | **Environmental Assessment for Application to modify Mt Pleasant Consent DA 92/97 MOD 1 – 1 October 2010** |
| | The optional conveyor/service corridor is located to the west of the existing Bengalla Mine on land predominately owned by Bengalla Mine and, in some locations, outside the existing Mount Pleasant Project development consent boundary. The conveyor/service corridor would be approximately 6.7km in length and 30m in width (subject to detailed design and infrastructure layout configuration). The corridor would include the conveyor, service road and associated drainage infrastructure. The total disturbance area associated with the conveyor/service corridor would be approximately 20ha. The area of the conveyor and associated infrastructure occupies a disturbance footprint that is approximately 7.3ha less than the approved area of disturbance associated with the rail facilities.<br><br>The alignment and final design of the conveyor/service corridor are within an envelope to provide flexibility for siting during detail design, giving consideration to the potential footprint for a future extension of mining at Bengalla Mine as well as environmental, terrain and engineering parameters (refer to Figure 3.2). It is likely that the majority of the conveyor would be overland, with sections elevated as dictated by terrain and engineering parameters.<br><br>The conveyor/service corridor is situated over mining leases held by Bengalla Mine. As such, the proposed optional conveyor/service corridor is proposed above a coal resource and if Bengalla Mine applies in the future to extend mining operations into areas of which the conveyor/services are constructed, Mount Pleasant Project will enter into discussions in relation to the infrastructure.<br><br>Condition 7.1(3) of the development consent contemplates relocation of the approved rail facilities should Bengalla Mine extend further to the west. Coal & Allied is seeking that this condition be amended to include the optional conveyor/service corridor, as referenced in Section 3.2.4.'<br><br>…<br><br>Should the conveyor/service corridor option be pursued, a Plan of Management would be prepared to manage the potential interactions with Bengalla Mine regarding the use of facilities at Bengalla Rail Spur. The Plan of Management would be prepared in consultation with representatives from Bengalla Mine." |
| | **Table 7.1 Commitments** at page 80<br><br>"Should the conveyor/service corridor be pursued, a Plan of Management will be prepared in consultation with Bengalla Mine in order to manage activities associated with the facilities at Bengalla Rail Spur. The Plan of Management would include:<br>- details of responsibilities for Bengalla Mine and Mount Pleasant Project;<br>- commitments regarding compliance with relevant and respective development consents; and<br>- details of management protocols to be performed by Bengalla Mine and Mount Pleasant Project ensuring compliance with consent conditions." |
| | **Mount Pleasant Project Modification – Response to Submissions – December 2010** |
| | "The intention of the modification is for the alignment of the conveyor/service corridor to occur anywhere within the envelope to provide flexibility for siting during detailed design, giving consideration to the potential footprint for a future extension of mining at Bengalla Mine as well as environmental, terrain and engineering parameters." (pages 22 – 23) |
| | **Bengalla Mt Pleasant Master Cooperation Agreement – 5 May 2011** |
| **N.** | **Mt Pleasant MOD1 DA92/97 Secretary's Assessment Report to the Planning Minister – September 2011** |
| N1 – N2 | **2. Proposed Modification** at page 3<br><br>"Conveyor/Service Corridor<br><br>Coal & Allied is seeking approval for a conveyor/service corridor to transport coal from Mt Pleasant mine to the existing rail facilities at Bengalla mine. The conveyor/service corridor is proposed as an alternative to the approved rail loop and loading facilities. The preferred option would be selected following detailed design and only one option would be constructed.<br><br>…<br><br>Part of the proposed conveyor/service corridor is located across the neighbouring Bengalla mine, which is operated (but not owned) by Coal & Allied, but outside the Mt Pleasant development consent boundary. Accordingly, Coal & Allied proposes to modify the consent boundary to accommodate the proposed corridor. |

## Table A3-1 (Continued)
## Extracts from Relevant BMC and MTP Documents

| Ref | Action |
|---|---|
| | **Bengalla Mt Pleasant Master Cooperation Agreement – 5 May 2011 (Cont.)** |
| **N. (Cont.)** | **Mt Pleasant MOD1 DA92/97 Secretary's Assessment Report to the Planning Minister – September 2011 (Cont.)** |
| N1 – N2 (Cont.) | The location of the conveyor within the proposed corridor would be selected following detailed design, but would consider:<br>- existing consent conditions requiring relocation of the rail loop should Bengalla mine expand westwards;<br>…<br>*Infrastructure Envelope*<br>Coal & Allied proposes to locate its supporting infrastructure for the mine within a footprint area (shown in orange hatching on Figure 3), rather than the specific locations detailed in the EIS and approved in the consent. This would provide flexibility in the final layout of infrastructure such that it supports the preferred coal transport option. Specific infrastructure locations would be determined following a detailed design process.<br>There would be no change to approved construction activities within the infrastructure envelope." |
| **N.** | **Notice of Modification 1, DA 92/97 – 19 September 2011** |
| N6 | "38. The Applicant shall, at its own expense:<br>(a) construct a bridge to carry the Bengalla Link Road over the proposed Mount Pleasant rail loop, in consultation with the operators of the Bengalla Mine" |
| N5 – N6 | **Appendix 3 - Statement of Commitments**<br>"Should the conveyor/service corridor be pursued, a Plan of Management will be prepared in consultation with Bengalla Mine in order to manage activities associated with the facilities at Bengalla Rail Spur. The Plan of Management would include:<br>- details of responsibilities for Bengalla Mine and Mount Pleasant Project;<br>- commitments regarding compliance with relevant and respective development consents; and<br>- details of management protocols to be performed by Bengalla Mine and Mount Pleasant Project ensuring compliance with consent conditions." |
| **O** | **Bengalla Mine MOD4 DA211/93 – Secretary's Environmental Assessment Report – October 2011** |
| O1 | "The mine is located in an area dominated by coal mining and agricultural activity, including … the Mount Arthur mining complex located to the southeast of the mine, across Denman Road, and the approved Mount Pleasant mining project located directly north of the mine." (Page 1) |
| | **Notice of Modification – DA 211/93 MOD 4 – 7 October 2011** |
| | **Limits on consent** at page 5<br>"7. The Applicant shall:<br>(a) transport all coal from the site by rail; and<br>(b) restrict train movements from the Bengalla load point to a maximum of 16 laden trains a day, unless otherwise approved by the Director-General.<br>*Note: Laden trains may contain coal from either the development or the adjoining Mt Pleasant Coal Mine."* |
| | **Coal Handling Transport** at page 16<br>"30. If the Mount Pleasant coal mine, or other mining operation, requires the use of the Bengalla rail loop, then the Applicant shall negotiate an agreement to facilitate the future use. This agreement must:<br>(a) be dependent on the available capacity of the rail loop;<br>(b) be developed in consultation with the ARTC and Council;<br>(c) consider the requirements for:<br>• the provision of an additional loading facility;<br>• the sharing of maintenance and operating costs;<br>• contributions to amortise capital costs of the establishment of the loop;<br>• access to the loop and loading area; and<br>• accommodation of a coal transfer and handling system." |

## Table A3-1 (Continued)
## Extracts from Relevant BMC and MTP Documents

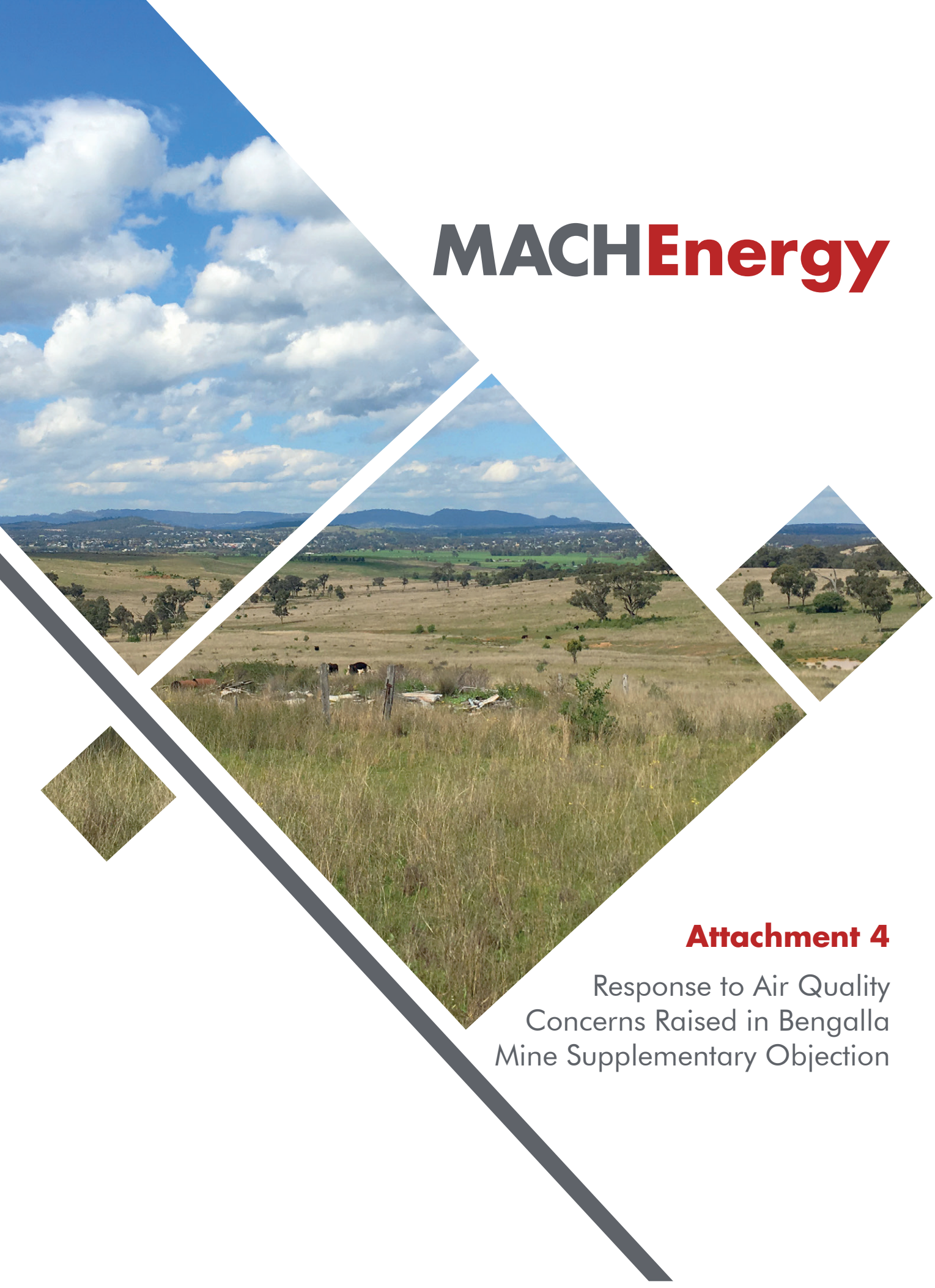
| Ref | Action |
|---|---|
| | **Director General's Requirements – Continuation of Bengalla Mine Project (SSD-5170) – 13 March 2012** |
| | "In addition, the EIS must include a detailed description of the development, including:<br>…<br>- likely interactions between the development and existing, approved and proposed mining operations in the vicinity of the site, particularly the approved but not yet operational Mt Pleasant mine and the Mt Arthur mine;<br>…<br>- details of interactions with the approval rail corridor for Mt Pleasant mine" |
| **P.** | **Bengalla Environmental Impact Statement for Bengalla SSD 5170 – September 2013** |
| | **Land use** at page iv<br>"The Mount Pleasant Project is wholly owned by Coal & Allied and located to the immediate north of the Project Boundary. The Mount Pleasant Project has approval for the construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities at a production rate of up to 10.5 Million tonnes per annum of Run of Mine coal to 2020. No coal mining has occurred at the site to date." |
| | **Coal Mining – Mount Pleasant Project** at pages 9 and 11<br>"The Mount Pleasant Project is wholly owned by Coal & Allied, subsidiary of Rio Tinto Coal Australia (RTCA). It is located to the immediate north of the Project Boundary. The Mount Pleasant Project was granted development consent (DA 92/97) in 1999, which was supported by the Mount Pleasant Mine Environmental Impact Statement (Mount Pleasant EIS) (ERM Mitchell McCotter, 1997). The Mount Pleasant Project has approval for the construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities at a production rate of up to 10.5 Mtpa ROM coal.<br>The Mount Pleasant Project physically commenced in 2004 with the construction of Environment Dam 1 (ED1). No other construction or coal mining has occurred to date.<br>In 2011, a modification to DA 92/97 was approved, supported by the 'Mount Pleasant Project Modification Environmental Assessment Report' (Mount Pleasant 2010 EA) (EMGA Mitchell McLennan, 2010). This modification allowed the mine infrastructure to be sited within an infrastructure envelope, as opposed to the specific location specified in the Mount Pleasant EIS. The modification also provided for the option of a conveyor / service corridor as an alternative to the approved rail facilities. The conveyor / service corridor passes through the Project Boundary.<br>In order to address potential cumulative issues associated with the Project and the Mount Pleasant Project, it has been assumed that further approvals will be granted to enable operations to continue beyond 2020. This assumption is intended to represent a potential 'worst case' scenario with consideration of potential cumulative environmental impacts. An assessment of the cumulative air quality, noise and traffic impacts associated with this potential worst case scenario has been applied to this EIS and is discussed in Section 8. Key Project interactions with the Mount Pleasant Project are discussed in detail in Section 4.12.<br>Coal and Allied and BMC have a protocol in place that will facilitate open cut mining by BMC to the south of Wybong Road within Mount Pleasant Mining Lease 1645. Consultation with Coal & Allied in relation to the Mount Pleasant Project is discussed in Section 6." |
| | **Product Transport** at page 55<br>"The existing Bengalla Rail Loop has sufficient capacity for the Project's planned increase in coal production up to 15 Mtpa. Forecast train movements to accommodate the Project will require up to 1,435 train movements per year and will not require any increase from approved levels (see Table 9). The Project will continue to facilitate coal from the Mount Pleasant Project via a conveyor upon its construction (or another approved method) to Bengalla Mine." |

## Table A3-1 (Continued)
## Extracts from Relevant BMC and MTP Documents

<table>
<tr><th>Ref</th><th>Action</th></tr>
<tr><td></td><td>
<u>Table 14 – Mount Pleasant Project Potential Interactions</u> at page 66<br>
Table 14 includes the following extracts:
<table>
<tr><th>Mount Pleasant Project</th><th>Interaction with the Project</th></tr>
<tr><td>Mining of the Mount Pleasant Project<br>• Open cut coal mine to extract approximately 197 Mt of ROM coal over a period of 21 years<br>• Maximum rate of up to 10.5 Mtpa<br>• Approval valid until 22 December 2020</td><td>• The Mount Pleasant Project has been assessed in this EIS for cumulative purposes on the assumption that construction of the Mount Pleasant Project commences in Year 4 of the Project<br>• Mount Pleasant Project is consistent with that described in the Mount Pleasant EIS and Mount Pleasant EA and associated approval DA 92/97 (as modified)<br>• The Mount Pleasant Project obtains the relevant approval to continue mining in accordance with the above beyond 2020 at the same rate as currently approved</td></tr>
<tr><td>Rail and Service Corridor<br>• Rail alignment as presented in the MTP 1997 EIS and MTP 2010 EA<br>• Service Corridor as presented in the MTP 2010 EA<br>• Transport of coal from site by either (but not both) conveyor to Bengalla or rail via an onsite rail loop</td><td>• Mount Pleasant Project will enter into an agreement with the Minister for Mineral Resources, in consultation with BMC to facilitate the relocation of the Mount Pleasant rail loop or the conveyor / service corridor<br>• If the Mount Pleasant Project requires the use of the Bengalla rail loop then BMC will negotiate in relation to its future use</td></tr>
</table>
</td></tr>
<tr><td></td><td>
<u>Rail upgrades</u> at page 239<br>
“ARTC (2011) identified a number of deficiencies in the existing Hunter Valley rail network and has proposed upgrades to accommodate predicted increases in coal production in the region. BMC will consult with ARTC regarding the scheduled implementation of rail infrastructure upgrades and the allocation of train path availability.<br>
BMC will also continue to liaise with the Mount Pleasant Project with regard to the rail infrastructure needs and rail traffic generation.”
</td></tr>
<tr><td></td><td>
<u>Appendix G – Air Quality and Greenhouse Gas Impact Assessment</u> at page 46<br>
“For the purposes of this assessment it has been conservatively assumed that construction of the Mount Pleasant Project commences by the end of 2015 and initial coal extraction from 2017. We note that the Mount Pleasant Project Development Consent is due to expire in 2020, however to assess potential cumulative worst case scenarios at the later stages of the Project we have assumed mining operations at the Mount Pleasant Project continue for a 21 year period in general accord with the approved mine plans presented in the EIS. Alternatively, we have also assessed impacts in the absence of the Mount Pleasant Project commencing.”
</td></tr>
<tr><td></td><td>
<u>Appendix Q – Rail traffic generation from other mine projects – Mount Pleasant Project</u> at page 77<br>
“The product coal would be loaded to rail wagons either via a new railway loop from the Muswellbrook to Newcastle Railway Line (to the west of the Bengalla Mine loop), or alternatively, it would be conveyed to the existing railway loop at Bengalla Mine. A total of three loaded train movements would be generated per day, or six movements when accounting for the empty inbound movements.<br>
BMC will continue to liaise and collaborate with Mount Pleasant Coal Project with regard to the rail infrastructure needs and traffic generation for both projects.”
</td></tr>
<tr><td></td><td>Bengalla’s Response to Submissions to Bengalla Continuation Project – March 2014</td></tr>
<tr><td></td><td>
“For the neighbouring Mount Pleasant Project which has not yet commenced, it has been conservatively assumed that construction activities will commence in Year 4, with coal extraction commencing in Year 8 of the Project and generally as described in the Mount Pleasant 1997 EIS.<br>
Despite the current Mount Pleasant DA 92/97 expiring in 2020, it has been assumed for the purposes of modelling, that Coal & Allied would seek the relevant approval to enable future mining and as a result has been conservatively considered to be operational for the duration of the Project.
</td></tr>
</table>

## Table A3-1 (Continued)
## Extracts from Relevant BMC and MTP Documents

| Ref | Action |
|---|---|
| | **Bengalla's Response to Submissions to Bengalla Continuation Project – March 2014 (Cont.)** |
| | In order to assess worst case cumulative air quality impacts of Mt Arthur Coal Mine and Xstrata Mangoola operations, it has all been conservatively assumed that these operations will continue until the end of the Project life at existing approved rates (which are greater than production levels currently occurring). As such it would be anticipated that the air quality predictions presented in the EIS as conservative." (Pages 154 – 155) |
| | **Bengalla Continuation Project SSD 5170 Secretary's Environmental Assessment Report – November 2014** |
| | **Assessment** at page ii<br>"The Mt Pleasant mine has been slow to develop and there is only five years left on the current consent. This means only a small part of the approved Mt Pleasant mine could be developed under the existing consent, unless a further approval was sought for additional mining. Consequently, some of the cumulative impacts of the project may not be as significant as predicted." |
| | **Project justification** at page 5<br>"Significant coal resources have been identified to the west and north of the current Bengalla mine in an area that has been strategically earmarked by NSW Government for the potential expansion of mining operations in the Hunter Valley region (see Section 2)." |
| **U.** | **Bengalla MOD2 SSD 5170 – Statement of Environmental Effects – August 2015** |
| | **Interaction with the Mount Pleasant Project** at page 18<br>"The Mount Pleasant Project is wholly owned by Coal & Allied Operations Pty Ltd and is located immediately north of Bengalla. The Mount Pleasant Project holds DA 92/97 (as modified) which is supported by the *Mount Pleasant Mine Environmental Impact Statement* (MTP EIS) (ERM Mitchell McCotter 1997) and *Mount Pleasant Project Modification Environmental Assessment Report* (MTP EA) (EMGA Mitchell McLennan 2010).<br>The construction of the western portion of the Northern Clean Water Diversion Levee will be located partially within the approved Mount Pleasant Infrastructure Area Envelope. An agreement with Coal & Allied Operations Pty Ltd and BMC is in place which facilitates proposed activities at each operation.<br>In addition, should the Mount Pleasant Project commence Coal & Allied have indicated that excavated material from the CW1 Emplacement Area may be utilised for activities associated with that project. Coal & Allied would seek any required approvals separately for the use of this material." |
| **V.** | **Bengalla MOD2 SSD 5170 Secretary's Environmental Assessment Report to Minister – 1 July 2016** |
| V1 | "The area surrounding Bengalla Mine is dominated by mining, agriculture and rural residential land uses. There are a number of operating and proposed coal mines nearby, including the existing Mt Arthur Coal Mine to the south across the Hunter River and Denman Road, and the proposed Mt Pleasant Coal Mine to the north across Wybong Road." (Page 2) |
| | **Deed of Undertaking – 7 July 2016** |
| | On 7 July 2016 the Mount Pleasant Mine owner (Coal and Allied Operations Pty Ltd) entered into a Deed of Undertaking with the Minister for Resources, Industry and Energy in satisfaction of condition 37 of the Mount Pleasant Development Consent by which it undertook to the Minister to comply with its obligations under the Master Cooperation Agreement in relation to the relocation of the Mount Pleasant rail infrastructure. |
| **Y.** | **Bengalla MOD3 SSD 5170 Secretary's Environmental Assessment Report – 23 December 2016** |
| Y2 | "The area surrounding Bengalla is dominated by mining, agricultural and rural residential land uses. There are a number of operating and proposed coal mines nearby, including the existing Mt Arthur Coal Mine to the south and the Mt Pleasant Coal Mine (MTP) to the north, which is approved but not yet operating." (Page 2) |
| | **Novation of the Deed of Undertaking – 25 May 2017** |
| | The Deed of Undertaking entered into by Coal & Allied Operations Pty Ltd with the Minister for Resources, Industry and Energy dated 7 July 2016 was novated to MACH Energy on 25 May 2017. |



MACHEnergy

# Attachment 4

Response to Air Quality Concerns Raised in Bengalla Mine Supplementary Objection

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28 August 2017

Chris Lauritzen
General Manager – Resource Development
MACH Energy Australia Pty Ltd

**RE: Response to Review of "Mount Pleasant Operation Mine Optimisation Modification Air Quality and Greenhouse Gas Assessment"**

Dear Chris,

Thank you for engaging us to consider the issues raised in the Bengalla Mine review of the "Mount Pleasant Operation Mine Optimisation Modification Air Quality and Greenhouse Gas Assessment". This Air Quality Impact Assessment (AQA) for the Project was prepared for MACH Energy Australia by Todoroski Air Sciences, dated May 2017.

The review of the AQA was commissioned by Bengalla Mining Company (BMC) and conducted by Pacific Environment, and is dated 17 July 2017 (the Review). Each of the issues raised in the review are set out and addressed in a corresponding row in the table below.

However, it is also important to consider the overall situation, given that the Project has lower activity, a modern mine design with less emission and less impact than the approved mine, and is commencing operation many years later than originally scheduled (i.e. when BMC is further away from the area of potentially cumulatively impacted receptors). As greater air quality emissions for the Mount Pleasant Operation have previously been considered in various cumulative assessments, there would not appear to be a means for the Modification to cause an adverse material effect on BMC which has not already been assessed or considered.

It is noted that recent, more stringent EPA criteria which were applied in the AQA can indeed lead to more potential for cumulative impacts to arise. However this has been the case across NSW since the new criteria were introduced in early 2017, and is not specifically related to the Project.

Overall, we consider that the thrust of what is implied in the Review is incorrect and is not supported by the facts or information provided in the AQA, or a review of the overall assessment situation.

The Pacific Environment review thus presents BMC and any other interested parties with an invalid appraisal of the situation.

Please feel free to contact us if you would like to discuss or clarify any aspect of this report.

Yours faithfully,

Todoroski Air Sciences

Aleks Todoroski

Philip Henschke

**Table 1: Response to issues raised for Mount Pleasant Optimisation Modification**

| Issue | Response |
|---|---|
| **Review Section 2 - Introduction** | |
| *As far as can be ascertained, there is no dispersion modelling for the Mount Pleasant Operations in the public domain, other than that completed for the 1997 EIS that was completed using the dispersion model called ISC.* | Since the writing of the 1997 EIS, and a subsequent minor modification, the Mount Pleasant Project has undergone extensive change to incorporate modern operational requirements with regard to mine design and dust management.<br><br>While not publically available, these studies have been conducted using more contemporary methods than employed for the 1997 EIS (e.g. dispersion modelling using the CALPUFF dispersion model).<br><br>It is noted that the Review does not state that the CALPUFF dispersion model is inappropriate for use in a contemporary study. |
| **Review Section 3 - Mine plan selection** | |
| *The AQA only provides indicative mine plans for each of these scenarios. It does not provide details of where specific sources were located for the dispersion modelling.* | **Figure 1** to **Figure 3** present mine plans for each of the modelled scenarios with the modelled source locations represented by blue circles. |
| *The boundary shown on the figures in the EA does not match that shown in the figures from the AQA.* | There are various boundaries for the various project elements. The boundary shown in the AQA is per the Schedule of Land presented as Appendix 1 of Development Consent DA 92/97. This is clearly stated in the figures in the AQA. Similarly, the boundary in the EA is clearly identified as the mine lease boundary for the Mount Pleasant Operations. |
| *None of the indicative mine plans in either the AQA or EA show any activity on the emplacement extension that is shown on Figure 1 and for which this modification is being sought.* | The main purpose of the emplacement extension is to generate a more visually appealing landform for the emplacement that would blend with the natural landscape. Due to the local topography, the emplacement extension area would comprise of a modest area and would be completed in a short period of time. The potential dust impacts from this activity would be short-lived and would not be any greater than those assessed in the AQA. In any case, it is noted that emissions were modelled from the emplacement extension area, as shown on **Figure 1**. |
| *When comparing the indicative mine plan in the EA with AQA Scenario 1 (2018), the AQA shows an area of rehabilitated land that is not shown in the EA.* | Figure 5-2 of the AQA and **Figure 1** present the proposed area for rehabilitation for Scenario 1. |
| *With the exception of the difference in the boundary noted above, the indicative mine plans for 2021 and 2025 appear to be similar in both the EA and AQA. However, without detailed information on the location of source, it is not possible to determine if activities have been accurately represented in the AQA.* | Refer to **Figure 2** to **Figure 3**. |

<table>
<tr><th>Issue</th><th>Response</th></tr>
<tr><td colspan="2">Review Section 4 – Selection of meteorological data</td></tr>
<tr><td>The justification for the selection of 2015 as being a representative year appears to be based entirely on data from the Bureau of Meteorology (BoM) Automatic Weather Station (AWS) at Scone, rather than an analysis of the local Muswellbrook and Mount Pleasant data.</td><td>The NSW EPA requires an analysis of five years of meteorological data to determine the most representative year for modelling purposes. The available local weather stations did not have sufficient data available at the time of the assessment to conduct the required analysis. The nearest available data from the Scone AWS provides a suitable dataset for comparing the required five contiguous years of meteorological data to determine which year most closely aligns to the long-term trends, and is most suitable for application in the modelling.</td></tr>
<tr><td>The selection of 2015 as a representative year appears to have been selected purely on “…a higher percentage of winds originating from the northwest quadrant compared to the other years and for this assessment would likely show a potential worst-case impact for receptor in Muswellbrook”. This higher percentage of northwest winds based on information from Scone and may not be necessarily be the case for Mount Pleasant, which is more relevant in this case.</td><td>The selection of a representative meteorological year was completed based on a number of parameters.<br><br>Notwithstanding, one specific and noteworthy consideration for this project, as outlined in the AQA, is that winds blowing from the NW quadrant (i.e. generally from the mine to receptors) need to be adequately characterised. Table 2 indicates that the publically available data from the local weather stations in the 2015 calendar period have a high percentage of winds from the northwest quadrant.<br><br>Table 2: Percentage of winds originating from NW quadrant, available local data
<table>
<tr><th>Weather station</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th></tr>
<tr><td>Muswellbrook NW</td><td>19%</td><td>20%</td><td>19%</td><td>20%</td></tr>
<tr><td>Muswellbrook</td><td>32%</td><td>32%</td><td>29%</td><td>32%</td></tr>
</table></td></tr>
<tr><td>The selection of 2015 on that basis is not supported by the graphical analysis of meteorological conditions at Scone Airport AWS shown in Figure B-6 (replicated as Figure 5 for ease of reference)…<br><br>…Wind directions from the northwest quadrant are between approximately 310 and 320 degrees (as circled in red). On the basis of this figure it would appear that the 2015 data are at the 75th percentile of all the data. This therefore does not support the statement in the AQA that a higher percentage of winds originate from the north western quadrant in 2015.</td><td>It is noted that a quadrant, by definition, is one quarter of a circle and therefore represents a 90° arc, not a smaller arc such as the 10° to 20° arc highlighted by the reviewer.<br><br>The Review appears to be interpreting the 75$^{th}$ percentile as a 25$^{th}$ percentile. The frequency of winds in the arc highlighted by the reviewer are near the 75$^{th}$ percentile value, and other winds that make up the entire northwest quadrant are generally in the range between the 75$^{th}$ percentile and the maximum, which indicates a greater than typical prevalence of winds from this quadrant occur in 2015.</td></tr>
<tr><td colspan="2">Review Section 5 – Determination of background levels</td></tr>
<tr><td>…the report does not say whether this is the average across the years 2012 -2015, or the average across all the monitors for a particular years.</td><td>The average difference between measured and predicted $PM_{10}$, TSP and deposited dust levels from each of the monitoring points across the years 2012-2015 was considered from the other non-modelled dust sources. This removes the uncertainty for the reviewer regarding the 2015 calendar year.</td></tr>
</table>

| Issue | Response |
|---|---|
| *If the monitoring data for 2015 have been used to determine background, which is likely but not specifically stated, then there are problems associated with that.* | As noted above, background levels were derived based on the entire 2012 to 2015 period. |
| *The annual rainfall in 2015 was significantly higher than in the previous four years, and also the long-term average (see Figure 6).* | As noted above, background levels were derived based on the entire 2012 to 2015 period. |
| *In addition, there is no presentation of the estimated emissions from the other mining operations used in this modelling to determine background levels. This information is criterial in reviewing whether those emission estimates were reasonable.* | The emission estimates for the other mining operations, included in the modelling to determine background levels, were calculated for each on the basis of the reported production levels set out in the annual review report for each of the operations, and the data set out in the latest public air quality assessment for each operation. |
| *Background (non-modelled) $PM_{10}$ levels have been determined using a variable grid over the modelling domain. While this in itself is not unreasonable, there is no relevant information presented with which to verify the approach.*<br>*The report does not specify which year of data was used (as discussed above there are problems with using 2015).*<br>*The report does not indicate either the monitoring locations or the measured values at these locations that were used to create the variable grid.* | The AQA provides information at Appendix D, page D-9 outlining how and where, which locations, and why a valid variable grid representing the background data is used in the modelling domain.<br><br>The review incorrectly assumes only one year was used. The AQA states that the measured data during 2012 to 2015 was used.<br><br>The modelling domain applies a variable background grid, over an area within which the following monitors with publically available monitoring data would reasonably represent the prevailing background levels in the key areas of interest for the project:<br>• OEH - Muswellbrook North West<br>• OEH - Muswellbrook<br>• Bengalla – PM10-1<br>• Bengalla - PM10-2<br>• MAC – DCO2<br>• MAC – DCO3<br>• MAC – DCO4. |

| Issue | Response |
|---|---|
| *The method used for determining annual average background (non-modelled) $PM_{2.5}$ is likely to significantly underestimate cumulative $PM_{2.5}$ impacts, particularly in Muswellbrook.* | The methodology applied for assessing $PM_{2.5}$ cumulative impacts is specifically designed to provide accurate information at the most likely potentially impacted sensitive receptors.<br><br>The well known impacts of wood smoke (and other urban anthropogenic emissions) that appear in the monitoring data collected within the urban areas of Muswellbrook affect receptors that are not the focus of the assessment, as they are spatially removed from and generally not significantly affected by the Project.<br><br>As discussed in the AQA, applying the $PM_{2.5}$ monitoring data collected within the urban areas of Muswellbrook to the more rural areas would provide an unrealistic estimate of background levels in these key areas. |
| **Review Section 6 – Emissions from Mount Pleasant Operations** | |
| *There are no emissions from the drilling or blasting of coal, which differs from the 1997 EA.* | The AQA is based on the currently proposed Project, and drilling and blasting of coal is not anticipated. |
| *Whilst it has been confirmed that the correct emission factor equation were likely to have been applied to calculate the emissions (as presented in Tables D-2 to Table D-5 of the AQA), the following equations are incorrect in Table D-1:*<br>• *$PM_{2.5}$*<br>  ○ *Dozers on overburden*<br>  ○ *Dozers on coal*<br>  ○ *Loading/emplacing coal*<br>  ○ *Grading roads* | As confirmed by the reviewers, there is a transcription error in this table, and the correct equations have been used in the study.<br><br>Table D-1 of the AQA including the correctly transcribed equations is presented as **Table 3** below. |
| *Two different emission factor equations have been applied account for wind erosion. … In addition, there is an inconsistency in the assumption related to the silt content for topsoil.* | Two different emission factors are used for different activities with different physical mechanisms for dust generation (i.e. active storage piles as opposed to general exposed areas). Contrary to the reviewer's statement, this is an often used methodology in estimating emissions from the different types of wind erosion.<br><br>There is no error or inconsistency in how the emission factors are applied. Different silt levels are used for surfaces and the bulk material being handled.<br><br>An average number of rain days was utilised to estimate emissions from active stockpiles, not data from a single year (e.g. 2015).<br><br>The Review calculated that the approach would overestimate the emissions, and these comments are noted. |

| Issue | Response |
|---|---|
| *There is limited information in the AQA related to the dust emission controls to be applied. … There are also concerns related to the assumed controls on overburden emplacement area and the open pit for the following reasons:*<br>• *Overburden emplacement areas (OEAs)*<br>  ○ *A 21% control has been applied to the entire overburden emplacement area based on 30% control over 70% of the area.*<br>• *Open pit*<br>  ○ *An 18% control has been applied to the entire open pit area based on 30% control over 60% of the area.* | Dust emission controls to be applied at the Mount Pleasant Operations are detailed in Section 5.5 and Appendix D of the AQA.<br><br>No controls are applied to the actively operating areas in the overburden emplacement areas (OEA) and pit. The active area is approximately 30% of the total OEA and 40% of the total pit area.<br><br>Control for primary rehabilitation, watering of exposed surface and surface crusting of the OEAs and inactivity and surface crusting/ stabilisation of the open pit is applicable only to the to the inactive areas.<br><br>Given the size of inactive areas that would experience controls as described above, applying no control to the total area of the OEAs or pits would significantly misrepresent the potential emissions from these areas. |
| *Table 3 compares the TSP emissions from the Mount Pleasant Operations as reported in the AQA, compared with the assumptions applied in other recent air quality assessments for nearby mining operations. All the emissions in the Mount Pleasant Operations AQA are lower than in any other recent air assessment and no justification or explanation for these differences is provided.* | In Table 3 of the Review, the value of 3,013,405 kg/year presented for Scenario 3 - per Bengalla AQA is not correct and should be 5,250,000 kg/year, which is the same as that applied in other assessments.<br><br>The information presented in Table 3 of the Review compares the Project emissions with other's assumed Project emission values, which would be based on the publically available 1997 mine plans. It is normal for there to be differences in what others assume in the absence of specific information about the actual Project.<br><br>The AQA assesses the currently proposed mine plan for the Mount Pleasant Operation, which represents a smaller portion of the currently approved operations at the mine, and thus generates less dust. |
| **Review Section 7 - Emissions from other mines** | |
| *…emissions from the Dartbrook Underground Mine should have been included AQA.* | As stated in the AQA, the Dartbrook mine is not operational and would not generate any emissions until it resumes activity.<br><br>Given the majority of activity at this underground mine will occur below the surface, there is little potential for excessive dust emissions.<br><br>The potential for material cumulative effects is therefore considered low. |

| Issue | Response |
|---|---|
| *When comparing the data in Table 4, it is apparent that the AQA assessment completed for Mount Pleasant has assumed significantly lower TSP emissions from Mt Arthur compared with those calculated from the Mt Arthur AQA and applied in the Bengalla AQA.* | The data for the Mt Arthur AQA presented in Table 4 of the Review, originates from an assessment that includes erroneous emission values, and was not accepted for the approval of that Project. The concurrent Bengalla AQA could only reference this erroneous assessment, which is why the Bengalla AQA is consistent with the erroneous data.<br>The error was corrected by Mt Arthur staff and their technical advisers in the subsequent cumulative Mt Arthur, Bengalla and Mangoola assessment, exemplified by the difference between the "original" and "revised" emission rates, as indicated in Table 4 of the Review.<br>The calculated emissions for Mt Arthur operations used in the AQA are consistent with the values for the approved Mt Arthur project, and only differ due to normal, expected factors such as the differing actual rates of activity, various mandated new dust reduction measures, and differences that arise due to different wind speeds in different years. |
| *Whilst not as significant as the differences in the Mount Arthur emissions, as shown in Table 5 and Table 6, when compared with those presented in the original documents stated as being the source in the AQA, it also appears as if emissions from both Bengalla (Todoroski Air Sciences, 2013a) and Mangoola (Todoroski Air Sciences, 2013b) have been adjusted. No details are provided in the AQA on how or why.* | There is no abnormal or unexpected inconsistency in the values in Table 5 and Table 6 in the review. As stated below each table in the review, differences arise due to re-calculation with differing meteorological conditions, and it is normal and reasonable to also expect differences to also arise when accounting for the various mandated new dust reduction measures etc. |
| *Whilst the location of the Drayton South Coal Project (that was refused on 22 February 2017) means any activities at this site would have minimal contribution to air quality at receptors in the Muswellbrook area, the assumed emissions from the Project in the Mount Pleasant AQA have been adjusted to include "… only those occurring within the modelling domain have been considered". No supporting evidence is provided in the AQA to allow the reviewers to comment on the appropriateness of the approach.* | The modelling domain that was used is clearly shown throughout the AQA, and as stated in the review, only the significant emissions generated within the domain by the Drayton operations are considered relevant to the assessment.<br>The remainder of the paragraph on page D-8 of the AQA being quoted in the review explicitly lists each activity at the Drayton South Coal Project considered in the assessment.<br>The review comment that these emissions would have minimal contribution in the Muswellbrook area is noted. |
| *It is considered that in isolation, and combined, these issues are likely to have resulted in the underestimation of air quality concentrations at sensitive receptors, in particular at Muswellbrook, as a result of both Mount Pleasant operations alone and cumulatively.* | As outlined in the AQA, the dispersion modelling is considered inherently conservative, for reasons including;<br>• emission estimation uses conservative assumptions as appropriate (e.g. maximum mining rates used); and<br>• dispersion modelling is conservative (e.g. effect of rainfall not included).<br>The above responses to the review indicates no changes to the assessment are warranted and therefore the statement in the AQA remains valid. |

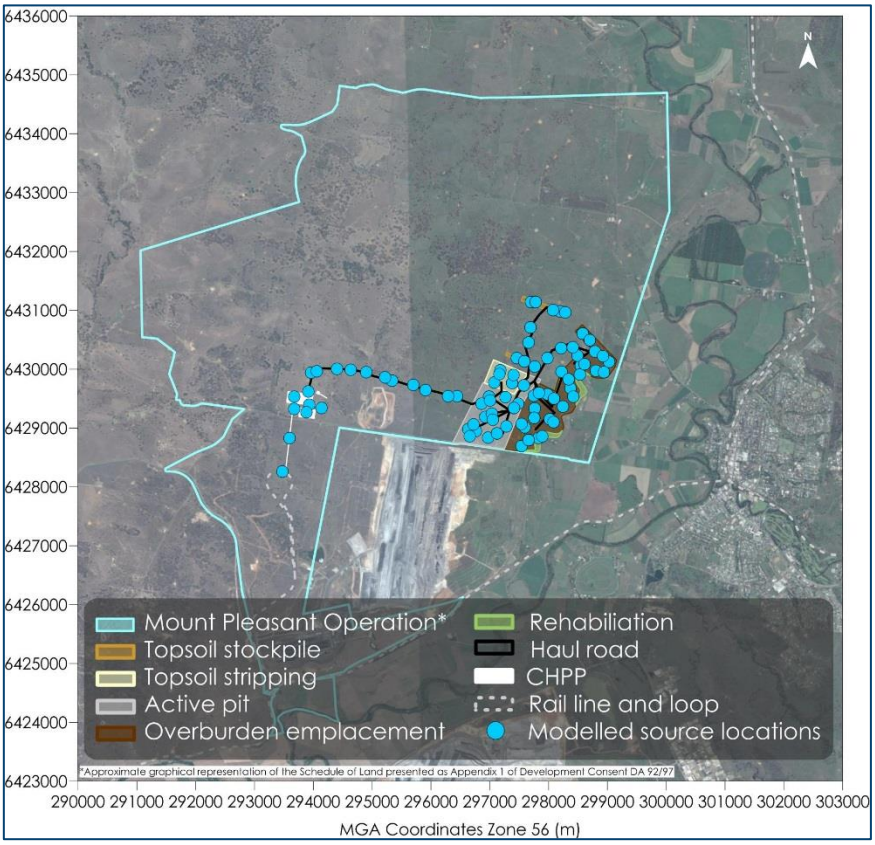



**Figure 1: Indicative mine plan for Scenario 1 with modelled source locations**

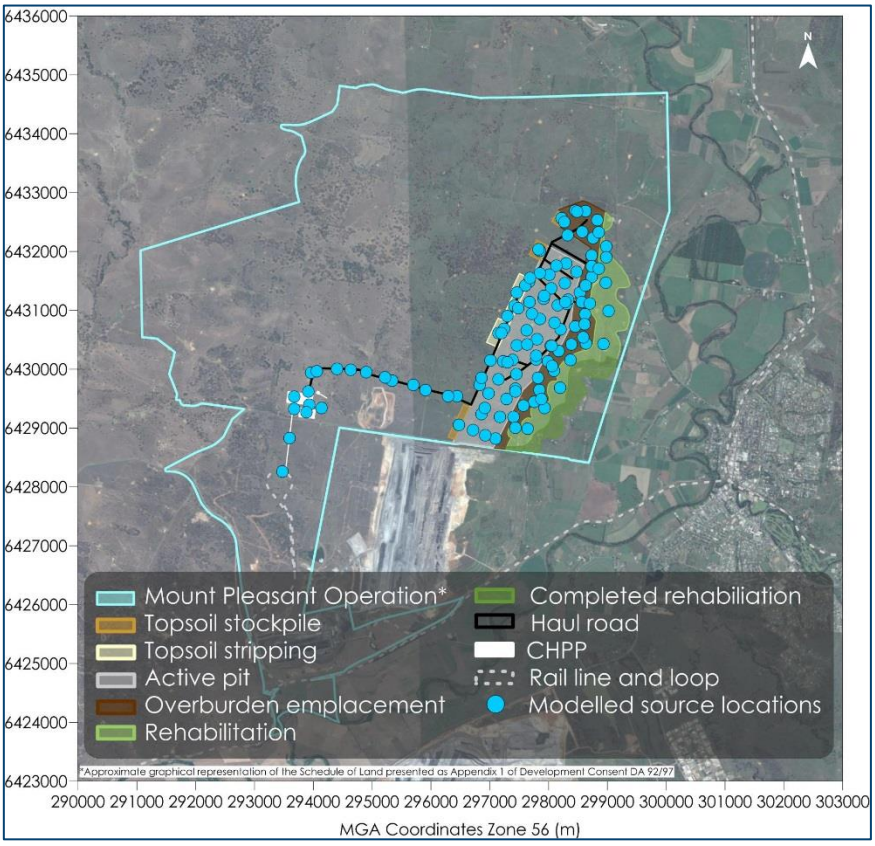



**Figure 2: Indicative mine plan for Scenario 2 with modelled source locations**

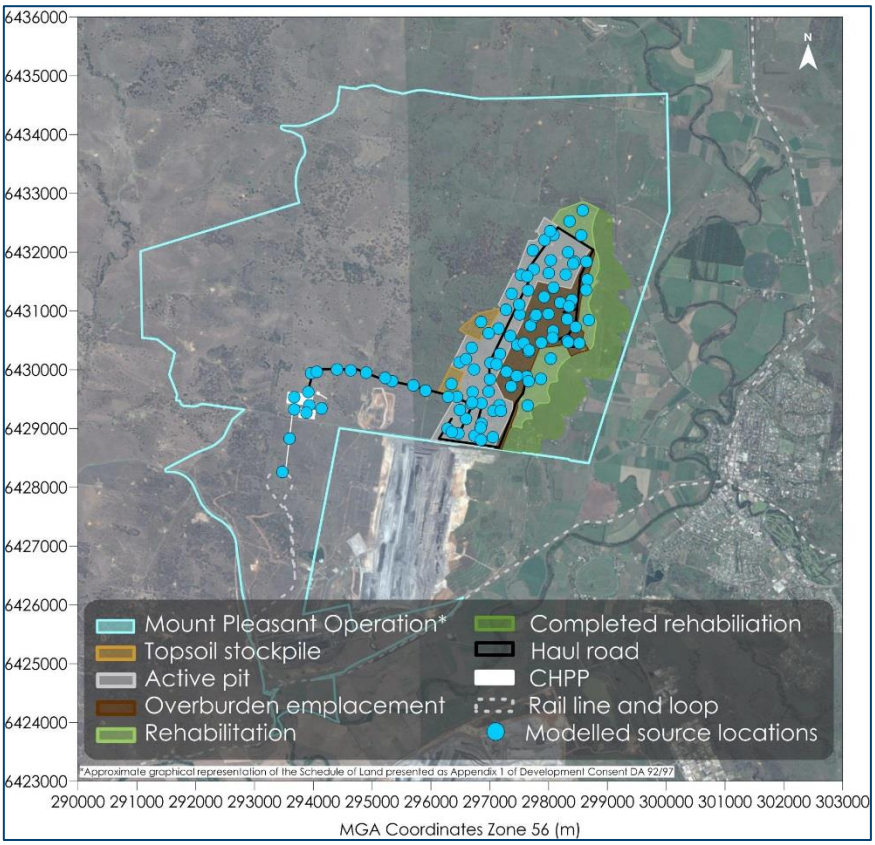
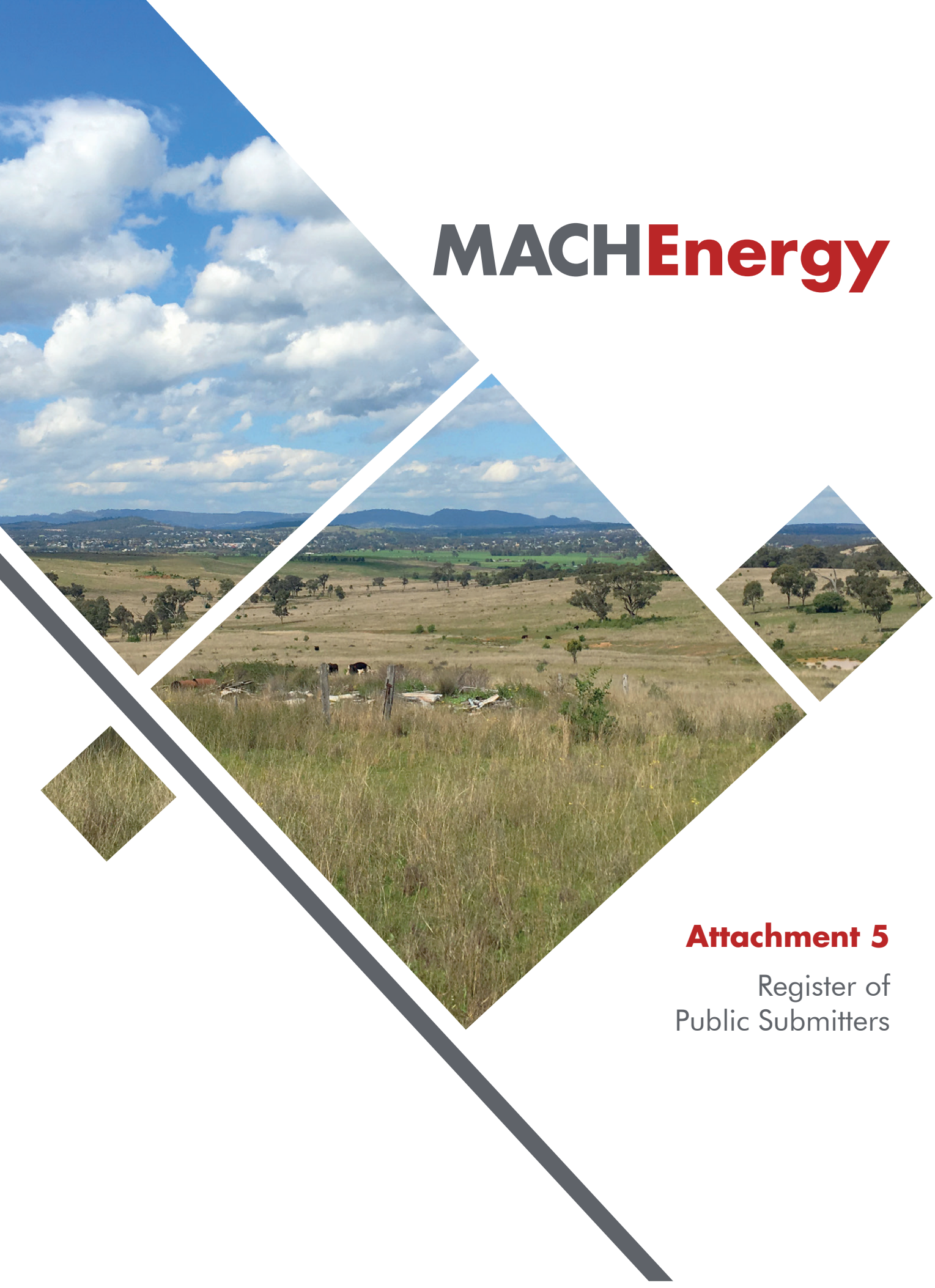



**Figure 3: Indicative mine plan for Scenario 3 with modelled source locations**

**Table 3: Emission factor equations**

| Activity | Emission factor equation | | |
|---|---|---|---|
| | TSP | $PM_{10}$ | $PM_{2.5}$ |
| Drilling (overburden) | $EF = 0.59\ kg/hole$ | $0.52 \times TSP$ | $0.03 \times TSP$ |
| Blasting (overburden) | $EF = 0.00022 \times A^{1.5}\ kg/blast$ | $0.52 \times TSP$ | $0.03 \times TSP$ |
| Loading / emplacing overburden & loading product coal to stockpile & conveyor transfer | $EF = 0.74 \times 0.0016 \times \left(\frac{U}{2.2}^{1.3} / \frac{M}{2}^{1.4}\right)\ kg/tonne$ | $EF = 0.35 \times 0.0016 \times \left(\frac{U}{2.2}^{1.3} / \frac{M}{2}^{1.4}\right)\ kg/tonne$ | $EF = 0.053 \times 0.0016 \times \left(\frac{U}{2.2}^{1.3} / \frac{M}{2}^{1.4}\right)\ kg/tonne$ |
| Hauling on unsealed surfaces | $EF = \left(\frac{0.4536}{1.6093}\right) \times 4.9 \times (s/12)^{0.7} \times (1.1023 \times M/3)^{0.45}\ kg/VKT$ | $EF = \left(\frac{0.4536}{1.6093}\right) \times 1.5 \times (s/12)^{0.9} \times (1.1023 \times M/3)^{0.45}\ kg/VKT$ | $EF = \left(\frac{0.4536}{1.6093}\right) \times 0.15 \times (s/12)^{0.9} \times (1.1023 \times M/3)^{0.45}\ kg/VKT$ |
| Dozers on overburden | $EF = 2.6 \times \frac{s^{1.2}}{M^{1.3}}\ kg/hour$ | $EF = 0.45 \times \frac{s^{1.5}}{M^{1.4}} \times 0.75\ kg/hour$ | $EF = 2.6 \times \frac{s^{1.2}}{M^{1.3}} \times 0.105\ kg/hour$ |
| Dozers on coal | $EF = 35.6 \times \frac{s^{1.2}}{M^{1.4}}\ kg/hour$ | $EF = 8.44 \times \frac{s^{1.5}}{M^{1.4}} \times 0.75\ kg/hour$ | $EF = 35.6 \times \frac{s^{1.2}}{M^{1.4}} \times 0.022\ kg/hour$ |
| Loading / emplacing coal | $EF = \frac{0.58}{M^{1.2}}\ kg/tonne$ | $EF = \frac{0.0596}{M^{0.9}} \times 0.75\ kg/tonne$ | $EF = \frac{0.58}{M^{1.2}} \times 0.019\ kg/tonne$ |
| Wind erosion on exposed areas & conveyors | $EF = 850\ kg/ha/year$ | $0.5 \times TSP$ | $0.075 \times TSP$ |
| Wind erosion on stockpiles | $EF = 1.9 \times \left(\frac{s}{1.5}\right) \times 365 \times \left(\frac{365 - p}{235}\right) \times \left(\frac{f}{15}\right) kg/ha/year$ | $0.5 \times TSP$ | $0.075 \times TSP$ |
| Grading roads | $EF = 0.0034 \times sp^{2.5}\ kg/VKT$ | $EF = 0.0056 \times sp^{2.0} \times 0.6\ kg/VKT$ | $EF = 0.0034 \times sp^{2.5} \times 0.031\ kg/VKT$ |

EF = emission factor, A = area of blast ($m^2$), U = wind speed (m/s), M = moisture content (%), s = silt content (%), VKT = vehicle kilometres travelled (km), p = number of days per year when rainfall is greater than 0.25mm (days), f = percentage of time that wind speed is greater than 5.4m/s (%), sp = speed of grader (km/h).



MACHEnergy

# Attachment 5

Register of
Public Submitters

## Table A5-1
## Bengalla Employee and Family Objections

| ID | Name | Location |
|---|---|---|
| 216948 | Adam Burton | Aberdeen |
| 217367 | Andrew Clifford | Parkville |
| 217487 | Alexandra Cox | Aberglasslyn |
| 217330 | Aaron Donohue | Singleton |
| 216538 | Anthony Fleming | Bolwarra |
| 217636 | Adam Freeman | Muswellbrook |
| 217459 | Anthony Johnson | Scone |
| 217220 | Angus King | Hamlyn Terrace |
| 217122 | Adam Mclean | Muswellbrook |
| 217559 | Aaron Power | Branxton |
| 216562 | Anthony Raines | Muswellbrook |
| 217230 | andrew yeatman | Lower Belford |
| 217126 | Name withheld | Aberdeen |
| 216940 | Name withheld | Aberdeen |
| 217385 | Name withheld | Coal Point |
| 217136 | Name withheld | Denman |
| 217423 | Name withheld | Denman |
| 217373 | Name withheld | Denman |
| 216854 | Name withheld | Fletcher |
| 217224 | Name withheld | Hunterview |
| 217347 | Name withheld | Merriwa |
| 217563 | Name withheld | Mt Royal |
| 216988 | Name withheld | Muswellbrook |
| 217068 | Name withheld | Muswellbrook |
| 217012 | Name withheld | Muswellbrook |
| 217250 | Name withheld | Muswellbrook |
| 217280 | Name withheld | Muswellbrook |
| 217401 | Name withheld | Muswellbrook |
| 217371 | Name withheld | Muswellbrook |
| 216604 | Name withheld | Muswellbrook |
| 217369 | Name withheld | Muswellbrook |
| 217361 | Name withheld | Muswellbrook |
| 217553 | Name withheld | Muswellbrook |
| 217533 | Name withheld | Muswellbrook |
| 217568 | Name withheld | Muswellbrook |
| 217557 | Name withheld | Muswellbrook |
| 217561 | Name withheld | Muswellbrook |
| 217616 | Name withheld | Muswellbrook |
| 216542 | Name withheld | Muswellbrook |
| 217628 | Name withheld | Muswellbrook |
| 217668 | Name withheld | Muswellbrook |
| 217351 | Name withheld | Muswellbrook |

| ID | Name | Location |
|---|---|---|
| 217501 | Name withheld | Muswellbrook |
| 217442 | Name withheld | Muswellbrook |
| 217469 | Name withheld | Muswellbrook |
| 216934 | Name withheld | Muswellbrook |
| 217048 | Name withheld | Muswellbrook |
| 217395 | Name withheld | Muswellbrook |
| 217413 | Name withheld | Muswellbrook |
| 216713 | Name withheld | Muswellbrook |
| 216860 | Name withheld | Muswellbrook |
| 216848 | Name withheld | Muswellbrook |
| 216917 | Name withheld | Muswellbrook |
| 216871 | Name withheld | Muswellbrook |
| 216858 | Name withheld | Rutherford |
| 217657 | Name withheld | - |
| 217041 | Name withheld | Scone |
| 217156 | Name withheld | Scone |
| 217154 | Name withheld | Scone |
| 217495 | Name withheld | Scone |
| 217447 | Name withheld | Scone |
| 217472 | Name withheld | Scone |
| 216921 | Name withheld | Scone |
| 217555 | Name withheld | Scone |
| 216911 | Name withheld | Scone |
| 217411 | Name withheld | Scone |
| 217687 | Name withheld | Singleton |
| 216919 | Name withheld | Singleton |
| 216715 | Name withheld | Singleton |
| 216844 | Name withheld | Singleton |
| 217210 | Name withheld | Singleton Heights |
| 217332 | Name withheld | Singleton |
| 217300 | Name withheld | Singleton |
| 217363 | Name withheld | Singleton |
| 217523 | Name withheld | Singleton |
| 216881 | Name withheld | Wattle Ponds |
| 217296 | Name withheld | Wattle Ponds |
| 216869 | Name withheld | - |
| 217574 | Bruce Day | Muswellbrook |
| 217584 | Brian Harshman | Aberdeen |
| 217140 | Brogan King | Aberdeen |
| 217499 | Ben King | Muswellbrook |
| 216546 | Bryson Ryan | Scone |
| 216879 | Brent Saunders | Wingen |

| ID | Name | Location |
|---|---|---|
| 217465 | Clinton Beattie | Bolwarra Heights |
| 217028 | Craig Bermingham | Muswellbrook |
| 217705 | Callum Boyle | Aberdeen |
| 216830 | Chris Dutton | Singleton Heights |
| 216527 | Cam Halfpenny | Muswellbrook |
| 216580 | Cheryl Holland | Dyrring |
| 217134 | Craig Loose | Muscle Creek |
| 216572 | Christopher Lye | Daruka |
| 217695 | Clifford Newling | Wattle Ponds |
| 218476 | Name Withheld | Muswellbrook |
| 216523 | Christopher walker | Elderslie |
| 217682 | Craig White | Muswellbrook |
| 217489 | Craig Wilkes | Hunterview |
| 217503 | Donna Campbell | Aberdeen |
| 217614 | Dale Fittock | Aberdeen |
| 217580 | Damian Grahame | Muswellbrook |
| 217610 | Daniel Rankmore | Muswellbrook |
| 217527 | Doug White | Muswellbrook |
| 217252 | Dave Zonneveld | Muswellbrook |
| 217218 | Graeme Bayne | Muswellbrook |
| 217588 | Gail Fittock | Aberdeen |
| 217407 | Grahame Gill | Muswellbrook |
| 216838 | Geoff Gruszynski | Fletcher |
| 216736 | Greg Hart | Muswellbrook |
| 217128 | Glen Mountford | Cameron Park |
| 217604 | Gary Palmer | Muswellbrook |
| 217016 | Gareth Wanford | Muswellbrook |
| 216664 | Graham White | Scone |
| 217592 | Grant White | Gundy |
| 217624 | Hayden Nicol | Muswellbrook |
| 217228 | IAN MURRAY | Scone |
| 216862 | James Birch | Aberdeen |
| 216930 | Jamie Buckett | Singleton Heights |
| 217547 | John Campbell | Muswellbrook |
| 216852 | Jamie Costello | Singleton |
| 216640 | Josh Dever | Muswellbrook |
| 216954 | James Dyson | Scone |
| 217138 | James Freeman | Denman |
| 217680 | Jodie Janssen | Denman |
| 217598 | John Markham | Muswellbrook |
| 217594 | John McLean | Muswellbrook |
| 217116 | Jack Millwood | Muswellbrook |
| 216972 | Jonathan Miln | Singleton |
| 217481 | Jarrett Pacheco | Gillieston Heights |

| ID | Name | Location |
|---|---|---|
| 216962 | Jason Pette | Scone |
| 217375 | Joel Platt | Greta |
| 216950 | Jake Roots | Scone |
| 217186 | Joe Ryan | Scone |
| 217343 | Jarrod Scholes | Muswellbrook |
| 217513 | Joshua Shone | Quirindi |
| 217208 | Jason Taylor | Quipolly |
| 217703 | Kent Flaherty | Muswellbrook |
| 217405 | Kenneth Judge | Cameron Park |
| 217505 | Ken Maurer | Swansea |
| 216875 | Kyle Smith | Scone |
| 216907 | Kyron Turner | Muswellbrook |
| 217463 | Luke Goddard | Muswellbrook |
| 217383 | Luke Holz | Singleton |
| 217194 | Matthew Donald | Singleton |
| 217620 | Michael Murdoch | Muswellbrook |
| 217551 | Mitchell Parkinson | Scone |
| 216856 | Matt Perini | Scone |
| 217035 | Mick Quinn | Scone |
| 217324 | Michael Ryan | Muswellbrook |
| 217640 | Mitchell Sawyer | Aberglasslyn |
| 217226 | Nicholas Glenn | Muswellbrook |
| 216710 | Peter Clegg | Singleton |
| 217085 | Phillip Hollway | Muswellbrook |
| 216540 | Penny Walker | Denman |
| 217541 | Philip Walsh | Muswellbrook |
| 216548 | Rafael Gutierrez | Muswellbrook |
| 217192 | Ryan King | Aberdeen |
| 217349 | rowan lennard | Telarah |
| 216694 | robert rowsell | Muswellbrook |
| 217248 | Ron Tillemans | Scone |
| 216717 | Simon Clegg | Singleton Heights |
| 217515 | Steve Eveleigh | Scone |
| 216683 | Simon Land | Singleton |
| 216566 | Scott Lye | Scone |
| 216913 | Shane Marteene | Muswellbrook |
| 217033 | Scott McGeachie | Muswellbrook |
| 217602 | Susan McLean | Muswellbrook |
| 216897 | Stephen Meares | Muswellbrook |
| 217537 | Stephen Penfold | Hunterview |
| 216630 | Suzi Smith | Moonan Flat |
| 217511 | Shane Willmott | Muswellbrook |
| 216544 | Thomas Cartwright | Muswellbrook |
| 217200 | Troy Dixon | Scone |

| ID | Name | Location |
|---|---|---|
| 217453 | Tyler Johnson | Scone |
| 217046 | Tony Pass | Muswellbrook |
| 217612 | Troy Power | Muswellbrook |
| 217190 | Tristan Price | Singleton |
| 217334 | Tim Woodward | Bolwarra Heights |
| 217184 | Vincent Parker | Muswellbrook |
| 216656 | Zoe White | Scone |
| 217545 | Garry Hogan | Singleton |

## Table A5-2
## Other Public Objections

| ID | Name | Location | Issue Raised |
|---|---|---|---|
| 217176 | Alan Leslie | Bulga | 2, 3, 8, 11 |
| 217124 | Anthony Lonergan | Muswellbrook | 11, 12, 13 |
| 217336 | Anthony Williams | Wingen | 2, 3,14, 15, 16, 18, 19, 21, 26 |
| 217074 | Name withheld | Aberdeen | 3, 7, 16 |
| 216409 | Name withheld | Aberdeen | 14 |
| 217353 | Name withheld | Aberdeen | 2, 8, 13, 14, 15, 21, 22 |
| 217646 | Name withheld | Aberdeen | 13 |
| 216419 | Name withheld | Aberdeen | 2, 3, 7, 13, 15, 22 |
| 217539 | Name withheld | Appletree Flat | 3, 4, 13, 21 |
| 216433 | Name withheld | Avenel | 8, 10, 13, 14 |
| 216435 | Name withheld | Gosford | 13 |
| 216586 | Name withheld | Gundy | 2, 10, 14 |
| 216403 | Name withheld | Scone | 8, 10, 14, 15 |
| 217088 | Name withheld | Scone | 13 |
| 217310 | Name withheld | Scone | 10, 13, 14, 19 |
| 217529 | Name withheld | Scone | 13 |
| 217626 | Name withheld | Scone | 3, 8, 18, 21 |
| 217693 | Name withheld | Scone | 8, 16, 18 |
| 217689 | Name withheld | Scone | 3, 16, 22 |
| 216494 | Name withheld | Scone | 14, 21, 25 |
| 217697 | Name withheld | Scone | 14, 18 |
| 216411 | Name withheld | Scone | 13 |
| 217572 | Name withheld | Scone | 3, 19, 20, 23 |
| 216477 | Name withheld | Scone | 3, 8, 10, 11, 14, 15, 16, 18 |
| 216398 | Name withheld | Scone | 2, 15, 18 |
| 216394 | Name withheld | Scone | 2, 3, 7, 8, 12, 13, 14, 15, 18, 22, 26 |
| 216850 | Name withheld | Scone | 13, 14 |
| 217104 | Name withheld | Scone | 2, 3, 7, 8, 12, 13, 14 |
| 217168 | Name withheld | Seymour | N/A |
| 217196 | Beverley Atkinson | Scone | 2, 3, 6, 7, 10, 12, 13, 14, 16, 19, 21, 22, 27, 28, 29 |
| N/A | Brendan Barry | Muswellbrook | 2, 3, 4, 7, 16, 21, 33, 36, 37, 38 |
| 217437 | Bryan Chapman | Appletree Flat | 2, 3, 7, 8, 12, 13, 14, 15 |
| 216423 | Barbara Davis | Cheltenham | 2, 3, 7, 8, 11, 16, 19, 21, 22, 30 |
| 217457 | Beverley Smiles | Wollar | 2, 3, 8, 12, 14, 22, 31, 32 |
| 217092 | Name Withheld | Muswellbrook | 2, 3, 5, 7, 12, 21, 22, 33 |
| 216730 | Greg Scott | Moonan Flat | 8, 14 |
| 216421 | Heath Courtney | Scone | 2, 8, 13, 15, 22 |
| 217543 | Jan Davis | East Maitland | 2, 3, 7, 11, 12, 16 |
| 217090 | Judith Leslie | Bulga | 2, 3, 8, 11, 12, 13, 14, 16, 18, 19, 21, 22 32 |
| 217691 | Katherine Brooks | Scone | 3, 16, 22 |
| 217549 | Kiwa Fisher | Aberdeen | 3, 7, 12, 13, 21, 32 |
| 216834 | Luke Ward | Aberdeen | 13 |

**Table A5-2 (continued)**
**Other Public Objections**

| ID | Name | Location | Issue Raised |
|---|---|---|---|
| 216413 | Mathew Chapple | Scone | 2, 3, 7, 12, 16, 18, 19, 21, 22, 34, 35 |
| 217525 | Margaret Edwards | East Maitland | 3, 7, 13, 22, 32 |
| 217576 | Marg McLean | Singleton | 3, 12, 13, 22 |
| 217509 | Meryan McRobert | Scone | 3, 7, 12, 13, 21, 30 |
| 216407 | Mary O'Neill | Aberdeen | 2, 3, 13 |
| 216828 | Michael Thew | Scone | 2, 8, 13, 14, 15, 22 |
| 216437 | Nicola Cramsie | Scone | 12, 22 |
| 216415 | Paul Hartmann | - | 2, 16, 22, 31 |
| 217102 | Ross Cole | Aberdeen | 2, 13, 14, 22 |
| 217118 | Sue Abbott | Scone | 2, 3, 8, 11, 12, 13, 14, 22, 27, 32, 35 |
| 217158 | Steven Hope | Lambton | 1 |
| 217172 | Sharyn Munro | Upper Lansdowne | 2, 3, 12, 13, 14, 22, 32 |
| 215107 | Susan Russell | Elands | 2, 3, 7, 12, 13, 14, 18, 22 |
| 217618 | Sarah Stanford | Scone | 18, 31 |
| 217266 | Teresa Byrne | Scone | 3, 8, 10, 13, 14, 22 |
| 217379 | Tania Henry-May | Scone | 13 |
| 216944 | Tony O'Driscoll | Scone | 3, 7, 13, 14, 21 |
| 217709 | Trevor Woolley | Denman | 12, 13 |

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