



Mr Chris Masters
Environmental Advisor
Suit 1 Level 3
426 King Street
Newcastle West NSW 2302

24/02/2022

Dear Mr Masters

**Mount Pleasant Coal Project (DA 92/97)
Rehabilitation Strategy**

I refer to the revised Rehabilitation Strategy which was submitted in accordance with condition 54 of Schedule 3 of the development consent for the Mount Pleasant Coal Project (DA 92/97).

The Department has carefully reviewed the document and is satisfied that it meets the requirements of the above condition, noting that the previous comments provided by the Department have been addressed.

Accordingly, the Secretary has approved the revised Rehabilitation Strategy (Revision 2, dated September 2021). Please ensure that the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Tegan Cole on 02 9895 6457 or via email at tegan.cole@planning.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Joe Fittell', written over a light grey background.

Joe Fittell
Team Leader
Resource Assessments

As nominee of the Secretary



MOUNT PLEASANT OPERATION REHABILITATION STRATEGY

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TABLE OF CONTENTS

1 INTRODUCTION.....1

1.1 HISTORY OF OPERATIONS.....1

1.2 PURPOSE AND SCOPE3

 1.2.1 Previous Versions7

 1.2.2 Current Version.....7

1.3 STRUCTURE OF THE REHABILITATION STRATEGY.....8

2 STATUTORY OBLIGATIONS.....9

2.1 REHABILITATION STRATEGY REQUIREMENTS.....9

3 REHABILITATION STRATEGY.....12

3.1 GENERAL REHABILITATION PRINCIPLES12

 3.1.1 Post-Mining Land Use and Rehabilitation Domains.....12

 3.1.2 Rehabilitation Phases15

 3.1.3 Final Landform15

 3.1.4 Rehabilitation Materials.....21

3.2 AREAS PROPOSED FOR NATIVE ECOSYSTEM RE-ESTABLISHMENT.....22

 3.2.1 Native Woodland Ecosystems and Habitat for Threatened Flora and Fauna
.....22

 3.2.2 Riparian Habitat29

 3.2.3 Wildlife Corridors.....30

3.3 AREAS PROPOSED FOR AGRICULTURAL LAND31

3.4 FINAL VOIDS33

3.5 WATER QUALITY MANAGEMENT34

3.6 PUBLIC SAFETY AND SOCIAL TRANSITION35

4 REHABILITATION SCHEDULE AND PROGRESSIVE REHABILITATION.....36

4.1 PROGRESSIVE REHABILITATION.....36

4.2 REHABILITATION OF THE RAIL LOOP AND INFRASTRUCTURE CORRIDOR...36

4.3 REHABILITATION PROGRESS37

5 REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE.....39

5.1 ANNUAL REVIEW39

5.2 REHABILITATION STRATEGY REVISION39

6 REHABILITATION MONITORING AND RESEARCH.....40

7 REFERENCES.....41

LIST OF FIGURES

- Figure 1 Project Location
- Figure 2 Indicative Surface Disturbance Plan – 2021
- Figure 3 Indicative Modification 4 Rail and Water Supply Alignments
- Figure 4 Key Components of Rehabilitation Implementation and Improvement Methodology
- Figure 5 Provisional Post-mining Land Use Domains
- Figure 6 Conceptual Final Landform
- Figure 7 Final Landform Simulation – Floodplain Properties (Kayuga Road)
- Figure 8 Final Landform Simulation – Muswellbrook (Hill Street)
- Figure 9 Pre-Mining Vegetation Communities

LIST OF CHARTS

- Chart 1 Preliminary Estimate of Rehabilitation Progress

LIST OF TABLES

- Table 1 Rehabilitation Management Development Consent DA 92/97 Conditions
- Table 2 Provisional Post-Mining Land Use Domains
- Table 3 Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation
- Table 4 Land Capability Classes Proposed for Low Intensity Agriculture

LIST OF ATTACHMENTS

- Attachment 1 Appendix 2 of Development Consent DA 92/97

1 INTRODUCTION

The Mount Pleasant Operation (MPO) is located in the Upper Hunter Valley of New South Wales (NSW), approximately 3 kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton (Figure 1). The village of Aberdeen and locality of Kayuga are also located approximately 5 km north-northeast and 1 km north of the MPO boundary, respectively (Figure 1).

The proponent of the MPO is MACH Energy Australia Pty Ltd (MACH Energy), which purchased the MPO from Coal & Allied Operations Pty Ltd (Coal & Allied) in 2016.

Development of the MPO is undertaken within Mining Lease (ML) 1645, ML 1713, ML 1708, ML 1709 and ML 1750 and is operated in accordance with the relevant Authorities for the above MLs and in accordance with NSW Development Consent DA 92/97 and Commonwealth Approval EPBC 2011/5795. Other key approvals, licences and permits for the MPO are summarised in the MPO's Environmental Management Strategy.

1.1 HISTORY OF OPERATIONS

The initial development application for the MPO was made in 1997. This was supported by an Environmental Impact Statement (EIS) prepared by Environmental Resources Management (ERM) Mitchell McCotter (ERM Mitchell McCotter, 1997). On 22 December 1999, the then Minister for Urban Affairs and Planning granted Development Consent DA 92/97 to Coal & Allied. This allowed for the "Construction and operation of an open cut coal mine, coal preparation plant, transport and rail loading facilities and associated facilities" at the MPO. The consent allowed for operations 24 hours per day seven days per week and the extraction of 197 million tonnes (Mt) of run-of-mine (ROM) coal over a 21 year period, at a rate of up to 10.5 Mt of ROM coal per year.

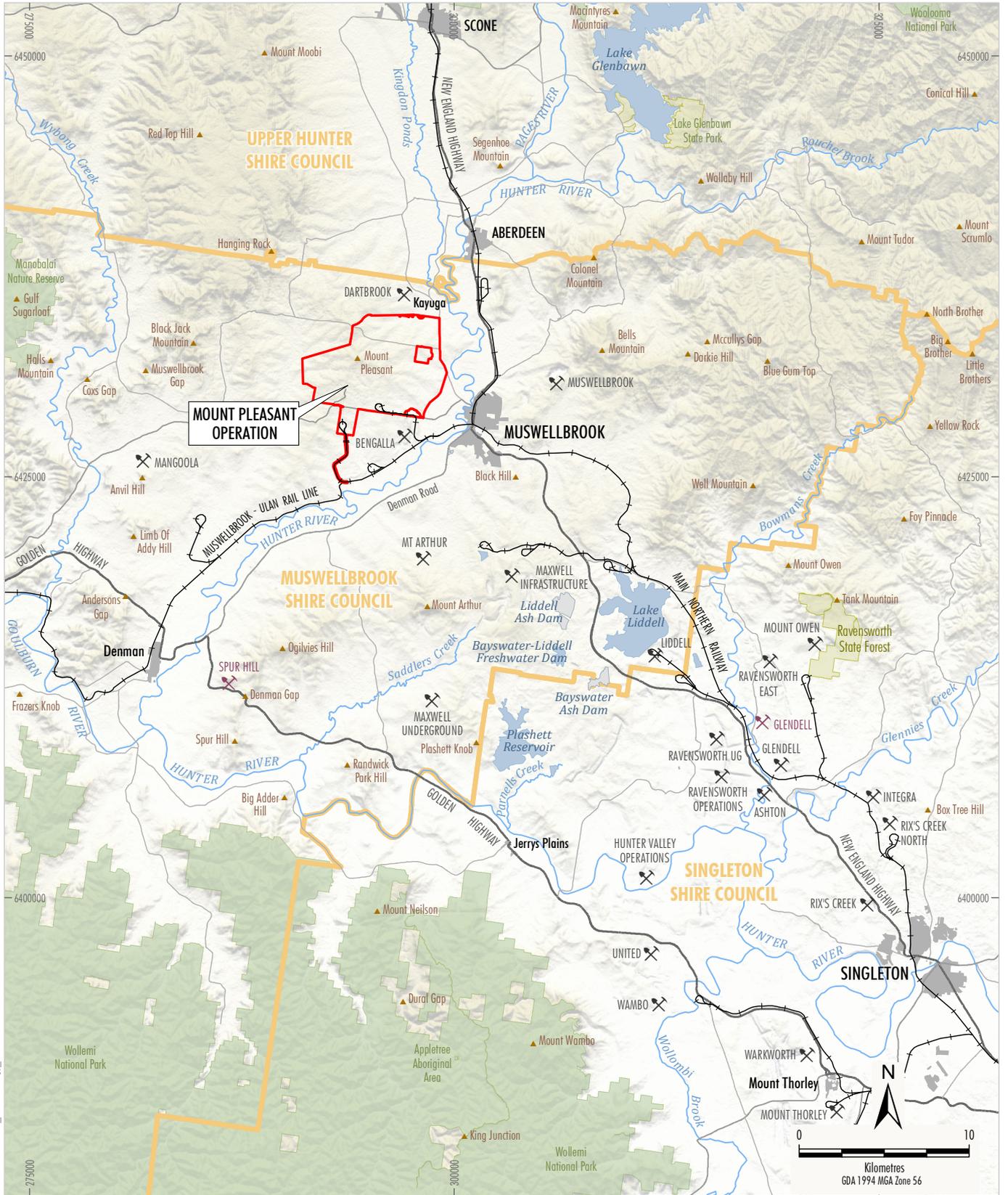
Environmental Dam 1 (ED1) and an associated gravel access track were constructed in 2004. In November 2005, a high level spillway was added to ED1 to accommodate larger rainfall events.

The Mount Pleasant Project Modification (MOD 1) was submitted on 19 May 2010 with a supporting Environmental Assessment (EA) prepared by EMGA Mitchell McLennan (EMGA Mitchell McLennan, 2010). MOD 1 included the provision of an infrastructure envelope for siting the mine infrastructure, the provision of an optional conveyor/service corridor linking the MPO facilities with the Muswellbrook-Ulan Rail Line and modification of the existing Development Consent DA 92/97 boundaries to accommodate the optional conveyor/service corridor and minor administrative changes. MOD 1 was approved on 19 September 2011.

Prior to MACH Energy acquisition (in 2016), activities undertaken on-site were largely limited to routine agricultural management activities such as weed and pest control, fence maintenance, fire break and fire trail maintenance, and seed harvesting. Since the Development Consent was granted, regular monitoring of a range of baseline environmental aspects has been undertaken in the vicinity of the MPO, including noise, air quality, surface water and groundwater monitoring.

The MPO South Pit Haul Road Modification (MOD 2) was submitted on 30 January 2017 with a supporting EA prepared by MACH Energy (MACH Energy, 2017a). MOD 2 proposed to realign an internal haul road to enable more efficient access to the South Pit open cut, with no other material changes to the approved MPO. MOD 2 was approved on 29 March 2017.

The MPO Mine Optimisation Modification (MOD 3) was submitted on 31 May 2017 with a supporting EA prepared by MACH Energy (MACH Energy, 2017b). MOD 3 comprised an extension to the time limit on mining operations (to 22 December 2026) and extensions to the South Pit Eastern Out of Pit Emplacement to facilitate development of an improved final landform. MOD 3 was approved on 24 August 2018.



MACH 18-03 MP 2021_Reliability Strategy_2014

Source: NSW Spatial Services (2021)



- LEGEND**
- Mining Operation
 - Proposed Mining Operations (Application Lodged)
 - Railway
 - Local Government Boundary
 - State Forest/Reserve
 - National Parks and Wildlife Estate
 - Mining Lease Boundary (Mount Pleasant Operation)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Project Location

Figure 1

The MPO Rail Modification (MOD 4) was submitted on 18 December 2017 with a supporting EA prepared by MACH Energy (MACH Energy, 2017c). MOD 4 proposed the following changes:

- duplication of the approved rail spur, rail loop, conveyor and rail load-out facility and associated services;
- duplication of the Hunter River water supply pump station, water pipeline and associated electricity supply that followed the original rail spur alignment; and
- demolition and removal of the redundant approved infrastructure within the extent of the Bengalla Mine, once the new rail, product loading and water supply infrastructure has been commissioned and is fully operational.

MOD 4 was approved on 16 November 2018 by the Secretary of the Department of Planning and Environment (DPE) (under Delegation). The MPO continues to be developed and operated under the currently approved MOD 4 of Development Consent DA 92/97. This Rehabilitation Strategy reflects the currently approved MPO under MOD 4 of Development Consent DA 92/97.

Appendix 2 of the modified Development Consent DA 92/97 illustrates the Conceptual Project Layout Plans of the approved MPO at 2021 and 2025, Approved Surface Disturbance Plan and Conceptual Final Landform incorporating the MOD 4 infrastructure relocations. Appendix 2 of the modified Development Consent DA 92/97 is provided in Attachment 1 of this Strategy.

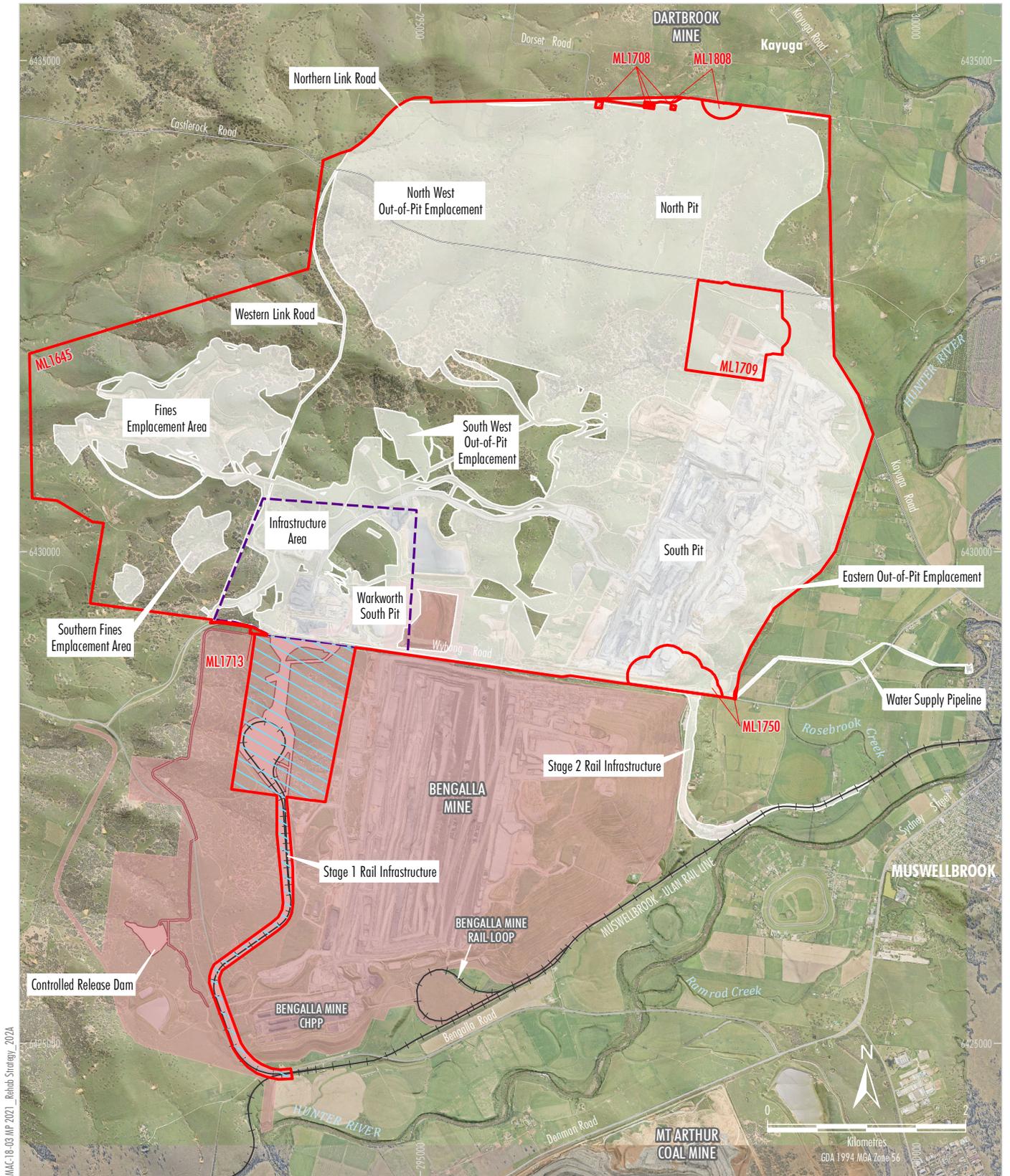
Figures 2 and 3 show current development of approved MPO mining operations and ancillary works and the key MOD 4 infrastructure components, respectively.

On 22 January 2021, MACH Energy submitted the *Mount Pleasant Optimisation Project Environmental Impact Statement* in support of a “State Significant Development” Application under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Key aspects of the Mount Pleasant Optimisation Project generally involve (among other things): increased open cut extraction within the MPO’s existing MLs; a staged increase in extraction, handling and processing of ROM coal up to 21 Mtpa; upgrades to existing infrastructure and new infrastructure to support mining of the proposed Project; and an extension to the time limit on mining operations to 22 December 2048. The Mount Pleasant Optimisation Project is currently being assessed by the DPIE.

1.2 PURPOSE AND SCOPE

This Rehabilitation Strategy has been prepared by MACH Energy to satisfy the requirements under Development Consent DA 92/97 and specifically Schedule 3, Condition 54. Specific reference has been made to the requirements of the *ESG3: Mining Operations Plan (MOP) Guidelines* (Department of Trade and Investment, Regional Infrastructure and Services - Division of Resources and Energy [DRE], 2013) to avoid duplication between the content of this Rehabilitation Strategy and the content required to be presented in the MPO Mining Operations Plan. The role of this Rehabilitation Strategy, as well as the key components of the rehabilitation implementation and improvement methodology at the MPO, are shown on Figure 4.

This revised Rehabilitation Strategy has been prepared to incorporate updates to maintain consistency with the MPO’s Mining Operations Plan and Rehabilitation Management Plan (1 July 2021 – 30 June 2023) (herein referred to as 2021-2023 MOP/RMP), approved by the NSW Resources Regulator on 24 June 2021.



MAC18-03 MP 2021 - Rehab Strategy - 2024

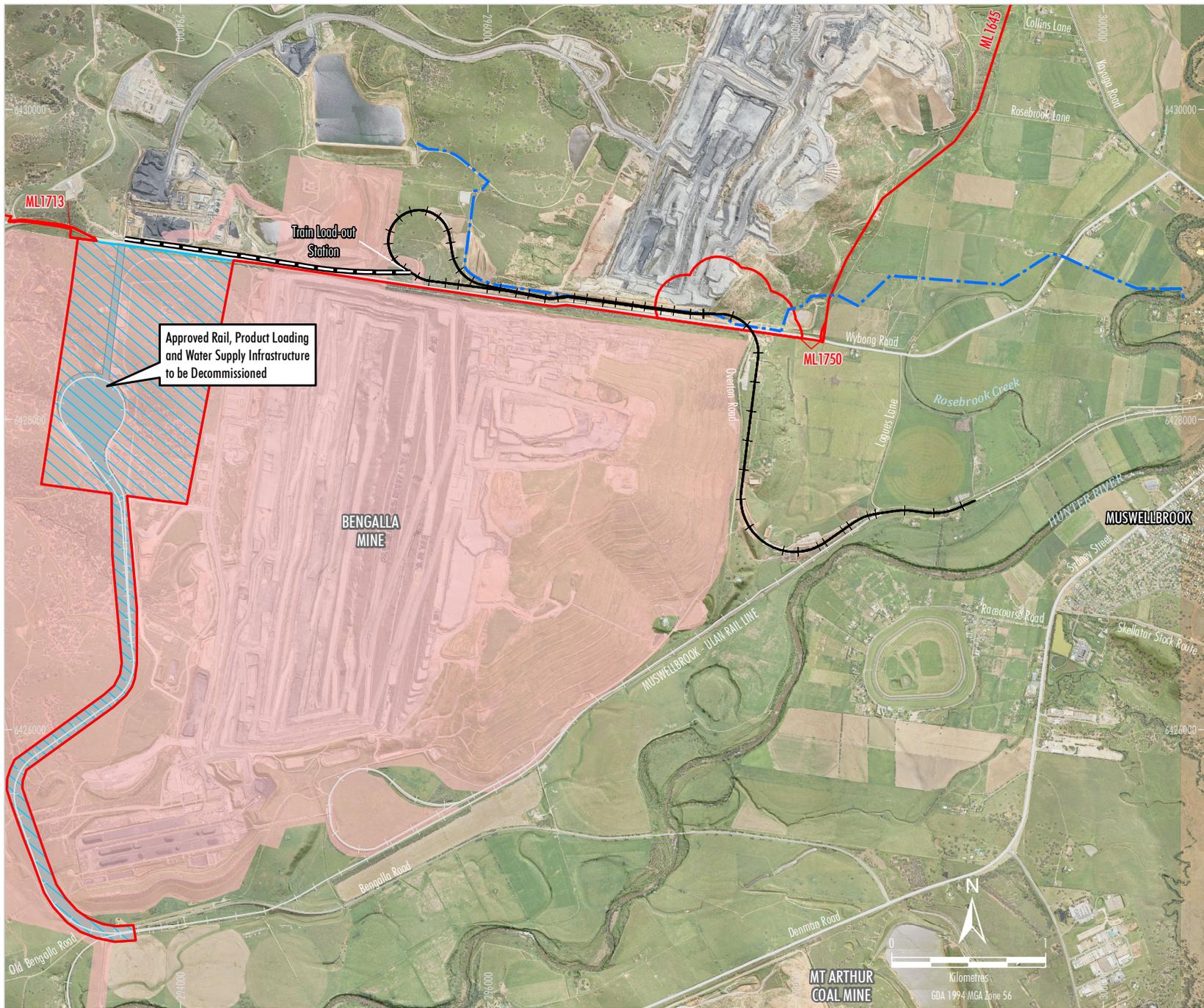
- LEGEND**
- Mining Lease Boundary (Mount Pleasant Operation)
 - Approximate Extent of Existing/Approved Surface Development (DA92/97) ¹
 - Infrastructure Area Envelope
 - Infrastructure to be removed under the Terms of Condition 37, Schedule 3 (DA92/97)
 - Bengalla Mine Approved Disturbance Boundary (SSD-5170)
 - Existing/Approved Mount Pleasant Operation Infrastructure within Bengalla Mine Approved Disturbance Boundary (SSD-5170)

NOTE
 1. Excludes some incidental Project components such as water management infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

Source: MACH Energy (2021); NSW Spatial Services (2021); Department of Planning and Environment (2016) Orthophoto: MACH Energy (Jan 2021)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Indicative Surface Disturbance Plan - 2021

Figure 2

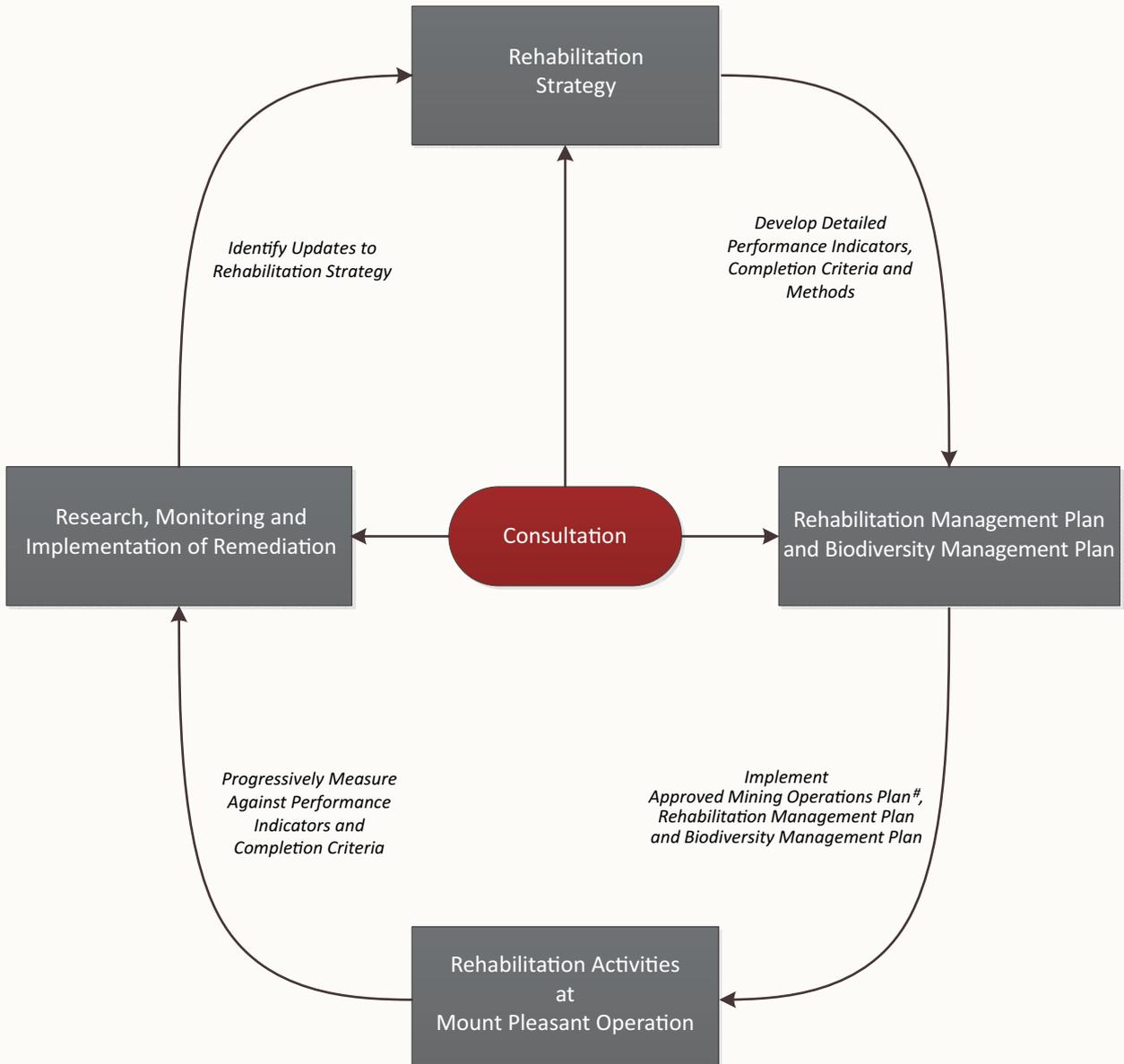


- LEGEND**
- Mount Pleasant Operation Mining Lease Boundary
 - Infrastructure to be removed under the Terms of Condition 37, Schedule 3
 - Bengalla Mine Approved Disturbance Boundary (SSD-5170)
- Key Elements of Modification 4**
- Indicative Rail Alignment
 - Indicative Product Conveyor
 - Indicative Water Pipeline and associated Electricity Transmission Line

Source: MACH Energy (2021); NSW Spatial Services (2021); Department of Planning and Environment (2016)
 Orthophoto: MACH Energy (Jan 2021)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Indicative Modification 4
 Rail and Water Supply Alignments

Figure 3



MAC-18-03 MP 2021_Rehab Strategy_001B

Figure 4

The Rehabilitation Strategy applies to all employees and contractors at the MPO and covers all areas within the MPO boundary. The Rehabilitation Strategy applies to the life of the MPO, including (but not limited to) the period of mining operations specified in Development Consent DA 92/97, which currently permits mining until 22 December 2026. As required by Condition 5, Schedule 2 of Development Consent DA 92/97, the Rehabilitation Strategy will continue to apply (excluding mining operations) beyond 22 December 2026, as required, until the rehabilitation and any additional undertakings (required by the Secretary of the NSW Department of Planning, Industry and Environment [DPIE], or the NSW Resources Regulator within the DPIE) have been carried out satisfactorily.

Under Condition 37, Schedule 3 of Development Consent DA 92/97, MACH Energy is required to remove the existing rail loop and infrastructure corridor, prior to 31 October 2022:

37. *The Applicant must, by no later than 31 October 2022:*

- (a) *remove all infrastructure associated with the development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla mine agrees with the Applicant, in writing, can remain in situ);*
- (b) *do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine or its nominee;*
- (c) *transfer the freehold land owned by the Applicant within ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee) at rural market value;*
- (d) *release any easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by the Applicant; and*
- (e) *demolish the Bengalla Link Road bridge required under condition 38 (a) below and, unless otherwise agreed by the Secretary, reinstate the road reserve to the satisfaction of Council.*

Note: The rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2.

On this basis, this Rehabilitation Strategy focuses on disturbance areas north of Wybong Road (e.g. the vegetation mapping shown on Figure 9 is limited to areas north of Wybong Road). Notwithstanding, this Rehabilitation Strategy has addressed interim rehabilitation of the existing rail loop and infrastructure corridor in Section 4.2.

1.2.1 Previous Versions

A previous version of the Rehabilitation Strategy was submitted by Coal & Allied and was approved on 23 July 2012. MACH Energy prepared a 'Preliminary Rehabilitation Strategy' as part of the *Mount Pleasant Operation - Mine Optimisation Modification Response to Submissions* (MACH Energy, 2017d) for which this Rehabilitation Strategy has built upon to address Condition 54, Schedule 3 of Development Consent DA 92/97. The preliminary version of the Rehabilitation Strategy prepared by MACH Energy provided a contemporary outline of MACH Energy's proposed objectives and measures to implement rehabilitation at the MPO, following the approval of MOD 3/MOD 4, and was approved by the DPIE on 16 May 2019.

1.2.2 Current Version

This version of the Rehabilitation Strategy has been prepared to replace the previous versions prepared by MACH Energy (approved in May 2019) described in Section 1.1 and includes updates to maintain consistency with the MPO's 2021-2023 MOP/RMP, approved by the NSW Resources Regulator on 24 June 2021.

As required by Condition 54, Schedule 3 of Development Consent DA 92/97, this Rehabilitation Strategy has been submitted to NSW Resources Regulator and the Muswellbrook Shire Council (MSC) for the purposes of consultation.

In accordance with the requirements under Condition 54, Schedule 3 of Development Consent DA 92/97, this revised Rehabilitation Strategy has been prepared on behalf of MACH Energy by Dr David Freudenberger (whose appointment has been approved by DPIE [letter dated 18 September 2018] as a 'suitably qualified and experienced person').

Consistent with the requirements of the NSW *Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021*, enacted on 2 July 2021, MACH Energy will prepare a Rehabilitation Management Plan for the MPO by 2 July 2022 (or as otherwise agreed with the NSW Resources Regulator) in accordance with NSW Resources Regulator's relevant guidelines. Following approval of the Rehabilitation Management Plan by the NSW Resources Regulator, MACH Energy would revise this Rehabilitation Strategy, as required, to maintain consistency between the documents.

1.3 STRUCTURE OF THE REHABILITATION STRATEGY

The remainder of the Rehabilitation Strategy is structured as follows:

- Section 2: Outlines the statutory obligations relevant to this Rehabilitation Strategy.
- Section 3: Outlines the key rehabilitation strategies proposed at the MPO.
- Section 4: Provides an indicative schedule for rehabilitation and describes progressive rehabilitation at the MPO.
- Section 5: Describes the annual review and continuous improvement process.
- Section 6: Summarises the rehabilitation monitoring and research programme at the MPO.
- Section 7: Provides references used in this Rehabilitation Strategy.

2 STATUTORY OBLIGATIONS

MACH Energy’s statutory obligations relevant to the development of this Rehabilitation Strategy are contained in the conditions of Development Consent DA 92/97 (as modified), as outlined in Section 2.1 below.

2.1 REHABILITATION STRATEGY REQUIREMENTS

Conditions 53 to 56, Schedule 3 of Development Consent DA 92/97, (in addition to the Statement of Commitments) outline the rehabilitation management required at the MPO, including the preparation of a Rehabilitation Strategy (refer Table 1).

**Table 1
Rehabilitation Management Development Consent DA 92/97 Conditions**

MPO Development Consent DA 92/97	Section where addressed in this Rehabilitation Strategy document								
Schedule 3									
Rehabilitation Objectives									
<p>53. The Applicant must rehabilitate the site to the satisfaction of DRG. This rehabilitation must be generally consistent with the conceptual final landform depicted in Figure 4 in Appendix 2, and comply with the objectives in Table 11.</p> <p>Table 11: Rehabilitation Objectives</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d3d3d3;">Feature</th> <th style="background-color: #d3d3d3;">Objective</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">All areas of the site affected by the development</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> Safe, stable and non-polluting Fit for the intended post-mining land use/s </td> </tr> <tr> <td style="vertical-align: top;">Areas proposed for native ecosystem re-establishment</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> Restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area, as shown conceptually in Figure 4 in Appendix 2. Establish areas of self-sustaining: <ul style="list-style-type: none"> - riparian habitat, within any diverted and/or re-established creek lines and retained water features; - potential habitat for threatened flora and fauna species; and - wildlife corridors, as far as is reasonable and feasible, and as shown conceptually in Figure 4 in Appendix 2. </td> </tr> <tr> <td style="vertical-align: top;">Areas proposed for agricultural land</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> Establish/restore grassland areas to support sustainable agricultural activities Achieve the nominated land capability classification </td> </tr> </tbody> </table>		Feature	Objective	All areas of the site affected by the development	<ul style="list-style-type: none"> Safe, stable and non-polluting Fit for the intended post-mining land use/s 	Areas proposed for native ecosystem re-establishment	<ul style="list-style-type: none"> Restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area, as shown conceptually in Figure 4 in Appendix 2. Establish areas of self-sustaining: <ul style="list-style-type: none"> - riparian habitat, within any diverted and/or re-established creek lines and retained water features; - potential habitat for threatened flora and fauna species; and - wildlife corridors, as far as is reasonable and feasible, and as shown conceptually in Figure 4 in Appendix 2. 	Areas proposed for agricultural land	<ul style="list-style-type: none"> Establish/restore grassland areas to support sustainable agricultural activities Achieve the nominated land capability classification
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All areas of the site affected by the development	<ul style="list-style-type: none"> Safe, stable and non-polluting Fit for the intended post-mining land use/s 								
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Areas proposed for agricultural land	<ul style="list-style-type: none"> Establish/restore grassland areas to support sustainable agricultural activities Achieve the nominated land capability classification 								
	<p>Section 3.1.3, 3.2, 3.3, 3.4 and 3.5</p> <p>Section 3.2</p> <p>Section 3.3</p>								

Table 1 (Continued)
Rehabilitation Management Development Consent DA 92/97 Conditions

MPO Development Consent DA 92/97		Section where addressed in this Rehabilitation Strategy document
<i>Other land affected by the development</i>	<ul style="list-style-type: none"> • <i>Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native plant species (unless DRG agrees otherwise)</i> 	Section 3.2
<i>Final Landform</i>	<ul style="list-style-type: none"> • <i>Stable and sustainable for the intended post-mining land use/s</i> • <i>Integrated with surrounding natural landforms</i> • <i>Incorporate micro-relief and drainage lines that are consistent with surrounding topography, to the greatest extent practicable</i> • <i>Maximise surface water drainage to the natural environment (excluding final void catchment)</i> 	Section 3.1.3
<i>Final voids</i>	<ul style="list-style-type: none"> • <i>Designed as long term groundwater sinks to maximise ground water flows across back filled pits to the final void</i> • <i>Minimise to the greatest extent practicable:</i> <ul style="list-style-type: none"> – <i>the size and depth of final voids;</i> – <i>the drainage catchment of final voids;</i> – <i>any high wall instability risk; and</i> – <i>the risk of flood interaction</i> 	Section 3.1.3 and 3.4
<i>Surface infrastructure of the development</i>	<ul style="list-style-type: none"> • <i>To be decommissioned and removed, unless DRG agrees otherwise</i> 	Section 3.1.1 and Section 3.5
<i>Rehabilitation materials</i>	<ul style="list-style-type: none"> • <i>Materials from areas disturbed under this consent (including topsoils, substrates and seeds) are to be recovered, managed and used as rehabilitation resources, to the greatest extent practicable</i> 	Section 3.1.4
<i>Water quality</i>	<ul style="list-style-type: none"> • <i>Water retained on the site is fit for the intended post-mining land use/s</i> • <i>Water discharged from the site is suitable for receiving waters and fit for aquatic ecology and riparian vegetation</i> 	Section 3.5
<i>Community</i>	<ul style="list-style-type: none"> • <i>Ensure public safety</i> • <i>Minimise adverse socio-economic effects associated with mine closure</i> 	Section 3.6

Table 1 (Continued)
Rehabilitation Management Development Consent DA 92/97 Conditions

MPO Development Consent DA 92/97	Section where addressed in this Rehabilitation Strategy document
<p>54. By the end of January 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none"> (a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with DRG and Council; (c) build upon the Rehabilitation Objectives in Table 11 and the conceptual final landform depicted in Figure 4 in Appendix 2, including identification of opportunities for increasing the areas of woodland and habitat connectivity within the rehabilitated landscape; (d) include details of the canopy, sub-canopy, understorey and ground strata species to be established in the rehabilitation areas, with a particular focus on ensuring the achievement of an appropriate level of diversity and mix of functional groups within each target community; and (e) include an indicative schedule for the staged rehabilitation of the development. <p>The Applicant must implement the approved strategy as approved from time to time by the Secretary.</p>	<p>This Rehabilitation Strategy</p> <p>Section 1.2.2</p> <p>Section 1.2.2</p> <p>Section 3</p> <p>Section 3.2</p> <p>Section 4.3</p>
<p>Progressive Rehabilitation</p> <p>55. The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.</p> <p>Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.</p>	<p>Section 4.1</p>
<p>55A. The Applicant must implement all reasonable and feasible measures to provide for the interim stabilisation and temporary vegetation of the existing rail loop and infrastructure corridor, as soon as reasonably practicable following the removal of infrastructure as required under condition 37.</p> <p>Note: The Applicant's obligations under this condition will cease following the transfer or grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee).</p>	<p>Section 4.2</p>
Statement of Commitments	
<p>Redundant Infrastructure Removal in Bengalla Mine Footprint</p> <ul style="list-style-type: none"> • MACH Energy will stabilise redundant rail infrastructure areas within the footprint of the Bengalla Mine such that they do not pose an ongoing material source of dust emissions (i.e. seeding to establish a cover crop and/or application of a dust suppressant) prior to management of these areas being transferred to Bengalla Mine. • Existing Mount Pleasant Operation rail spur erosion and sediment control water management structures (e.g. sediment fences) within the footprint of Bengalla Mine will also be left in place, subject to agreement of Bengalla Mine. 	<p>Section 4.2</p>

3 REHABILITATION STRATEGY

Sections 3.1 to 3.6 provide a description of rehabilitation strategies to address the objectives in Condition 53, Schedule 3 of Development Consent DA 92/97.

3.1 GENERAL REHABILITATION PRINCIPLES

This section describes the post-mining land use and rehabilitation domains, and general principles that will be applied to all rehabilitated landforms at the MPO.

The general principles are based on the principles provided in the *National Standards for the Practice of Ecological Restoration in Australia, 2nd Edition* (Society for Ecological Restoration Australasia [SERA], 2018) as follows:

1. *Ecological restoration practice is based on an appropriate local indigenous reference ecosystem.*
2. *Restoration inputs will be dictated by level of resilience and degradation.*
3. *Recovery of ecosystem attributes is facilitated by identifying clear targets, goals and objectives.*
4. *The goal of ecological restoration is full recovery, insofar as possible, even if outcomes take long timeframes or involve high inputs.*
5. *Restoration science and practice are synergistic.*
6. *Social aspects are critical to successful ecological restoration.*

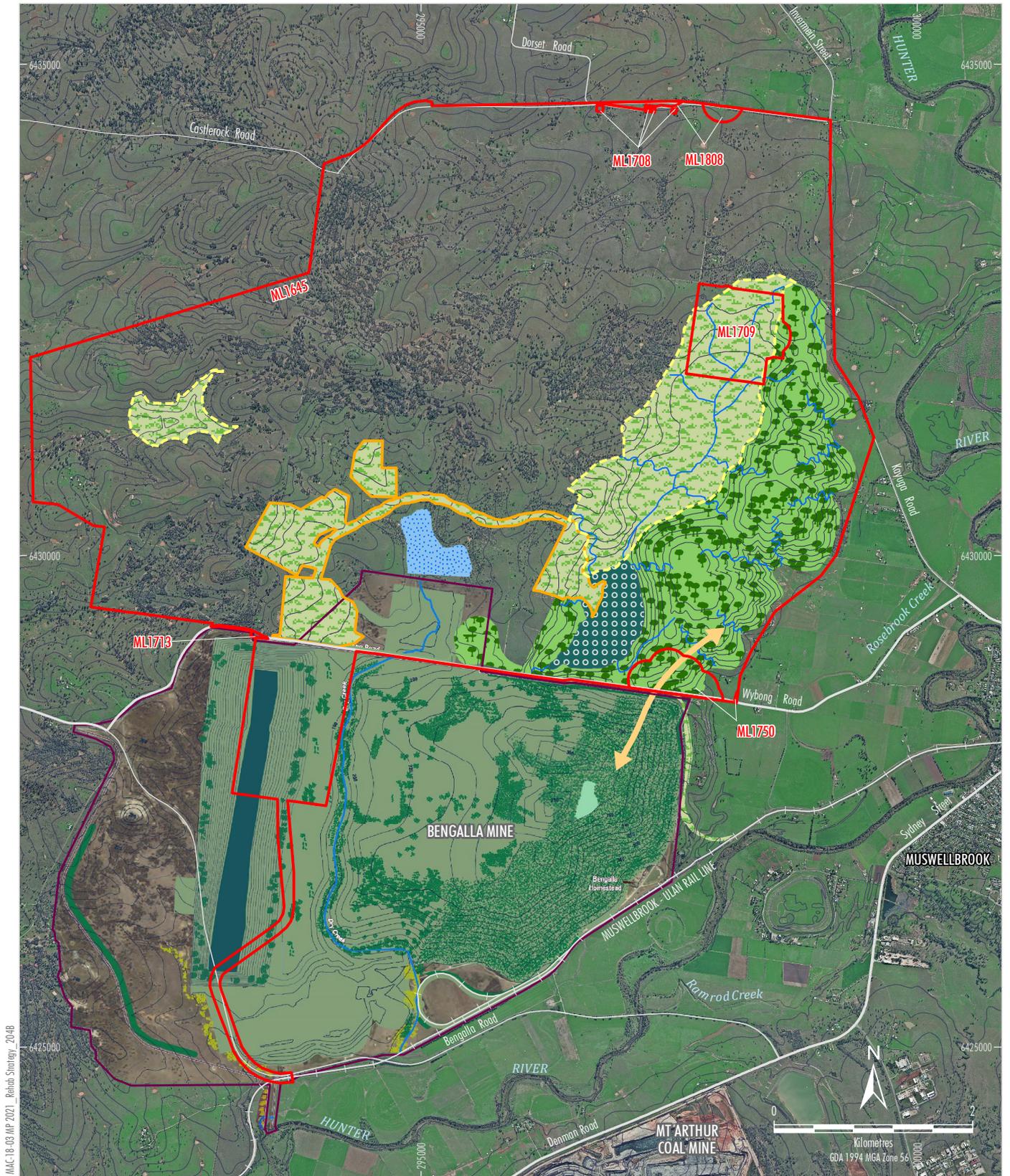
3.1.1 Post-Mining Land Use and Rehabilitation Domains

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 MPO 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 the inclusion of some intensive agricultural/industrial post-mining land uses that provide employment for the local community.

Provisional Post-Mining Land Use Domains are shown on Figure 5 and described in Table 2. Table 2 has been prepared in accordance with the *Mining Operations Plan (MOP) Guidelines* (DRE, 2013), where each of the Secondary Domains are characterised by a similar post-mining land use objective.

The Post-Mining Land Use Domains will be reviewed in consultation with key stakeholders (including the MSC, relevant regulatory agencies [including the DPIE, NSW Resources Regulator, and the NSW Department of Primary Industries [DPI] Agriculture], and the MPO's CCC) during the life of the MPO as part of the MPO Rehabilitation Management Plan and Rehabilitation Strategy revision process (Section 5). As described in Section 1.2.2, MACH Energy will revise this Rehabilitation Strategy, as required, to maintain consistency with the Rehabilitation Management Plan approved by the NSW Resources Regulator under the provisions of the NSW *Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021*.

As rehabilitation progresses, an independent Land Capability Assessment will be undertaken using the *Land and soil capability assessment scheme: second approximation - a general rural land evaluation system for New South Wales* (NSW Office of Environment and Heritage [OEH], 2012) to identify specific locations suitable for low intensity agricultural activities.



- LEGEND**
- Mount Pleasant Mining Lease Boundary
 - Secondary/Post-mining Land Use Domains
 - Domain A - Final Void
 - Domain B - Water Infrastructure and Storage
 - Domain C - Agricultural Land
 - Domain D - Native Woodland/Grassland
 - Potential Low Intensity Agriculture Area
 - Potential High Intensity Agriculture Area
 - Wildlife Corridor

Bengalla Mine Conceptual Final Landform *
 Project Boundary (Appendix 2 of Development Consent SSD-5170)
 (Dated 23 December 2016)

* Digitised from Appendix 9 of Development Consent (SSD-5170)
 and amended in the Mount Pleasant Operation CHPP area.

Source: NSW Spatial Services (2019); Department of Planning and Environment (2016); MACH Energy (2021)
 Orthophoto: MACH Energy (Aug 2016)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Indicative Final Rehabilitation and
 Post-mining Land Use Domains

Note: Figure excludes some project components such as water management infrastructure, infrastructure within the Infrastructure Area Envelope, offsite coal transport infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

Figure 5

Table 2
Provisional Post-Mining Land Use Domains

Code	Secondary Domain	Description
A	Final Void	<ul style="list-style-type: none"> Infrastructure will be decommissioned and removed (unless the NSW Resources Regulator agrees otherwise). Residual final void waterbody. Final void (and associated drainage network) will be shaped to reflect a less engineered profile that is more consistent with the surrounding natural environment. Final void designed as long-term groundwater sink to maximise groundwater flows across back filled pits to the final void. Could provide long-term use for recreational or industrial activities.
B	Water Infrastructure and Storage	<ul style="list-style-type: none"> Water management infrastructure that will remain post-mining (e.g. upslope diversions). 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).
C	Rehabilitation Area – Agricultural Land	<ul style="list-style-type: none"> Infrastructure will be decommissioned and removed (unless DRG agrees otherwise). Areas that will be rehabilitated to a standard suitable for agricultural (or industrial) post-mining land use (including potential intensive land use areas). 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	<ul style="list-style-type: none"> Infrastructure will be decommissioned and removed (unless the NSW Resources Regulator agrees otherwise). Areas that will be rehabilitated to native woodland/grassland. Consistent with MSC's recommendations, the eastern face of the MPO final landform will be revegetated with native tree and shrub species. Other Domain D areas have been selected based on slope (i.e. areas that will be of reduced agricultural use). Provisional Plant Community Types (PCTs) are discussed in Section 3.2.

Based on the above, and as shown on Figure 4, the final MPO domains will include:

- Domain 1C – Infrastructure Area rehabilitated to Agricultural Land;
- Domain 1D – Infrastructure Area rehabilitated to Native Woodland/Grassland;
- Domain 2C – Fines Emplacement Area rehabilitated to Agricultural Land;
- Domain 3B – Water Infrastructure and Storage retained post-mining;
- Domain 3D – Water Management Area rehabilitated to Native Woodland/Grassland;
- Domain 4A – Final Void;
- Domain 5C – Overburden Emplacement Area rehabilitated to Agricultural Land; and
- Domain 5D – Overburden Emplacement Area rehabilitated to Native Woodland/Grassland.

Rehabilitation objectives have been developed for the MPO's rehabilitation domains and are described in detail in the MPO's 2021-2023 MOP/RMP (and will continued to be included in future versions of the MPO's Rehabilitation Management Plan).

3.1.2 Rehabilitation Phases

The rehabilitation phases for the MPO 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.
 - Areas at the Ecosystem and Land Use Establishment phase at the MPO reflects lands where habitat features have been placed, and the area has been topsoiled, deep ripped and revegetated with species relevant to the post-mining land use of the area (e.g. native woodland/grassland species or select pasture species). For MPO Overburden Emplacement areas this includes land that has been seeded with stabilising sterile cover crop species and native grass, shrub and tree species representative of the target Plant Community Types (PCTs) (Section 3.2).
- Ecosystem and Land Use Sustainability Phase – incorporates rehabilitation of key ecosystem attributes including plant species composition, floristic structure, nutrient cycling, natural recruitment and connectivity characteristic of a sustainable landscape.
- Phase 6 – Relinquished Lands – land use and landscape is deemed as suitable to be relinquished from the Mining Lease.

As described in Section 4.1, temporary rehabilitation, including hydromulching and seeding with sterile cover crops, of temporary landforms (e.g. mine access roads and construction areas etc.), will be undertaken across the site to minimise the total area exposed at any time. This temporary rehabilitation will be undertaken where areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated, in accordance with Condition 55, Schedule 3 of Development Consent DA 92/97. Temporary rehabilitation will be undertaken within 6 months of these areas becoming available. Temporary rehabilitation is described in further detail in the MPO 2021-2023 MOP/RMP and will continue to be described in future versions of the MPO Rehabilitation Management Plan.

3.1.3 Final Landform

MACH Energy is aware of the level of local interest with respect to the shape and form of MPO final mine landforms. MACH Energy has therefore developed the following design principles for the MPO final landform:

- The emplacement landform will 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 will incorporate micro-relief to increase drainage stability and avoid major engineered drop structures where practical.
- The final void (and associated drainage network) will 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 that were approved as part of MOD 3 were intended to improve the overall appearance of the MPO landform by incorporating the following concepts:

- The final landform surface of the upper lifts on the eastern side of the emplacement will be varied to break up the horizon line when viewed from the east.
- The toe of the emplacement will 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 final landform create a number of spurs and valleys, with the high points on the 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 final landform is to develop drainage features in the post-mine landform that mitigate erosion potential. This will be achieved by incorporating micro-relief into the drainage design.

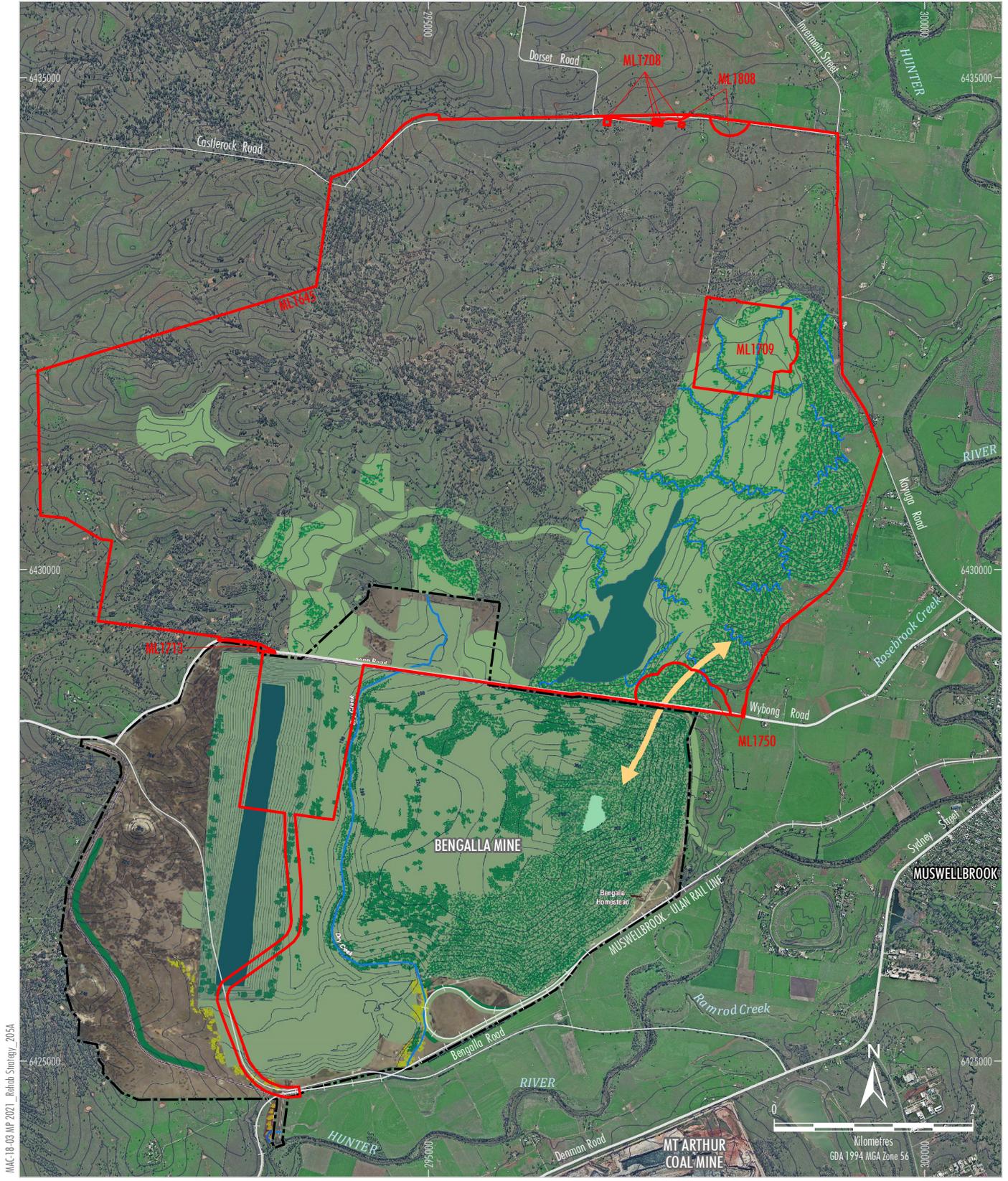
The NSW Mineral Council's *Rehabilitation by Design Practice Notes* (2007) and Department of Environment & Climate Change's *Managing Urban Stormwater Soils and Construction Volume 2E Mines and Quarries* (2008) provide principles for the construction of stable batter slopes. These principles include:

- 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 6.

In particular, MACH Energy will 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 and investigate opportunities to develop small ephemeral wetlands.
- 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 complex and concave stream bed profile.
- Establish diverse and variable density native tree and shrub 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.



MACH-18-03-MP-2021_Rehab Strategy_2025A

- LEGEND**
- Mount Pleasant Mining Lease Boundary
 - Final Void
 - Final Rehabilitation
 - ➔ Wildlife Corridor

Bengalla Mine Conceptual Final Landform*
 Project Boundary (Appendix 2 of Development Consent SSD-5170)
 (Dated 23 December 2016)

* Digitised from Appendix 9 of Development Consent (SSD-5170) and amended in the Mount Pleasant Operation CHPP area.

Source: NSW Spatial Services (2019); Department of Planning and Environment (2016); MACH Energy (2021)
 Orthophoto: MACH Energy (Aug 2016)

Note: Figure excludes some project components such as water management infrastructure, infrastructure within the Infrastructure Area Envelope, offsite coal transport infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

MACHEnergy
 MOUNT PLEASANT OPERATION
 Conceptual Final Landform

Figure 6

The final landform drainage lines will be designed to accommodate natural erosive processes. This will 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 will be incorporated into the design of the relevant final landform drainages. This will also be informed by investigation into the physical characteristics of waste rock and soil materials at the MPO for provision of appropriate rock, sub-soil and topsoil material for use on outer batters and in drainage features.

Further refinement of the conceptual final landform has been undertaken and has involved GeoFluv™ modelling and other similar catchment/drainage review and landform design software to incorporate micro-relief and drainage/erosion control to limit the need for bench drains on the outer batters of the Eastern Out of Pit Emplacement.

Throughout the life of the MPO, the conceptual final landform may be revised to reflect the outcomes of the above investigations, in consultation with MSC and relevant NSW Government agencies. Progressive updates to the final landform that are consistent with the design intent concepts outlined above will be documented in the MPO Rehabilitation Management Plan.

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 of the MPO.

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 (lower slopes), and more limited areas of slopes up to approximately 14 degrees (upper slopes), to provide visually important slope variation, while also maintaining waste rock emplacement capacity.

Figures 7 and 8 provide visual simulations that illustrate how the implementation of the concepts described in this section result in a significantly improved final landform for the MPO.

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 (e.g. upper slopes) and are part of an integrated geomorphologically robust landform design that reflects the composition of the waste rock material.

MACH Energy will continue to refine the design of the proposed final landform, and where relevant, will justify areas to be constructed at steep grades (including slopes greater than 14 degrees) on the basis of maintaining waste emplacement capacity and how this is acceptable due to its hydrological/drainage position and/or geomorphically robust design in the final landform, in the MPO Rehabilitation Management Plan.

External Drainage

The conceptual final landform shown on Figure 6 is representative of the final landform that will remain if the MPO does not obtain suitable future authorisations to continue mining beyond 2026. In the event that mining did not proceed past 2026, the final landform will 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 6).

LEGEND
Established Rehabilitation



MACHEnergy
MOUNT PLEASANT OPERATION
Final Landform Simulation -
Floodplain Properties
(Kayuga Road)
Figure 7



LEGEND
Established Rehabilitation



In the final landform (Figure 6) 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

To minimise the area of steep slopes and the land sterilised by the final void, MACH Energy has designed the 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 3.3).

This includes a central area where incident rainfall will 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 will be mined through in the originally approved 21 year mine life.

The design of the final void will be refined as required to ensure that the final void will not spill to the environment and will provide a groundwater sink (MACH Energy, 2017b). Final void modelling has been re-evaluated as part of the Mount Pleasant Optimisation Project application (Section 1.1). Subject to DPIE approval of the Mount Pleasant Optimisation Project application, outcomes from the contemporary modelling would be incorporated into the MPO Groundwater Management Plan and the Rehabilitation Management Plan that will be prepared to reflect the approved project.

Out of Pit Emplacement – Outer Batters Construction Methodology

To facilitate the more rapid establishment of the final landform profiles, MACH Energy will generally 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 will be prioritised. This approach has the advantage of providing a visual and noise attenuation barrier between the open cut operations and the town of Muswellbrook, as well as facilitating the rapid establishment of initial rehabilitation on the lower portions of the emplacement (Section 4.1).

3.1.4 Rehabilitation Materials

MACH Energy will undertake measures to retain as much material as practicable from the pre-mining landform and surrounds to be used during rehabilitation. Such measures include:

- Implementing a Vegetation Clearance Protocol which will identify and retain material for rehabilitation including habitat material (e.g. tree hollows, stag trees, coarse woody debris and rocks) and seeding vegetation for seed collection prior to clearing.
- Seed collection and propagation using the on-site Seed Harvesting Facility.
- Rehabilitation material characterisation in order to:
 - identify any physical or chemical deficiencies or limiting factors;
 - develop selective placement strategies or develop soil amelioration techniques;
 - identify material for use in the root zone, which is capable of supporting sustainable vegetation establishment, growth and natural replacement;

- identify materials that limit plant growth or which may contaminate surface or groundwater (e.g. salinity), and hence may require special handling, treatment or disposal; and
- identify any propensity for spontaneous combustion.
- Topsoil stripping (guided by soil mapping) and management in designated stockpiles.

Where possible, topsoil will be directly transported to rehabilitation areas. Where this is not possible, topsoil stockpiles will be established separate to subsoil stockpiles and away from active transport corridors.

Subsoils would also be stockpiled for use in the MPO rehabilitation program. Soil testing would be undertaken to inform whether any amelioration of the soils (i.e. gypsum or lime treatment) is required prior to or during reapplication on MPO rehabilitation areas.

Some externally sourced materials (i.e. select rock for armouring drainage lines) may also be required throughout the mine life.

Soil management is described in further detail in the MPO's 2021-2023 MOP/RMP (and will continue to be described in future versions of the MPO Rehabilitation Management Plan).

A detailed description of how salvaged habitat materials (e.g. stag trees, coarse wood debris) and collected native seed from vegetation clearance areas will be stored at the on-site Seed Harvesting Facility and used in the rehabilitation program is provided in the MPO Biodiversity Management Plan.

3.2 AREAS PROPOSED FOR NATIVE ECOSYSTEM RE-ESTABLISHMENT

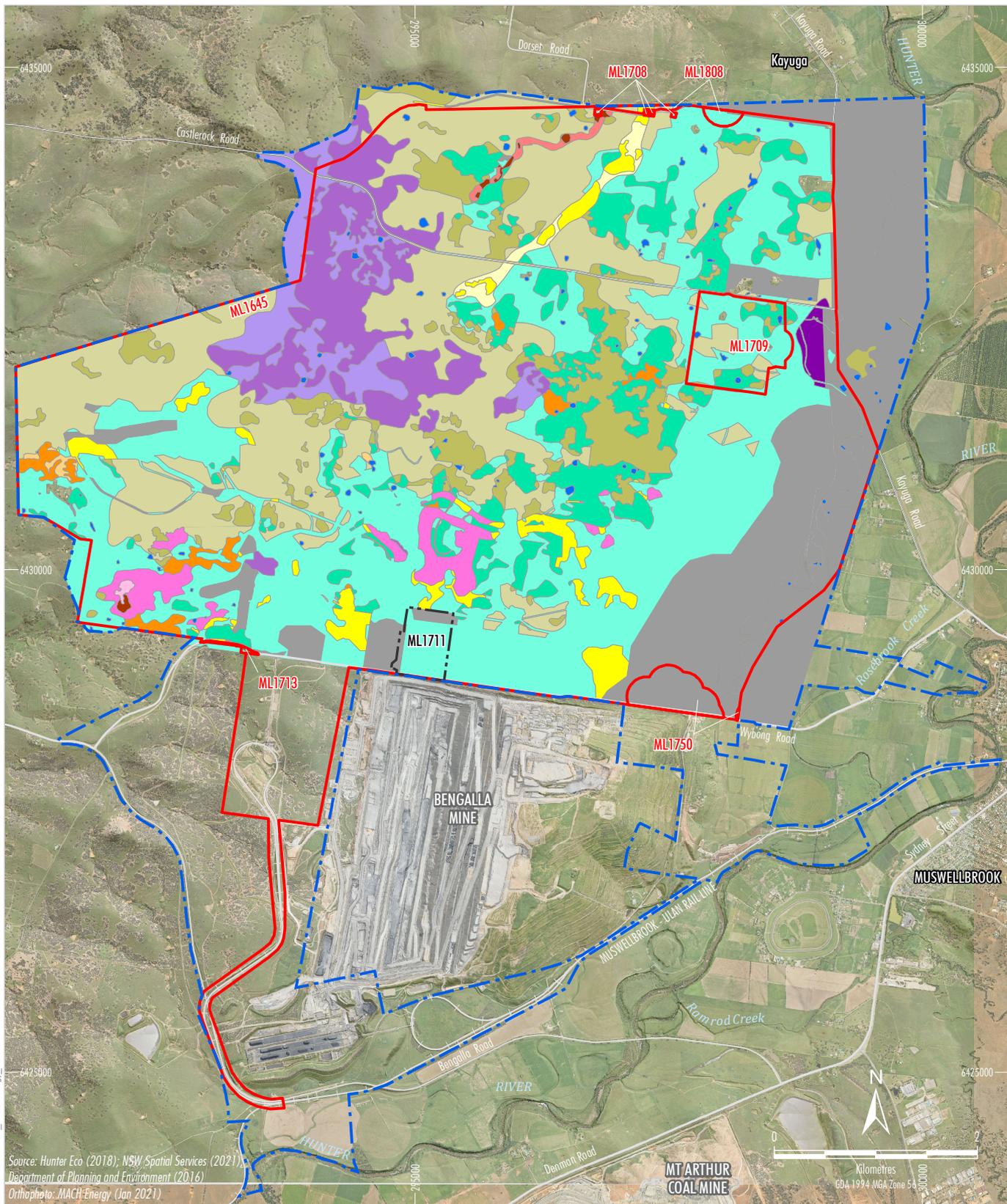
In accordance with the rehabilitation objectives in Table 11 of Condition 53, Schedule 3 of Development Consent DA 92/97, the proposed native ecosystem areas will aim to restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area. In addition, MACH Energy is required to include development of:

- potential habitat for threatened flora and fauna species;
- riparian habitat, within any diverted and/or re-established creek lines and retained water features; and
- wildlife corridors, as far as is reasonable and feasible.

The following subsections provide a description of measures to be implemented to meet these objectives.

3.2.1 Native Woodland Ecosystems and Habitat for Threatened Flora and Fauna

Updated vegetation mapping of the MPO area was undertaken by HunterEco in 2018 (Figure 9), following approval of MOD 3. This mapping was undertaken in order to align vegetation communities with contemporary Plant Community Type (PCT) definitions, as well as to inform target woodland ecosystems and species selection for rehabilitation. The updated vegetation mapping has been supplemented in areas by earlier vegetation mapping, undertaken by Cumberland Ecology in 2011.



IMC:18-03 MIP 2021 - Rehab Strategy, 20/6A
 Source: Hunter Eco (2018); NSW Spatial Services (2021);
 Department of Planning and Environment (2016)
 Orthophoto: MACH Energy (Jan 2021)

- LEGEND**
- Modified Development Consent Boundary*
 - Mount Pleasant Operation Mining Lease Boundary
 - Bengalla Mining Lease Boundary
- Vegetation Mapping**
- White Box - Narrow-leaved Ironbark - Blakely's Red Gum [DNG]¹
 - White Box - Narrow-leaved Ironbark - Blakely's Red Gum¹
 - Spotted Gum - Narrow-leaved Ironbark Woodland [DNG]
 - Spotted Gum - Narrow-leaved Ironbark Woodland²
 - Spotted Gum - Grey Box x White Box Woodland/Forest [DNG]
 - Spotted Gum - Grey Box x White Box Woodland/Forest²
 - Slaty Box Woodland [DNG]
 - Narrow-leaved Ironbark - Grey Box Grassy Woodland [DNG]
 - Narrow-leaved Ironbark - Grey Box Grassy Woodland³
 - Narrow-leaved Ironbark Shrubby Forest [DNG]
 - Narrow-leaved Ironbark Shrubby Forest³

- Grey Box x White Box Grassy Woodland [DNG]¹
- Grey Box x White Box Grassy Woodland¹
- Forest Red Gum Grassy Open Forest [DNG]¹
- Forest Red Gum Grassy Open Forest¹
- Non-native
- Dam

¹ TEC Listed BC Act: White Box Yellow Box Blakely's Red Gum Woodland
² TEC Listed BC Act: Central Hunter Ironbark-Spotted Gum-Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions
³ TEC Listed BC Act: Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions

* Approximate graphical representation of the Schedule of Land presented as Appendix 1 of Development Consent DA 92/97 (as modified on 16 November 2018)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Pre-Mining Vegetation Communities

Figure 9

Analysis of this vegetation mapping indicates that the most widespread PCTs being disturbed by the MPO are the following:

- PCT 483 – Grey Box - White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley (representative of the White Box EEC listed under the BC Act and EPBC Act).
- PCT 1604 – Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland of the central and lower Hunter.
- PCT 1605 – Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter.

These communities will be targeted for rehabilitation on appropriate slopes, as ecosystems characteristic of vegetation communities found in the local area and also to provide potential habitat for threatened flora and fauna. In addition to these key PCTs, PCT 1543 *Rusty Fig - Native Quince - Native Olive dry rainforest of the Central Hunter Valley* is being trialled in aspect planting (i.e. targeted suitable areas) surrounding drainage areas of rehabilitated landforms. PCT 1543 occurs surrounding riparian areas within the local Muswellbrook region and often associated with/occurs adjacent to PCT 1605. Supporting information regarding the suitability of PCT 1543 has been provided to the DPIE with the submission of this revised Rehabilitation Strategy.

The eastern face of the final landform will be targeted for revegetation using the species characteristic of these PCTs as conceptually shown on Figure 5 (i.e. Domain D – Native Woodland/Grassland) and Figure 6. These PCTs are proposed to provide potential habitat (in the long-term) for threatened flora and fauna that have been previously recorded in the area, including:

- Woodland birds:
 - Grey-crowned Babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*).
 - Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*).
 - Speckled Warbler (*Chthonicola sagittata*).
 - Black-chinned Honeyeater (eastern subspecies) (*Melithreptus gularis gularis*).
 - Diamond Firetail (*Stagonopleura guttata*).
 - Varied Sittella (*Daphoenositta chrysoptera*).
- Mammals:
 - Squirrel Glider (*Petaurus norfolcensis*).
 - Spotted-tailed Quoll (*Dasyurus maculatus*).
 - Eastern Freetail-bat (*Mormopterus norfolkensis*).
 - Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*).
 - Eastern Bentwing-Bat (*Miniopterus schreibersii oceanensis*).
 - Grey-headed Flying-fox (*Pteropus poliocephalus*).
 - Eastern False Pipistrelle (*Falsistrellus tasmaniensis*).
 - Southern Myotis (*Myotis macropus*).
 - Greater Broad-nosed Bat (*Scoteanax rueppellii*).
 - Eastern Cave Bat (*Vespadelus troughtoni*).
- Flora:
 - Tiger Orchid (*Cymbidium canaliculatum*) – Endangered Population in the Hunter Catchment.

Provisional species lists for the target PCT communities targeted for revegetation of the MPO (as well as a targeted native grass and sterile cover crop species list) is provided in Table 3. These species lists and seed mixes may be subject to amendment due to availability from MPO's Seed Harvesting Facility and/or from external providers. It is anticipated that the provisional list of species for the target PCTs will be further augmented and refined over the life of the MPO based on the results of rehabilitation monitoring, on-site rehabilitation investigations and trials and consultation with key stakeholders.

These species lists have been developed in consultation with specialist ecologists, including Greg Major, a Restoration Ecologist, and Dr Carmen Castor who has 18 years' experience in research in mine site native ecosystems rehabilitation in the Hunter Valley. Supporting information, prepared by Greg Major and Dr Castor, regarding development of, and justification for, the species lists for the target PCTs, has been provided to the DPIE with the submission of this revised Rehabilitation Strategy. Alternate native species relevant to the target rehabilitation PCTs have also been identified that could be used in the rehabilitation program in the event of limited seed supply.

A revegetation rationale has been developed to guide where each PCT will be re-established on MPO final landforms (e.g. Ironbark communities would be more suited to upper slope areas and Grey Box – White Box communities would be more suited to lower slopes and flatter areas). The annual rehabilitation plans include details of target PCTs and PCT planting plans/maps.

Consistent with the MSC's recommendations, highly competitive exotic grasses (e.g. Rhodes Grass [*Chloris gayana*]) and non-local Australian species (e.g. Golden Wreath Wattle [*Acacia saligna*]) will not be used anywhere on-site.

Table 3
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
PCT 483 Grey Box/White Box Grassy Open Woodland	
<i>Eucalyptus moluccana</i>	Grey Box
<i>E. albens</i>	White Box
<i>E. melliodora</i>	Yellow Box
<i>Angophora floribunda</i>	Rough-bark Apple
<i>Brachychiton populneus</i>	Kurrajong
<i>Notelaea microcarpa</i>	Native Olive
<i>Psyrax odorata</i>	Shiny-leaved Canthium
<i>Acacia falcata</i>	Falcata Wattle
<i>Acacia decora</i>	Western Golden Wattle
<i>Acacia paradoxa</i>	Kangaroo Thorn
<i>Acacia decurrens</i>	Green Wattle
<i>Dodonaea viscosa</i>	Hop Bush
<i>Daviesia ulicifolia</i>	Gorse-bitter Pea
<i>Sida hackettiana</i>	Spiked Sida
<i>Calotis lappulaceae</i>	Burr Daisy
<i>Einadia hastata</i>	Nodding Saltbush
<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Atriplex semibaccata</i>	Creeping Saltbush
<i>Einadia trigonos</i>	Fishweed
Native grass and sterile cover crop mix (see below)	

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
PCT 1605 Narrow leaved Ironbark / Native Olive Shrubby Open Forest	
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark
<i>Notelaea microcarpa</i>	Native Olive
<i>Myoporum montanum</i>	Boobialla
<i>Olearia elliptica</i>	Sticky Daisy Bush
<i>Breynia oblongifolia</i>	Coffee Bush
<i>Acacia paradoxa</i>	Kangaroo Wattle
<i>Acacia falcata</i>	Falcate Wattle
<i>Acacia decora</i>	Western Golden Wattle
<i>Dodonaea viscosa</i>	Hop Bush
<i>Sida hackettiana</i>	Spiked Sida
<i>Lomandra longifolia</i>	Matt Rush
<i>Solanum cinereum</i>	Nawarra Burr
<i>Calotis lappulaceae</i>	Burr Daisy
<i>Einadia hastata</i>	Nodding Saltbush
<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Atriplex semibaccata</i>	Creeping Saltbush
Native grass and sterile cover crop mix (see below)	

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
PCT 1604 Narrow leaved Ironbark/ Grey Box/ Spotted Gum Shrub / Grass Woodland	
<i>Eucalyptus moluccana</i>	Grey Box
<i>E. crebra</i>	Narrow-leaved Ironbark
<i>Corymbia maculata</i>	Spotted Gum
<i>Eucalyptus tereticornis</i>	Forest Red Gum
<i>Eucalyptus fibrosa</i>	Broad-leaved Ironbark
<i>Acacia parvipinnula</i>	Silver-stem Wattle
<i>Acacia amblygona</i>	Fan Wattle
<i>Bursaria spinosa</i>	Blackthorn
<i>Olearia elliptica</i>	Sticky Daisy Bush
<i>Dodonaea viscosa</i>	Hop Bush
<i>Acacia decora</i>	Western Golden Wattle
<i>Acacia paradoxa</i>	Kangaroo Thorn
<i>Daviesia ulicifolia</i>	Gorse Bitter Pea
<i>Acacia falcata</i>	Falcate Wattle
<i>Indigofera australis</i>	Native Indigo
<i>Kunzea ambigua</i>	Tick Bush
<i>Breynia oblongifolia</i>	Coffee Bush
<i>Allocasuarina luehmannii</i>	Bull Oak
<i>Einadia hastata</i>	Nodding Saltbush
<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Atriplex semibaccata</i>	Creeping Saltbush
<i>Sida hackettiana</i>	Spiked Sida
<i>Dysphania carinata</i>	Green Crumbweed
Native grass and sterile cover crop mix (see below)	

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name	Species	Common Name
TRIAL PCT 1543 Rusty Fig - Native Quince - Native Olive Dry Rainforest of the Central Hunter Valley			
<i>Alectryon subcinereus</i>	Native Quince	<i>Geijera parvifolia</i>	Wilga
<i>Ficus rubignosa f rubignosa</i>	Rusty Fig	<i>Geijera salicifolia</i>	Scrub Wilga
<i>Melia azedarach</i>	White Cedar	<i>Olearia elliptica</i>	Sticky Daisy Bush
<i>Allocasuarina torulosa</i>	Forest Oak	<i>Teucrium juncea</i>	Bead Bush
<i>Angophora floribunda</i>	Rough-barked Apple	<i>Einadia trigonos</i>	Fishweed
<i>Brachychiton populneus</i>	Kurrajong	<i>Lomandra longifolia</i>	Matt Rush
<i>Casuarina cunninghamiana</i>	River Oak	<i>Carex appressa</i>	Tall Sedge
<i>Acacia falcata</i>	Falcate Wattle	<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Acacia decora</i>	Western Golden Wattle	<i>Sida hackettiana</i>	Spiked Sida
<i>Acacia paradoxa</i>	Kangaroo Thorn	<i>Dysphania carinata</i>	Green Crumbweed
<i>Acacia implexa</i>	Hickory	<i>Gahnia aspera</i>	Saw Sedge
<i>Dodonaea viscosa</i>	Hop Bush	<i>Atriplex semibaccata</i>	Berry Saltbush
<i>Melicope micrococca</i>	White Euodia	Native grass and sterile cover crop mix	
<i>Myrsine howittiana</i>	Brush Muttonwood		
<i>Myrsine variabilis</i>	Muttonwood		
<i>Streblus brunonianus</i>	Whalebone Tree		
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		
<i>Notelaea microcarpa</i>	Native Olive		
<i>Breynia obongifolia</i>	Coffee Bush		
<i>Bursaria spinosa</i>	Blackthorn		
<i>Ficus coronata</i>	Sandpaper Fig		

Table 3 (Continued)
Plant Community Types and Provisional Species Lists Proposed for Native Ecosystem Rehabilitation

Species	Common Name
Native Grass and Sterile Cover Crop Mix*	
<i>Aristida</i> mix (includes <i>A. ramosa</i> , <i>A. vagans</i>)	Purple Wiregrass, Threeawn Speargrass
<i>Austrodanthonia</i> mix (includes <i>A. setacea</i> , <i>A. fulva</i> , <i>A. caespitosa</i>)	Smallflower Wallaby Grass, Wallaby Grass, Ringed Wallaby Grass
<i>Austrostipa scabra</i>	Speargrass
<i>Austrostipa verticillata</i>	Slender Bamboo Grass
<i>Bothriochloa macra</i> and <i>B. decipiens</i>	Red Grass
<i>Dichelachne micrantha</i>	Shorthair Plumegrass
<i>Chloris truncata</i>	Windmill Grass
<i>Cymbopogon refractus</i>	Barbed Wire Grass
<i>Dichanthium sericeum</i>	Queensland Bluegrass
<i>Microlaena stipoides</i>	Weeping grass
<i>Panicum effusum</i>	Hairy Panic
<i>Eragrostis</i> sp.	Lovegrass
<i>Elymus scaber</i>	Common Wheatgrass
<i>Digitaria</i> sp.	Umbrella Grass
<i>Sporobolus creber</i>	Western Rat-tail Grass
<i>Themeda triandra</i>	Kangaroo Grass
<i>Cynodon dactylon</i> #	Couch Grass
<i>Echinochloa esculenta</i> #	Japanese Millet
<i>Avena sativa</i> #	Oats

* Includes but is not limited to the above species and includes species endemic to the area.

Sterile cover crop species.

Habitat features including habitat/stag trees, rock piles and log piles, will be installed to provide fauna habitat across MPO rehabilitation areas. Where practicable, a minimum of two habitat/stag trees, two log piles and two rock piles will be installed per hectare across Secondary Domain D – Native Woodland/Grassland areas (excluding inappropriate areas e.g. drainage features and water managements structures within Secondary Domain D). Where this is not possible, further augmentation of habitat will consider the use of supplementary features such as nest and bat boxes.

The habitat requirements of the fauna species outlined in Section 3.2.2 will be considered when selecting and placing features across the landscape. Habitat/stag trees will be selected based upon the presence of hollows, loose bark, height and branches for nesting. Rock for rock piles where possible will be of sandstone of similar material. Log piles will be used to recreate ‘fallen timber’ within the landscape, and will be placed parallel to the contour so minimise erosion potential downslope.

3.2.2 Riparian Habitat

The main drainage feature within the vicinity of the MPO is the Hunter River which flows in a southerly direction approximately 1 km to the east of the MPO area. The pre-mining environment of the MPO consists of a number of ephemeral drainage lines that drain to the Hunter River, however no perennial streams/creeks exist on-site.

The final landform design will contain ephemeral drainage lines as conceptually shown by blue lines on Figures 5 and 6. These drainage lines will be targeted for the creation of riparian habitat. As described in Section 3.1.3, final landform drainage lines will be designed to accommodate natural erosive processes and will incorporate 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. The detailed design will involve modelling and other similar catchment/drainage and landform design software to determine specific locations and design features of drainage line/riparian habitat areas.

As described in Section 3.2.1, PCT 1543 *Rusty Fig - Native Quince - Native Olive dry rainforest of the Central Hunter Valley* is being trialled in aspect planting surrounding drainage areas of rehabilitated landforms. PCT 543 is being trialled due to its association with PCT 1605 and presence surrounding riparian areas within the local Muswellbrook region.

The main retained water features in the final landform will be the final void and potentially the Mine Water Dam on the southern ML boundary (Figure 5).

Revegetation of the void walls/batters will use species that are appropriate for its steepness and aspect, however this is not envisaged to create a riparian ecosystem, rather, this vegetation will be used for stabilisation and aesthetic purposes.

The Mine Water Dam at the southern ML boundary (Figure 5) will potentially be retained to support agricultural land uses and provide conditions for establishment of riparian habitat. If the water storage is retained, vegetation species occurring in riparian areas of the surrounds will be used for revegetation. Species which may be targeted for revegetation of this area will include:

- Upper stratum – River Red Gum (*Eucalyptus camaldulensis*), River Sheoak (*Casuarina cunninghamiana* subsp. *cunninghamiana*), Rough-barked Apple (*Angophora floribunda*).
- Middle stratum - Tree Violet (*Melicytus dentatus*), Willow Bottlebrush (*Callistemon salignus*).
- Lower stratum - Slender Bamboo Grass (*Austrostipa verticillata*), Wallaby Grasses (*Rytidosperma* spp.), Couch Grass (*Cynodon dactylon*), Weeping Grass (*Microlaena stipoides*), Red Grass (*Bothriochloa macra*), Tall Spike-rush (*Eleocharis sphacelata*), Spiny-headed Mat-rush (*Lomandra longifolia*), Tall Sedge (*Carex appressa*).

During the operational phase of the MPO, riparian vegetation (including sedge and rush species) would also be established around sediment dams to provide areas of riparian habitat.

3.2.3 Wildlife Corridors

Consistent with MSC's recommendations for the Bengalla Mine final landform, the eastern face of the MPO final landform will be revegetated with native tree, shrub and grass species as shown in Figure 5 (i.e. Domain D – Native Woodland/Grassland) and Figure 6. This will allow the landform to assimilate with the open woodland communities in the surrounding environment.

The revegetated eastern face would provide a contiguous wildlife corridor with the revegetated eastern face of the Bengalla Mine for native woodland bird species (Figures 5 and 6). Given the close proximity of the revegetated woodland areas, bird species could utilise both areas for habitat establishment and foraging. In addition, the vegetation on the eastern face of the MPO Eastern Out of Pit Overburden Emplacement would develop a contiguous wildlife corridor with the Bengalla Mine rehabilitation and surrounding remnant woodland, and also be visually consistent with the revegetation of the eastern face of the Bengalla Mine landform. As described in Section 3.2.1, standing dead stag/habitat trees will be installed across the MPO Eastern Out of Pit Overburden Emplacement to provide immediate habitat 'stepping stones' prior to development of planted trees over the next few decades.

MACH Energy has undertaken preliminary consultation with the Bengalla Mining Company regarding integration of rehabilitation across the MPO and the Bengalla Mine. MACH Energy proposes to continue collaboration with the Bengalla Mining Company by (for example) undertaking joint rehabilitation workshops to discuss rehabilitation strategies, revegetation species and implementation measures. MACH Energy is committed to information sharing to facilitate integration of rehabilitation across the MPO and the Bengalla Mine.

3.3 AREAS PROPOSED FOR AGRICULTURAL LAND

During consultation, MSC indicated a preference for the option of intensive agricultural/industrial post-mining land uses that provide potential employment for the local community. Consequently, rehabilitation of the MPO will consider both low and high intensity agricultural land uses subject to Land Capability Assessments. Low intensity agriculture will consist of reinstating grazing capability. High intensity agriculture will be targeted on former infrastructure sites with low slopes and internal drainage, and may include, for example, feedlots, poultries or agricultural produce processing facilities, and glasshouses. However until such a time a proposal is developed for such uses, these areas would be rehabilitated to low intensity agriculture. Descriptions of currently proposed low and high intensity agriculture post mining land uses is provided below. These land uses may be refined through further consultation with MSC and other stakeholders (including the MPO’s CCC) during the MPO mine life.

Low Intensity Agriculture

Following landform reconstruction using the strategies described in Section 3.1.3, areas proposed for low intensity agriculture (Figure 5) will be prepared to accommodate sustainable/managed livestock grazing. The objective will be to establish areas to be classified as Land Capability Class 4, Class 5 or Class 6 lands. The definitions of Land Capability Classes 4, 5 and 6 are provided in Table 4 (consistent with the OEH [2012] *The land and soil capability assessment scheme: second approximation - a general rural land evaluation system for New South Wales*). It should be noted that although the definitions of Land Capability Class 5 and 6 lands include land uses such as forestry and nature conservation (in addition to grazing), MACH Energy does not propose to establish forestry on the rehabilitation areas proposed for low intensity or high intensity agriculture.

**Table 4
Land Capability Classes Proposed for Low Intensity Agriculture**

Class	Definition
4	Moderate capability land: Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology.
5	Moderate–low capability land: Land has high limitations for high-impact land uses. Will largely restrict land use to grazing, some horticulture (orchards), forestry and nature conservation. The limitations need to be carefully managed to prevent long-term degradation.
6	Low capability land: Land has very high limitations for high-impact land uses. Land use restricted to low-impact land uses such as grazing, forestry and nature conservation. Careful management of limitations is required to prevent severe land and environmental degradation.

Source: OEH (2012).

Low intensity agricultural rehabilitation areas will be cultivated and broadcast sown with suitable pasture species. The species mix will be developed in consultation with an Agronomist, and depend on the

growth media available and environmental conditions at the time of rehabilitation. Species selection will aim to minimise encroachment on rehabilitation areas proposed for native ecosystem re-establishment.

Improved pasture species commonly present in the surrounding grazing areas to the MPO that will be considered for rehabilitation of low intensity agricultural areas include:

- Subterranean Clover (*Trifolium subterranean*).
- White Clover (*Trifolium repens*).
- Lucerne (*Medicago sativa*).
- Green Panic (*Panicum maximum var. trichoglume*).
- Kikuyu Grass (*Pennisetum clandestinum*).
- Perennial Ryegrass (*Lolium perenne*).
- Phalaris (*Phalaris aquatica*).
- Oat (*Avena sativa*).

Native grass species will also be considered in pasture species mixes such as Couch Grass Wallaby grasses and *Austrostipa* spp. (Spear grasses) which have been shown to develop well in post-mining landscapes of the Hunter Valley (Huxtable, Koen and Waterhouse, 2005).

Areas on the final landform likely to be lower in soil moisture (e.g. steeper terrain) will be targeted for establishment of native grasses due to their ability to withstand such conditions in comparison to introduced pasture species.

Fines Emplacement Area Rehabilitation

The overarching objective for rehabilitation of the Fines Emplacement Area is to establish a safe, stable and non-polluting landform with a sustainable surface cover that minimises erosion (to prevent exposure of the underlying fines material) and sustains grassland vegetation in the long-term.

Current rehabilitation concepts for the Fines Emplacement Area as described in the MPO EIS include capping fines with a layer of inert overburden material and then a layer of topsoil (ERM Mitchell McCotter, 1997). MACH Energy maintains capping and topsoil material proximal to the Fines Emplacement Area that would be sufficient to rehabilitate each stage of the Fines Emplacement Area. MACH Energy maintains a soil register to track soil stockpile volumes and soil usage on rehabilitation areas.

In accordance with Condition 52(c), Schedule 3 of the MPO's Development Consent DA 92/97, a Fines Emplacement Plan has been prepared and is provided in Appendix 1 of the MPO's Waste Management Plan. The Fines Emplacement Plan includes details of the Fines Emplacement Area design and fine rejects disposal strategies and operating procedures.

MACH Energy operates the Fines Emplacement Area using sub-aerial deposition which involves an extended period of air drying that maximises in-situ tailings densities and in turn maximises the storage efficiency of the facility as well as providing a more competent fines surface for future rehabilitation purposes. Other advantages of sub-aerial deposition include earlier facilitation of final rehabilitation due to a more competent fines surface and rapid recovery of water for reuse in the plant process. MACH Energy has completed construction of a permanent flocculant plant to dose secondary flocculant at the discharge point into the Fines Emplacement Area which will assist deposited fines to settle more quickly and release water to decant at a faster rate than conventional settling would allow.

As fines emplacement in the Fines Emplacement Area only commenced in late 2019, detailed rehabilitation concepts for the final landform remain in preparation. MACH Energy will continue to develop the final landform rehabilitation concepts which will be informed by the results of future tailings characterisation testwork and research project results (Section 6) and will be guided by relevant industry guidelines, including Australian National Committee on Large Dams' (2019) *Guidelines on Tailings Dams*.

MACH Energy has commissioned a Fines Emplacement Area Rehabilitation Strategy to be conducted during the MPO's 2021-2023 MOP/RMP term which will include details of the proposed capping system for the facility. Once finalised, MACH Energy would communicate the proposed Fines Emplacement Area Rehabilitation Strategy to the NSW Resources Regulator and describe the Strategy in future revisions of the MPO Rehabilitation Management Plan and this Rehabilitation Strategy.

High Intensity Agriculture

High intensity agriculture areas have been proposed as a result of consultation with MSC who has indicated its preference for post mining land uses that may provide local employment. Activities that may be classed as high intensity agriculture include, for example, feedlots, poultries or agricultural produce processing facilities, and glasshouses. Until such a time a proposal is developed for such uses, these areas would be rehabilitated to low intensity agriculture. Areas proposed for high intensity agriculture have been identified on Figure 5, and have been nominally located at this stage due to their topography and proximity to a potential water storage dam (for water supply) in the final landform.

In order to stabilise and minimise erosion from the proposed high intensity agriculture areas, the following will be undertaken:

- reconstruction of the landform as described in Section 3.1.3;
- installation of drainage, erosion and sediment control features; and
- sowing of pasture species similar to areas of low intensity agriculture to stabilise the surface.

High intensity agriculture areas will be refined in consultation with MSC throughout the life of the MPO, and will depend on such factors as commercial interest. Subject to further consultation, the MOD 4 rail loop and corridor may be maintained in the final landform as a valuable facility to support the potential high intensity agricultural activities (MACH Energy, 2017c). Any development of high intensity agriculture (and the possible retainment of the MOD 4 rail loop/corridor) will be subject to development approval, as necessary, with the relevant consent authority. If the MOD 4 rail loop/spur is not to be retained, the conveyors and rail infrastructure would be removed, the rail corridor cut and fill areas regraded and the rail corridor and rail loop will be rehabilitated.

3.4 FINAL VOIDS

The final void, lowwalls and ramps cannot be rehabilitated progressively over the mine life as they are active until the end of production and waste rock emplacement/final landform establishment. The final void will be designed to minimise its size and depth by infilling some components where mine planning allows.

The final void landform will be rehabilitated with vegetation species appropriate for the complex landform. The highwall will be rehabilitated using the best reasonable and feasible rehabilitation technologies available and revegetated with species that are appropriate for its steepness and aspect.

Design alternatives for the final void will be continually evaluated and prepared as part of the closure planning process at the MPO and will be subject to ongoing regulatory consultation. In February 2021, MACH Energy conducted a ‘think tank’ exercise involving a diverse range of professionals to discuss options for the final land use of the MPO’s final void and to identify which options merit further study.

Regardless of the final design alternative selected, the location of the final void will be outside the 100-year recurrence interval flood prone area of the Hunter River. Relevant geotechnical studies will be undertaken to assess the stability and provide guidance on measures to minimise instability. Appropriate measures will be used to limit access to steep areas around the final void to restrict cattle, pedestrian and vehicle access. These measures may include large rock placement, landform shaping, or fencing, as agreed with relevant government authorities prior to closure.

3.5 WATER QUALITY MANAGEMENT

Water runoff from the post-mining landform will either be retained on-site or will runoff/discharge to the surrounding environment. The quality of water retained on-site will be managed to be suitable for its proposed post-mining land use (e.g. low or high intensity grazing, native ecosystem). Water quality of runoff to the surrounding environment will be managed to be similar to waterways in the immediate catchment area. Measures proposed to manage water retained on-site and discharged off-site will include:

- The final landform will incorporate design features to minimise water runoff velocity and erosion potential such as micro and macro relief, a combination of convex and concave outer batters, and gentler slope gradients.
- Revegetation will be undertaken on all mine landforms in accordance with its proposed final land use.
- Erosion and sediment control structures will remain in place permanently (e.g. rock armour, drains) or until the catchment is rehabilitated and discharge water quality is similar to comparable undisturbed landforms (e.g. silt fencing, sediment dams).
- Mine water dams and sediment dams will be decontaminated prior to removal (or in the case of the Mine Water Dam potentially retained for post-mining land uses).
- Permanent water management structures will be designed and constructed, in accordance with best practice guidelines, including Landcom (2004) *Managing Urban Stormwater: Soils and Construction Volume 1, 4th Edition* (or latest version) and Department of Environment and Climate Change (2008) *Managing Urban Stormwater: Soils and Construction Volume 2* (or latest version).

Detailed management measures to ensure runoff is suitable for receiving waters and fit for aquatic ecology and riparian vegetation will be developed as part of mine closure planning and described in the MPO’s Rehabilitation Management Plan.

Hazardous and Contaminated Materials

Hazardous materials will be stored on site in accordance with the NSW *Work Health and Safety Act 2011* and supporting *Work Health and Safety Regulation 2017* and the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and the supporting *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

Procedures and controls will be used to minimise the potential for land and water contamination from the handling, storage and disposal of hazardous substances. These controls will include storage within properly sealed containers and controlled areas, and bunding areas used for medium to long-term storage requirements. Storage and waste receival areas will be isolated from clean water catchments to minimise the risk of land or water pollution should an unplanned spill occur.

The response to any accidental spills or ground contamination will be assessed on a case-by-case basis, and remediated using biodegradable spill absorbent and in accordance with any requirements of the SDS for the material. Hydrocarbon or chemical spills will be reported in the MPO incident reporting and management system with corrective and preventative measures taken as appropriate, in accordance with the MPO Pollution Incident Response Management Plan.

Hydrocarbon spills will be managed using bioremediation of the contaminated soils within the MPO bioremediation facility located adjacent the open cut pit, or taken offsite for bioremediation at an appropriate facility.

These procedures, in addition to the water quality management measures described above, aim to ensure the site is non-polluting.

MACH Energy would undertake a Land Contamination Assessment following the cessation of mining operations to determine whether potential contamination issues exist on-site and if remediation is required. Any identified contaminated soils would be excavated and disposed of at a licenced facility and the area remediated in accordance with NSW *Contaminated Land Management Act 1997* requirements. The area would then be rehabilitated consistent with the MPO's Rehabilitation Management Plan, including revegetation with relevant plant species according to the areas Secondary Domain/post-mining land use.

3.6 PUBLIC SAFETY AND SOCIAL TRANSITION

During rehabilitation phase, the MPO will continue to restrict access to the public similar to that mining operations phase. Prior to site relinquishment, a risk assessment will be undertaken to determine if there are any further controls that need to be put in place to ensure public safety. Measures may include large rock placement, landform shaping, fencing, or signage to alert the public to a potential hazard.

A socio-economic study will be commissioned five years prior to expected mine closure, which will evaluate and address the following:

- developing a contemporary baseline of the MPO workforce and community profile;
- identifying potential socio-effects (positive and negative) of the mine closure on the MPO workforce, associated workforce (subcontractors, suppliers) and the broader community;
- in consultation with stakeholders, proposing measures to minimise potential negative effects and maximise potential positive effects of mine closure; and
- developing a draft implementation programme for the measures identified to address social effects.

The findings of the socio-economic study may inform the subsequent versions of this Rehabilitation Strategy. For example, consultation undertaken to date with MSC has identified a preference for intensive agricultural/industrial post-mining land uses that provide employment for the local community. This has been taken into consideration in the final landform design and rehabilitation domains with proposed areas nominated for such land uses. If this preference changes over time, this Rehabilitation Strategy will be updated, considering the progress of final landform established and economic factors.

4 REHABILITATION SCHEDULE AND PROGRESSIVE REHABILITATION

Condition 55, Schedule 3 of Development Consent DA 92/97 requires MACH Energy to undertake progressive rehabilitation and to minimise the area of land exposed at any time. Condition 55A, Schedule 3 of Development Consent DA 92/97 requires that MACH Energy implement all reasonable and feasible measures to provide for the interim stabilisation and temporary revegetation of the existing rail loop and infrastructure corridor, as soon as reasonably practicable following its removal. Condition 54 (e), Schedule 3 of Development Consent DA 92/97 requires an indicative schedule for the staged rehabilitation of the MPO.

Section 4.1 describes progressive rehabilitation strategies proposed to be implemented across the site, and Section 4.2 describes the measures that will be implemented to provide interim stabilisation and temporary revegetation of the existing rail loop and infrastructure corridor. Section 4.3 provides an indicative schedule for rehabilitation of the MPO.

4.1 PROGRESSIVE REHABILITATION

MACH Energy will 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 on Muswellbrook and other locations to the east.

The preferential use of 10 m lifts of the emplacement landform will result in more rapid establishment of the final surface levels. Using this approach, waste rock placement progresses more rapidly than the alternative of construction in 20 m emplacement lifts. Lifts greater than 10 m may however be used on occasion, if the 10 m lifts result in material economic constraints.

MACH Energy anticipates initial rehabilitation within six months of each subsequent dump panel lift being completed (subject to delays associated with climatic extremes). Initial rehabilitation will include 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.

Initial rehabilitation may also include hydromulching and seeding (with sterile cover crops) of temporary landforms (e.g. mine access roads and construction areas etc.). Initial rehabilitation will be undertaken across the site to minimise the total area exposed at any time, in accordance with Condition 55, Schedule 3 of Development Consent DA 92/97. Initial rehabilitation will be undertaken within six months of areas being available, where areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.

4.2 REHABILITATION OF THE RAIL LOOP AND INFRASTRUCTURE CORRIDOR

Condition 37, Schedule 3 of Development Consent DA 92/97 requires MACH Energy to remove all infrastructure associated with the development within ML 1645 south of Wybong Road (other than infrastructure which can remain in situ, with the agreement of Bengalla Mine) and transfer ownership to Bengalla Mine. MACH Energy is required to perform interim rehabilitation on this area, prior to transfer of ownership, as specified within the Statement of Commitments. Following the transfer of ownership, it will be the responsibility of Bengalla Mine to operate and rehabilitate the site. For this reason, this Rehabilitation Strategy has focused on disturbance areas north of Wybong Road, except in regard to the interim rehabilitation specified below.

As soon as reasonably practicable following removal of the existing rail loop and associated infrastructure within the footprint of the Bengalla Mine, initial rehabilitation will be undertaken so the area does not pose an ongoing material source of dust emissions.

Initial rehabilitation will include levelling/reforming the infrastructure area, followed by application of a dust suppressant, if required, and sowing of a sterile cover crop vegetation and/or native grasses. The MPO rail spur erosion and sediment control water management structures (e.g. sediment fences) within the footprint of Bengalla Mine will be left in place, subject to the agreement of Bengalla Mine.

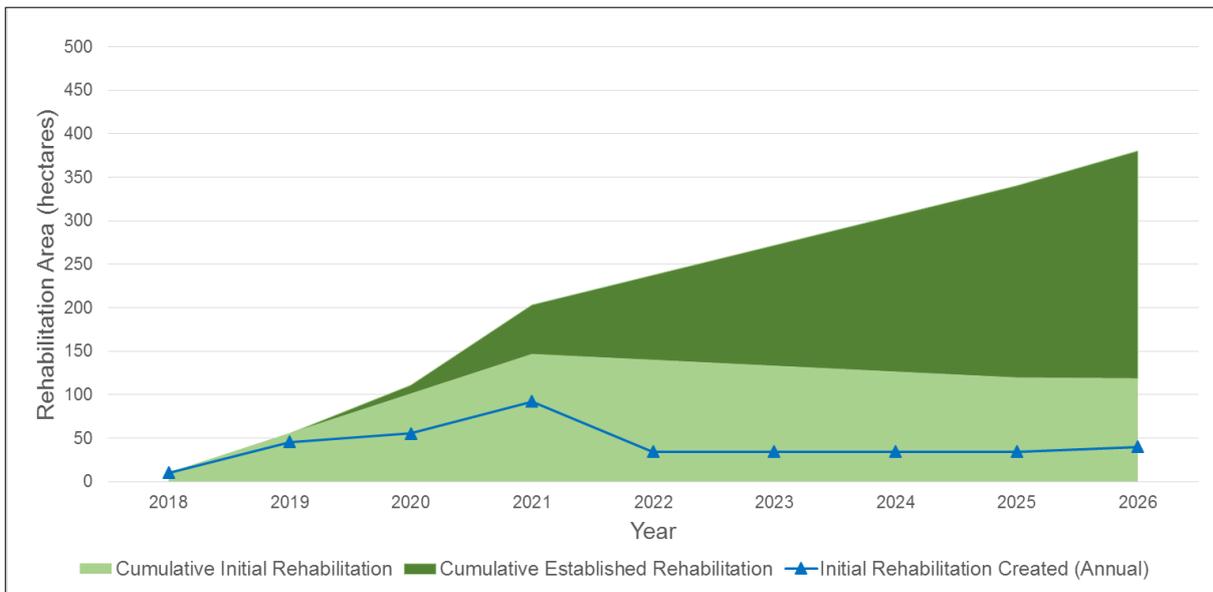
As required by Condition 37, Schedule 3 of Development Consent DA 92/97, the above decommissioning and interim rehabilitation works will be completed by 31 October 2022.

4.3 REHABILITATION PROGRESS

Chart 1 provides a preliminary estimate of the progress of both initial and established rehabilitation at the MPO.

Chart 1 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 will 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. As the MPO progresses, the rate of rehabilitation establishment will stabilise as a more steady state is achieved and mining advances at full scale behind the established South Pit Eastern Out of Pit Emplacement.

**Chart 1
Preliminary Estimate of Rehabilitation Progress**



Note: Timing subject to confirmation of mining rate and emplacement geometry as detailed in the MPO's Annual Rehabilitation Report and Forward Program and may vary due to factors outside of MACH Energy's control (e.g. climatic extremes).

The MPO's 2021-2023 MOP/RMP (and future versions of the MPO Rehabilitation Management Plan) details the rehabilitation concepts and activities that will be implemented over the MPO mine life to achieve the MPO's rehabilitation goals and completion criteria.

To track rehabilitation progress, the MPO's 2021-2023 MOP/RMP also includes quantitative values of the total disturbance area and total rehabilitation area at the start and at the end of each year of the 2021-2023 MOP/RMP term. The 2021-2023 MOP/RMP also includes supporting plans showing the progression of rehabilitation over the 2021-2023 MOP/RMP term.

Consistent with the requirements of the NSW *Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021*, MACH Energy will prepare an Annual Rehabilitation Report and Forward Program which will provide quantitative values of total disturbance and rehabilitation areas for the preceding annual reporting period and values forecast over the next three years.

5 REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE

5.1 ANNUAL REVIEW

In accordance with Condition 3, Schedule 5 of Development Consent DA 92/97, MACH Energy will prepare an Annual Review report by the end of March each year which reviews and evaluates the environmental performance of the MPO for the preceding calendar year, or other such timing as agreed by the Secretary of the DPIE.

In relation to rehabilitation, the Annual Review will:

- include a summary of rehabilitation monitoring undertaken in accordance with the MOP/RMP (now Rehabilitation Management Plan) in the past year;
- identify any rehabilitation activities undertaken over the past year;
- identify any rehabilitation related non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance; and
- describe what rehabilitation activities will be implemented over the next year to improve the environmental performance of the MPO.

The Annual Review will be made publicly available on the MACH Energy website in accordance with Condition 11, Schedule 5 of Development Consent DA 92/97.

5.2 REHABILITATION STRATEGY REVISION

In accordance with Condition 4, Schedule 5 of Development Consent DA 92/97, this Rehabilitation Strategy will be reviewed, and if necessary revised (to the satisfaction of the Secretary of the DPIE), within three months of the submission of:

- an Annual Review (Condition 3, Schedule 5 of Development Consent DA 92/97);
- an incident report (Condition 7, Schedule 5 of Development Consent DA 92/97);
- an Independent Environmental Audit (Condition 9, Schedule 5 of Development Consent DA 92/97); and
- any modification to the conditions of Development Consent DA 92/97.

Within four weeks of conducting any such revision, MACH Energy will advise the Secretary of the DPIE of the outcomes of the review, and submit any revised documents to the Secretary of the DPIE for approval.

In accordance with Condition 4A, Schedule 5 of Development Consent DA 92/97, MACH Energy may submit a revised Rehabilitation Strategy for the approval of the Secretary at any time, and may also submit any revision to this Rehabilitation Strategy required under Development Consent DA 92/97 on a staged basis.

If agreed with the Secretary of the DPIE, a revision to this Rehabilitation Strategy required under Development Consent DA 92/97 may be prepared without undertaking consultation with all parties nominated under the relevant Condition of Development Consent DA 92/97.

This Rehabilitation Strategy will be made publicly available on the MACH Energy website, in accordance with Condition 11, Schedule 5 of Development Consent DA 92/97.

6 REHABILITATION MONITORING AND RESEARCH

Monitoring of rehabilitation areas at the MPO is described in detail in the MPO's 2021-2023 MOP/RMP (and will continue to be described in future versions of the MPO Rehabilitation Management Plan). Rehabilitation monitoring will utilise the principles of a systems-based approach (e.g. Landscape Function Analysis [Tongway and Ludwig, 2011] or similar) to determine progress towards a self-sustaining ecosystem and compare the conditions of the rehabilitated areas with representative control sites. In the areas designated for native revegetation (Figures 5 and 6), Landscape Function Analysis will be supplemented with floristic monitoring and compared to vegetation benchmark completion criteria for the targeted PCTs.

Detailed performance indicators and completion criteria have been developed to assess rehabilitation success at the MPO and are provided in the MPO 2021-2023 MOP/RMP (and will continue to be provided in future versions of the MPO Rehabilitation Management Plan). The performance indicators and completion criteria set in the 2021-2023 MOP/RMP have been developed in consideration of the MOP Guidelines; the six principles of the *National standards for the practice of ecological restoration in Australia* (Society for Ecological Restoration Australasia [SERA], 2018) and include quantitative benchmark values for the relevant plant community types to be established in MPO rehabilitation areas. The benchmark values have been included in the absence of data from analogue/reference sites which are representative of the MPO rehabilitation areas. Once a data set, collected over a number of monitoring campaigns, from the relevant reference sites has been obtained, the benchmark values will be revised to reflect the local reference site data. The rehabilitation performance indicators and completion criteria included in the MPO Rehabilitation Management Plan prepared in accordance with the NSW Mining Amendment (*Standard Conditions of Mining Leases*) – *Rehabilitation Regulation 2021*, will be prepared in consideration of the NSW Resources Regulator's relevant guidelines.

Monitoring will inform the need for corrective actions/contingency measures, as described in the 2021-2023 MOP/RMP (and in future versions of the MPO Rehabilitation Management Plan). Section 9 of the MPO 2021-2023 MOP/RMP includes a Trigger Action Response Plan which includes a description of the contingency measures that would be undertaken should rehabilitation monitoring indicate that a rehabilitation area is not trending towards its relevant completion criteria, and measures that would be undertaken in response to the occurrence of risk event. The status of rehabilitation may be evaluated using recognised frameworks such as the 'Progress Evaluation Recovery Wheel' (SERA, 2018). A Trigger Action Response Plan will continue to be included in future versions of the MPO's Rehabilitation Management Plan.

As part of the rehabilitation program, MACH Energy will undertake research trials at the MPO as described in the 2021-2023 MOP/RMP (and in future versions of the MPO Rehabilitation Management Plan). These research trials will focus on research and management practices which are designed to enhance the woodland communities established across the rehabilitated landscape. MACH Energy proposes to build on industry research results to re-establish woodland in rehabilitated areas. MACH Energy will also conduct investigations (including soil testwork) to assess the characteristics of replaced soil and assess its suitability for rehabilitation of Class 4, 5 and 6 Land Capability agricultural lands, as determined by a Certified Professional Soil Scientist. The outcomes of the rehabilitation trials will be used to refine the rehabilitation program at the MPO. Refinements to the MPO rehabilitation program will be described in revised versions of the MPO Rehabilitation Management Plan which will be provided for relevant regulatory agencies and other key stakeholders for comment and subject to approval by the DPIE.

7 REFERENCES

- Australian National Committee on Large Dams (2019) *Guidelines on Tailings Dams*.
- Department of Environment and Climate Change (2008) *Managing Urban Stormwater: Soils and Construction Volume 2*.
- Department Trade and Investment Regional Infrastructure and Services – Division of Resources and Energy (2013) *ESG3: Mining Operations Plan (MOP) Guidelines*.
- EMGA Mitchell McLennan (2010) *Mount Pleasant Project Modification Environmental Assessment Report*. Prepared for Coal & Allied Operations Pty Ltd.
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ATTACHMENT 1

APPENDIX 2 OF DEVELOPMENT CONSENT DA 92/97

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 (UNAMENDED)

**DETERMINATION OF DEVELOPMENT APPLICATION
PURSUANT TO SECTION 91**

I, the Minister for Urban Affairs and Planning, pursuant to Section 101 of the unamended Environmental Planning and Assessment Act, 1979 (“the Act”), determine the development application (“the application”) referred to in Schedule 1 by granting consent to the application subject to the conditions set out in Schedule 2.

The reasons for the imposition of the conditions are to:

- (i) minimise the adverse impact the development may cause through water and air pollution, noise and visual disturbance;
- (ii) provide for environmental monitoring and reporting; and
- (iii) set requirements for infrastructure provision.

Signed

Andrew Refshauge
Minister for Urban Affairs and Planning

Sydney,

22 December

1999

File No. N95/00147

Red text represents MOD 1 dated 19 September 2011
Blue text represents MOD 2 dated 29 March 2017
Green text represents MOD 3 dated 24 August 2018
Purple text represents MOD 4 dated 16 November 2018

SCHEDULE 1

Development Application:	DA 92/97
Applicant:	MACH Energy Australia Pty Ltd
Consent Authority:	Minister for Urban Affairs and Planning
Land:	See Appendix 1
Development:	Construction and operation of the Mt Pleasant open cut coal mine and associated infrastructure

TABLE OF CONTENTS

DEFINITIONS	3
ADMINISTRATIVE CONDITIONS	5
Obligation to Minimise Harm to the Environment	5
Terms of Consent	5
Limits on Consent	5
Structural Adequacy	6
Demolition	6
Protection of Public Infrastructure	6
Operation of Plant and Equipment	6
Staged Submission of Strategies, Plans and Programs	6
Planning Agreement	6
Evidence of Consultation	6
Compliance	6
Applicability of Guidelines	6
ENVIRONMENTAL PERFORMANCE CONDITIONS	7
Acquisition Upon Request	7
Additional Noise and Dust Mitigation Upon Request	7
Noise	7
Blasting	9
Air Quality & Greenhouse Gas	11
Meteorological Monitoring	12
Soil & Water	12
Biodiversity	13
Heritage	14
Transport	15
Construction of Rail and Water Supply Infrastructure	17
Visual	19
Bushfire Management	20
Waste	20
Rehabilitation	20
ADDITIONAL PROCEDURES	23
Notification of Landowners	23
Independent Review	23
Land Acquisition	24
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING	25
Environmental Management	25
Independent Environmental Audit	27
Access to Information	28
APPENDIX 1: SCHEDULE OF LAND	29
APPENDIX 2: CONCEPTUAL PROJECT LAYOUT, APPROVED SURFACE DISTURBANCE AND CONCEPTUAL FINAL LANDFORM PLANS	35
APPENDIX 3: STATEMENT OF COMMITMENTS	39
APPENDIX 4: GENERAL TERMS FOR THE PLANNING AGREEMENT	42
APPENDIX 5: LAND OWNERSHIP, RECEIVER LOCATIONS AND NOISE ASSESSMENT GROUPS	43

DEFINITIONS

Annual review	The review required by condition 3 of Schedule 5
Applicant	MACH Energy Australia Pty Ltd, or any person/s who rely on this consent to carry out development that is subject to this consent
ARTC	Australian Rail Track Corporation
BCA	Building Code of Australia
Blast misfire	The failure of one or more holes in a blast pattern to initiate
CCC	Community Consultative Committee
CHPP	Coal Handling and Preparation Plant
Conditions of this consent	Conditions contained in Schedules 2 to 5 inclusive
Council	Muswellbrook Shire Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Decommissioning	The deconstruction or demolition and removal of works installed as part of the development
Demolition	The deconstruction and removal of buildings, sheds and other structures on the site
Department	Department of Planning and Environment
Development	The development described in the documents listed in condition 2 of Schedule 2, as modified by the conditions of this consent
DPI	Department of Primary Industries
Dol Water	Department of Industry - Water
DRG	Division of Resources and Geoscience within the Department
EA (MOD 1)	The Environmental Assessment for the Mt Pleasant Project Modification prepared by EMGA Mitchell McLennan, dated October 2010; the associated response to submissions, dated December 2010; and the addendum to the environmental assessment, dated 31 August 2011
EA (MOD 2)	The Environmental Assessment titled <i>Mount Pleasant Operation (DA 92/97) – South Pit Haul Road Modification</i> prepared by MACH Energy Australia Pty Ltd dated 30 January 2017
EA (MOD 3)	The Environmental Assessment titled <i>Mount Pleasant Operation Mine Optimisation Modification</i> prepared by MACH Energy Australia Pty Ltd, dated 31 May 2017, including the <i>Response to Submissions</i> and covering letter, dated 23 November 2017, provided by the Applicant in support of the application
EA (MOD 4)	The Environmental Assessment titled <i>Mount Pleasant Operation Rail Modification</i> prepared by MACH Energy Australia Pty Ltd, dated 18 December 2017, including the <i>Response to Submissions</i> , dated 25 June 2018 and additional information, dated 14 August 2018, 7 September 2018, and 24 September 2018, provided by the Applicant in support of the application
EIS	The Environmental Impact Statement for the Mt Pleasant Mine, prepared by ERM Mitchell McCotter and dated September 1997, as modified by the Applicant's submissions to the Commission of Inquiry into the establishment and operation of the Mt Pleasant Mine
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the POEO Act
Evening	The period from 6pm to 10pm
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
Feasible	Means what is possible and practical in the circumstances
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance
Land	In general, the definition of land is consistent with the definition in the EP&A Act. However, in relation to the noise and air quality conditions in Schedules 2-5 it means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this modification
m	Metres
Material harm	Is harm that: <ul style="list-style-type: none"> • involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or • results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment) This definition excludes “harm” that is authorised under either this consent or any other statutory approval
Mine water	Water that accumulates within, or drains from, active mining and infrastructure areas and any other areas where runoff may have come into contact with coal or carbonaceous material

Minimise	Implement all reasonable and feasible mitigation measures to reduce the impacts of the development
Mining operations	The carrying out of mining, including the extraction, processing, stockpiling and transportation of coal on the site and the associated removal, storage and/or emplacement of vegetation, topsoil, overburden and reject material
Minister	Minister for Planning, or delegate
Minor	Small in quantity, size and degree
Mitigation	Activities associated with reducing the impacts of the development
Modification 4	The modification to the development as described in EA (MOD 4)
NAG	Noise assessment group
MOD 4 rail infrastructure	The rail infrastructure as described in EA (MOD 4) and shown in Figure 2 of Appendix 2
MOD 4 water infrastructure	The water supply pipeline, pump station and ancillary infrastructure described in EA (MOD 4) and identified as “MPO Hunter River Supply Pipeline” in Figure 2 of Appendix 2
MOD 4 construction works	All physical works associated with the establishment of the rail and water infrastructure as described in EA (MOD 4)
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and public holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
OEH	Office of Environment and Heritage
Operational noise	Means noise, including construction and rail noise, generated by the development within the Mining Lease Boundary as shown in Figure 2 of Appendix 2
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Privately-owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary)
Public infrastructure	Linear and related infrastructure that provides services to the general public, such as roads, railways, water supply, gas supply, drainage, sewerage, telephony, telecommunications etc
Rail loop and infrastructure corridor	The area shaded blue in Figure 3 of Appendix 2
Registered Aboriginal Parties	As described in the <i>National Parks and Wildlife Regulation 2009</i>
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Rehabilitation	The treatment or management of land disturbed by the development for the purpose of establishing a safe, stable and non-polluting environment, and includes remediation
Relinquishment area	The area delineated as “Area Relinquished for Overburden Emplacement and Major Infrastructure” in Figure 3 of Appendix 2
Remediation	Activities associated with partially or fully repairing the impacts and/or environmental consequences of the development
ROM	Run-of-mine
RMS	Roads and Maritime Services
SANSW	Subsidence Advisory NSW
Secretary	Planning Secretary under the EP&A Act, or nominee
Site	The land listed in Appendix 1
Southern catchment	The catchment located in the south west corner of the site and identified in Figure 12 of the EIS as the active fines emplacement
Statement of commitments	The Applicant’s commitments in Appendix 3

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.

TERMS OF CONSENT

2. The Applicant must carry out the development:
 - (a) generally in accordance with the EIS, EA (MOD 1), EA (MOD 2), EA (MOD 3), EA (MOD 4) and project layout plans; and
 - (b) in accordance with the Statement of Commitments and conditions of this consent.

Notes:

- The project layout plans are shown in Appendix 2.
- The Statement of Commitments is reproduced in Appendix 3.

3. Consistent with the requirements in this consent, the Secretary may make written directions to the Applicant in relation to:
 - (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and
 - (b) the implementation of any actions or measures contained in any such document referred to in condition 3(a).
4. The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition 2(a) above. In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition 2(a) the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

LIMITS ON CONSENT

Mining Operations

5. The Applicant may carry out mining operations on the site until 22 December 2026.

Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional undertakings to the satisfaction of both the Secretary and DRG. Consequently this consent will continue to apply in all other respects - other than the right to conduct mining operations - until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.

Coal Extraction

6. The Applicant must not extract more than 10.5 million tonnes of ROM coal from the site in a calendar year.

Coal Transport

7. Product coal may only be transported from the site by rail.
8. The Applicant must ensure that train movements at the site (ie arrival or dispatch) do not exceed:
 - (a) a maximum of 18 per day; or
 - (b) 6 per day, averaged over each calendar year.

Note: In this condition, "day" means any 24-hour period.

STRUCTURAL ADEQUACY

9. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with:
 - (a) the relevant requirements of the BCA; and
 - (b) any additional requirements of SA NSW where the building or structure is located on land within a declared Mine Subsidence District.

Notes:

- Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.

- *The development is located in the Muswellbrook Mine Subsidence District. Under section 21 of the Coal Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of SA NSW's approval before carrying out certain development in a Mine Subsidence District.*

DEMOLITION

10. The Applicant **must** ensure that all demolition work on site is carried out in accordance with AS 2601-2001: *The Demolition of Structures*, or its latest version.

PROTECTION OF PUBLIC INFRASTRUCTURE

11. Unless the Applicant and the applicable authority agree otherwise, the Applicant **must**:
 - (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
 - (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development,

Note: This condition does not include matters that are expressly provided for in the conditions of this consent, such as the maintenance of public roads.

OPERATION OF PLANT AND EQUIPMENT

12. The Applicant **must** ensure that all plant and equipment used on site, or to transport coal from the site, is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

APPLICATION OF EXISTING STRATEGIES, PLANS OR PROGRAMS

13. The Applicant **must** continue to apply existing management strategies, plans or monitoring programs approved prior to the approval of Modification 4, until the approval of a similar plan, strategy or program following the approval of Modification 4.

13. Deleted

PLANNING AGREEMENT

14. By the end of March 2012, unless otherwise agreed by the **Secretary**, the Applicant **must** enter into a planning agreement with Council in accordance with:
 - (a) Division 6 of Part 4 of the EP&A Act; and
 - (b) the terms of the Applicant's offer dated 14 February 2011, which is summarised in Appendix 4.

This agreement must provide for annual payments to be made to Council with the first period for payment commencing upon the commencement of development on the site.

EVIDENCE OF CONSULTATION

15. Where conditions of this consent require consultation with an identified party, the Applicant **must**:
 - (a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and
 - (b) provide details of the consultation undertaken including:
 - (i) the outcome of that consultation, matters resolved and unresolved; and
 - (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

COMPLIANCE

16. The Applicant **must** ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

APPLICABILITY OF GUIDELINES

17. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.

However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS

ACQUISITION UPON REQUEST

- If the Applicant receives a written request for acquisition from the owner of any land listed in Table 1, then the Applicant must acquire the land in accordance with the procedures in conditions 6-7 of Schedule 4.

Table 1: Land subject to acquisition upon request

Basis	Receiver
Noise	23, 45, 47, 67, 96, 102, 108, 112, 118, 120, 120c, 121, 136, 143a, 143b, 143c, 143d, 143e, 147, 153a, 153b, 156a, 157a, 158, 159, 447, 448, 449
Noise & Air	43, 43b
Air	20 ² , 21 ²

Notes:

- To identify the locations referred to in Table 1, see the figures in Appendix 5.
- The Applicant is only required to acquire and/or install mitigation measures at this property if acquisition and/or mitigation is not reasonably achievable under a separate approval for the Bengalla mine.

ADDITIONAL MITIGATION UPON REQUEST

- Upon receiving a written request from the owner of any residence on any land listed in Table 1 (unless the owner of that land has requested acquisition) or Table 2, the Applicant must implement additional:
 - noise mitigation measures (such as double-glazing, insulation and/or air conditioning); and/or
 - air quality mitigation measures (such as air filters, a first flush roof water drainage system and/or air conditioning),
 as relevant, at the residence(s) in consultation with the owner.

These measures must be reasonable and feasible, and directed towards reducing the noise and/or air quality impacts of the development on the residence(s). The Applicant must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations.

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

Table 2: Land where additional mitigation measures are available on request

Basis	Receiver
Noise	19, 20, 21, 68, 74, 77, 79, 80a, 84a, 86a, 139, 140a, 140c, 154, 203, 207, 257, 258, 259, 526

Note:

- To identify the locations referred to in Table 2, see the figures in Appendix 5.

NOISE

Noise Criteria

- Except for the noise-affected land referred to in Table 1, the Applicant must ensure that the operational noise generated by the development does not exceed the criteria in Table 3 at any residence on privately-owned land.

Table 3: Noise criteria dB(A)

Receiver or other location	Day	Evening	Night	
	L_{Aeq}(15min)	L_{Aeq}(15min)	L_{Aeq}(15min)	L_{A1}(1min)
68, 74	43	42	42	45
86a	42	42	42	45
35, 35b, 77	42	41	41	45
79, 80a, 140c, 526	41	41	41	45
289	41	40	40	45
84a, 139, 154, 203, 257, 258a	40	40	40	45
83	40	39	39	45
86b, 140a, 202, 259	39	39	39	45

198, 202b	38	38	38	45
260, 261	37	37	37	45
169, 272	36	36	36	45
NAG 5 - All privately-owned land	41	40	39	45
NAG 6 - All privately-owned land	37	37	37	45
NAG 7 - All privately-owned land	40	37	37	45
NAG 8 - All privately-owned land	41	39	39	45
NAG 9 - All privately-owned land	39	38	37	45
NAG 11 - All privately-owned land	37	36	35	45
All other privately-owned land	35	35	35	45

Notes:

- To identify the locations referred to in Table 3, see the figures in Appendix 5.
- Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy, with the exception of the application of modifying factors under Fact Sheet C of the Noise Policy for Industry.

However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

4. Deleted

Cumulative Noise Criteria

5. Except for the noise-affected land referred to in Table 1, the Applicant must implement all reasonable and feasible measures to ensure that the operational noise generated by the development combined with the noise generated by other mines in the area does not exceed the criteria in Table 5 at any residence on privately-owned land.

Table 5: Cumulative noise criteria dB(A) L_{Aeq} (period)

Location	Day	Evening	Night
NAG 8, 9	55	45	40
All other privately-owned land	50	45	40

Notes:

- To identify the locations referred to in Table 5, see the figures in Appendix 5; and
- Cumulative noise is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

6. Deleted

Rail Noise

7. The Applicant must only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in Sydney Trains' EPL (No. 12208) and ARTC's EPL (No. 3142).

Noise Operating Conditions

8. The Applicant must:
- implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the construction, operational, low frequency, and rail noise generated by the development;
 - minimise the noise impacts of the development during temperature inversions;
 - regularly assess the real-time noise monitoring and meteorological forecasting data and relocate, modify, and/or stop operations on site to ensure compliance with the relevant conditions of this consent; and
 - co-ordinate the noise management on site with the noise management at nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines, to the satisfaction of the Secretary.

Note: Monitoring under this consent is not required at all residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.

Noise Management Plan

9. The Applicant **must** prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary;
 - describe the measures (including both proactive and reactive mitigation measures) to be implemented to:
 - ensure compliance with the noise criteria and operating conditions in this consent;
 - minimise rail noise (including wheel and brake squeal) to the greatest extent practicable; and
 - minimise the noise impacts of the development during noise-enhancing meteorological conditions when the operational noise criteria in this consent do not apply (see Notes to condition 3 of Schedule 3);
 - include a noise monitoring program that:
 - uses a combination of real-time and supplementary attended monitoring to evaluate the performance of the development;
 - accounts for the occurrence of any noise enhancement between the site, and any sensitive receivers located beyond the site boundary; and
 - includes a protocol for determining exceedances of the relevant conditions of this consent.
 - include a protocol that has been prepared in consultation with the owners of the nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines.

The Applicant must implement the management plan as approved by the Secretary.

BLASTING

Blasting Criteria

10. The Applicant **must** ensure that the blasting on the site does not cause exceedances of the criteria in Table 7.

Table 7: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
Historic heritage sites	-	10	0%
All public infrastructure	-	50	0%

However, these criteria do not apply if the Applicant has a written agreement with the relevant owner or infrastructure provider/owner, and the Applicant has advised the Department in writing of the terms of this agreement.

Blasting Hours

11. The Applicant **must** only carry out blasting on site between 9am and 5pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.

Blasting Frequency

12. Unless otherwise agreed by the Secretary, the Applicant may carry out a maximum of:
- 1 blast a day; and
 - 5 blasts a week, averaged over any calendar year; for the development.

This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, or to blasts required to ensure the safety of the mine or its workers.

Note: For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.

Property Inspections

13. If the Applicant receives a written request from the owner of any privately-owned land within 2 kilometres of the approved open cut mining pit/s on site, for a property inspection to establish the

baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection report updated, then within 2 months of receiving this request the Applicant **must**:

- (c) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to:
 - establish the baseline condition of the buildings and/or structures on the land, or update the previous property inspection report;
 - identify any measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and/or structures; and
- (d) give the landowner a copy of the new or updated property inspection report.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.

Property Investigations

14. If the owner of any privately-owned land claims that the buildings and/or structures on his/her land have been damaged as a result of blasting on site, then within 2 months of receiving this claim the Applicant **must**:
 - (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to investigate the claim; and
 - (b) give the landowner a copy of the property investigation report.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property investigation report, either party may refer the matter to the Secretary for resolution.

If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant **must** repair the damages to the satisfaction of the Secretary.

If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.

Blast Operating Conditions

15. The Applicant **must**:
 - (a) implement best blasting management practice on site to:
 - protect the safety of people and livestock in the surrounding area;
 - protect public or private infrastructure/property in the surrounding area;
 - minimise the dust and fume emissions of the blasting on site; and
 - minimise blasting impacts on heritage items in the vicinity of the site;
 - (b) co-ordinate the blasting on site with the blasting at nearby mines (including the Bengalla mine) to minimise the cumulative blasting impacts of the mines; and
 - (c) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site, to the satisfaction of the Secretary.
16. The Applicant **must** not undertake blasting within 500 metres of:
 - (a) a public road without the approval of Council; and
 - (b) any land outside the site not owned by the Applicant, unless:
 - the Applicant has a written agreement with the relevant landowner to allow blasting to be carried out closer to the land, and the Applicant has advised the Department in writing of the terms of this agreement, or
 - the Applicant has:
 - demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the land without compromising the safety of the people or livestock on the land, or damaging the buildings and/or structures on the land; and
 - updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land.

Blast Management Plan

17. The Applicant **must** prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan **must**:
 - (a) be submitted to the Secretary for approval prior to carrying out any blasting on site;
 - (b) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent;
 - (c) include a road closure management plan, prepared in consultation with Council;
 - (d) include a blast monitoring program for evaluating compliance with the relevant conditions of approval; and

- (e) include a protocol that has been prepared in consultation with the owners of nearby mines (including the Bengalla mine) for minimising and managing cumulative blasting impacts of the mines.

The Applicant must implement the management plan as approved by the Secretary.

AIR QUALITY & GREENHOUSE GAS

Odour

18. The Applicant must ensure that no offensive odours are emitted from the site, as defined under the POEO Act, unless otherwise authorised by an EPL.

Greenhouse Gas Emissions

19. The Applicant must implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.

Air Quality Criteria

20. Except for the air quality-affected land referred to in Table 1, the Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not exceed the criteria listed in Tables 8, 9 or 10 at any residence on privately-owned land.

Table 8: Long term criteria for particulate matter

Pollutant	Averaging Period	^d Criterion
Total suspended particulate (TSP) matter	Annual	^a 90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	^a 25 µg/m ³
Particulate matter < 2.5 µm (PM _{2.5})	Annual	^a 8 µg/m ³

Table 9: Short term criteria for particulate matter

Pollutant	Averaging Period	^d Criterion
Particulate matter < 10 µm (PM ₁₀)	24 hour	^b 50 µg/m ³
Particulate matter < 2.5 µm (PM _{2.5})	24 hour	^b 25 µg/m ³

Table 10: Long term criteria for deposited dust

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month

Notes to Tables 8-10:

^a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);

^b Incremental impact (i.e. incremental increase in concentrations due to the development on its own);

^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and

^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.

21. Deleted

Air Quality Operating Conditions

22. The Applicant must:
- implement best practice air quality management, including all reasonable and feasible measures to minimise the odour, fume and dust emissions of the development;
 - minimise visible air pollution generated by the development;
 - minimise, where reasonable and feasible, the extent of potential dust generating surfaces exposed on the site at any given point in time;
 - minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note d above under Tables 8-10);
 - regularly assess the real-time air quality monitoring and meteorological forecasting data and relocate, modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent; and

- (f) co-ordinate the air quality management on site with the air quality management at nearby mines (including the Bengalla mine) to minimise cumulative air quality impacts from the mines, to the satisfaction of the Secretary.

Air Quality and Greenhouse Gas Management Plan

23. The Applicant must prepare an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be submitted to the Secretary for approval prior to carrying out any development on site;
 - describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, including a real-time air quality management system that employs reactive and proactive mitigation measures;
 - include an air quality monitoring program that:
 - uses a combination of real-time monitors and supplementary monitors to evaluate the performance of the development;
 - includes PM_{2.5} monitoring (although this obligation could be satisfied by the regional air quality monitoring network if sufficient justification is provided);
 - includes a protocol for determining exceedances of the relevant conditions of this consent; and
 - include a protocol that has been prepared in consultation with the owners of nearby mines to minimise the cumulative air quality impacts of the mines.

The Applicant must implement the management plan as approved by the Secretary.

METEOROLOGICAL MONITORING

24. For the life of the development, the Applicant must ensure that there is a meteorological station operating in the vicinity of the site that:
- complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in NSW* guideline; and
 - is capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy*, or as otherwise approved by the Secretary.

SOIL & WATER

Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain water licences for the development.

Water Supply

25. The Applicant must ensure that it has sufficient water for all stages of development, and if necessary, adjust the scale of mining operations on site, to match its available water supply to the satisfaction of the Secretary.

Water Discharges

26. The Applicant must ensure that any surface water discharges from the site comply with the:
- discharge limits (both volume and quality) set for the development in any EPL; or
 - relevant provisions of the POEO Act or *Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002*.

Compensatory Water Supply

27. The Applicant must provide compensatory water supply to any landowner of privately-owned land whose water entitlements are adversely and directly impacted (other than an impact that is negligible) as a result of the development, in consultation with DoI Water, and to the satisfaction of the Secretary.

The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributed to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner.

If the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

If the Applicant is unable to provide an alternative long-term supply of water, then the Applicant must provide alternative compensation to the satisfaction of the Secretary.

Water Management Plan

28. The Applicant must prepare a Water Management Plan for the development to the satisfaction of the

Secretary. This plan must be prepared in consultation with DoI Water and EPA, and be submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary. The plan must include:

- (a) a Site Water Balance, which must:
 - include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site;
 - any off-site water transfers; and
 - investigate and implement all reasonable and feasible measures to minimise water use by the development;
- (b) an Erosion and Sediment Control Plan, which must:
 - identify activities that could cause soil erosion, generate sediment or affect flooding;
 - describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage any flood risk;
 - describe the location, function, and capacity of erosion and sediment control structures;
 - describe what measures would be implemented to maintain the structures over time;
- (c) a Surface Water Management Plan, which must include:
 - detailed baseline data on surface water flows and quality in creeks and other waterbodies that could potentially be affected by the development;
 - surface water and stream health impact assessment criteria including trigger levels for investigating any potentially adverse surface water impacts;
 - a program to monitor and maintain the bridge openings and culverts associated with the MOD 4 rail infrastructure and ensure that they remain clear of blockages;
 - a program to monitor surface water flows and quality in the watercourses that could be affected by the project; and
 - reporting procedures for the results of the monitoring program;
- (d) a Groundwater Management Plan, which must include:
 - detailed plans, including design objectives and performance criteria, for the design and management of the proposed final voids;
 - detailed baseline data of groundwater levels, yield and quality in the region, and privately-owned groundwater bores, that could be affected by the development;
 - groundwater impact assessment criteria including trigger levels for investigating any potentially adverse groundwater impacts;
 - a program to monitor and assess:
 - groundwater inflows to the mining operations;
 - impacts on regional and local (including alluvial) aquifers;
 - impacts on the groundwater supply of potentially affected landowners;
 - impacts on groundwater dependent ecosystems and riparian vegetation;
- (e) a Surface and Ground Water Response Plan, which must include:
 - a response protocol for any exceedances of the surface water and groundwater assessment criteria;
 - measures to offset the loss of any baseflow to watercourses caused by the development;
 - measures to prevent, minimise or offset groundwater leakage from alluvial aquifers caused by the development;
 - measures to compensate landowners of privately-owned land whose water supply is adversely affected by the development; and
 - measures to mitigate and/or offset any adverse impacts on groundwater dependent ecosystems or riparian vegetation.

The Applicant must implement the management plan as approved by the Secretary.

- 28A. The Applicant must decommission the existing water supply infrastructure within the rail loop and infrastructure corridor, including the associated pump station, within 6 months of the commissioning of the MOD 4 water infrastructure.

Notes:

- The existing rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2.
- The decommissioning of infrastructure within the rail loop and infrastructure corridor is also controlled under condition 37 of Schedule 3.

- 28B. The Applicant must notify DoI Water, in writing, within 14 days of completing the following:
- (a) the decommissioning of the MOD 4 water infrastructure; and
 - (b) the decommissioning of existing water supply infrastructure within the rail loop and infrastructure corridor.

BIODIVERSITY

29. Deleted

30. Deleted

31. Deleted

Biodiversity Management Plan

32. The Applicant **must** prepare a Biodiversity Management Plan for the development to the satisfaction of the **Secretary**. This plan must:
- (a) be prepared in consultation with OEH and Council, and be submitted to the **Secretary** for approval by 30 June 2019, unless otherwise agreed by the **Secretary**;
 - (b) include:
 - a description of the short, medium, and long term measures that would be implemented to:
 - manage the remnant vegetation and habitat on the site; and
 - **avoid and manage remnant vegetation and habitat within the relinquishment area**;
 - a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:
 - implementing revegetation and regeneration within the disturbance areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata;
 - maximising salvage and beneficial use of resources in areas that are to be impacted, including vegetative, soil and cultural heritage resources;
 - protecting vegetation and soil outside the disturbance areas;
 - rehabilitating creeks and drainage lines on the site, to minimise net loss of stream length and aquatic habitat;
 - managing salinity;
 - conserving and reusing topsoil;
 - undertaking pre-clearance surveys;
 - managing impacts on fauna;
 - landscaping the site and along public roads to minimise visual and lighting impacts;
 - collecting and propagating seed;
 - salvaging and reusing material from the site for habitat enhancement;
 - salvaging, transplanting and/or propagating threatened flora and native grassland;
 - controlling weeds and feral pests;
 - managing grazing and agriculture on site;
 - controlling access; and
 - bushfire management;
 - a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;
 - a description of the potential risks to successful revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
 - details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Applicant **must** implement the management plan as approved by the **Secretary**.

HERITAGE

Note: Under the National Parks and Wildlife Act 1974 or the Heritage Act 1977, the Applicant is required to obtain approvals for any impacts to Aboriginal objects and/or significant relics.

Aboriginal Heritage Conservation Strategy

33. The Applicant **must** prepare an Aboriginal Heritage Conservation Strategy for the development to the satisfaction of the **Secretary**. This strategy must:
- (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the **Secretary**;
 - (b) be prepared in consultation with OEH and the **Registered Aboriginal Parties**;
 - (c) be submitted to the **Secretary** for approval prior to carrying out any development on site;
 - (d) provide for the establishment and conservation of an off-site Aboriginal cultural heritage conservation area/s that has comparable Aboriginal cultural heritage values (both cultural and archaeological) to the areas that would be developed on site;
 - (e) describe the measures that would be implemented to provide appropriate long term security for the proposed Aboriginal cultural heritage conservation areas; and
 - (f) include an action plan for the implementation of the strategy.

The detailed measures for the implementation of the strategy are to be outlined in the Heritage Management Plan (see condition 36).

The Applicant **must** implement the approved strategy as approved from time to time by the **Secretary**.

Note: The Aboriginal cultural heritage conservation area/s may be combined with any similar offset/conservation area required for the development under Commonwealth legislation, subject to suitably offsetting the cultural heritage impacts of the development.

34. Within 2 years of the approval of the Aboriginal Heritage Conservation Strategy, the Applicant **must** demonstrate to the satisfaction of the **Secretary**, that it has made suitable arrangements to provide appropriate long term security for the Aboriginal cultural heritage conservation area/s in the Aboriginal Heritage Conservation Strategy.

Oral History

35. By the end of December 2013, the Applicant **must** prepare a detailed history of the Mount Pleasant locality to the satisfaction of the **Secretary**. This history must:
- be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the **Secretary**;
 - be prepared in consultation with the OEH, the local history society, local community (including former residents as far as is practicable), and **Registered Aboriginal Parties**;
 - be prepared in accordance with the relevant Heritage Council of NSW guidelines; and
 - include detailed historical research as well as an oral history.

Aboriginal Heritage Management Plan

36. The Applicant **must** prepare a Aboriginal Heritage Management Plan for the development to the satisfaction of the **Secretary**. This plan must:
- be prepared in consultation with OEH and the **Registered Aboriginal Parties** by suitably qualified and experienced persons whose appointment has been endorsed by the **Secretary**;
 - be submitted to the **Secretary** for approval by 30 June 2019, unless otherwise agreed by the **Secretary**;
 - include:
 - a detailed plan for the implementation of the approved Aboriginal Heritage Conservation Strategy (required under condition 34);
 - a description of the measures that would be implemented to:
 - comply with the requirements of any Aboriginal Heritage Impact Permit issued for the development, including any approved archaeological testing and salvage program;
 - store the Aboriginal objects salvaged, both during construction and in the long term;
 - protect, monitor and/or manage all Aboriginal objects on site until the impacts of the development on these objects is unavoidable;
 - minimise the blasting impacts of the development on Aboriginal objects in the vicinity of the site;
 - manage the discovery of any human remains or previously unidentified Aboriginal objects on site;
 - enable **Registered Aboriginal Parties** to get reasonable access to the site during the development;
 - ensure **Registered Aboriginal Parties** are consulted about the conservation and management of Aboriginal cultural heritage on site; and
 - ensure construction personnel receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions.

The Applicant **must** implement the management plan as approved by the **Secretary**.

Notes:

- The Aboriginal Heritage Management Plan must be consistent with the requirements of any Aboriginal Heritage Impact Permit(s) issued by OEH relevant to the development.*
- The Applicant must ensure that Aboriginal site recording forms for newly recorded sites and Aboriginal site impact recording forms for salvaged sites are submitted to OEH for inclusion on the Aboriginal Heritage Information Management System database.*

TRANSPORT

Removal of Rail Loop and Infrastructure Corridor

37. The Applicant **must**, by no later than 31 October 2022:
- remove all infrastructure associated with the development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla mine agrees with the Applicant, in writing, can remain in situ);
 - do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine or its nominee;
 - transfer the freehold land owned by the Applicant within ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee) at rural market value;

- (d) release any easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by the Applicant; and
- (e) demolish the Bengalla Link Road bridge required under condition 38 (a) below and, unless otherwise agreed by the Secretary, reinstate the road reserve to the satisfaction of Council.

Note: The rail loop and infrastructure corridor is shown in Figure 3 of Appendix 2.

Road Works

Note: Under the Roads Act 1993, the Applicant is required to obtain the consent of the appropriate roads authority prior to carrying out work on or over a public road.

38. The Applicant **must**, at its own expense:
- (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;
 - (b) construct the Mount Pleasant Northern Link Road to Dorset Road, prior to the closure of Castlerock Road;
 - (c) construct the Mount Pleasant Western Link Road (generally in accordance with Council's Western Roads Strategy) from the intersection of the Bengalla Link Road to the intersection of the Mount Pleasant Northern Link Road, prior to the closure of Wybong Road;
 - (d) construct the Mount Pleasant Mine Access Road;
 - (e) upgrade the Wybong Road from the Bengalla Link Road to the Mount Pleasant Mine Access Road; and
 - (f) construct an overpass or underpass across Wybong Road, or other means of crossing Wybong Road, should a construction road be proposed, to the satisfaction of Council.
39. Should the following intersections be required, the Applicant **must** undertake construction works at:
- (a) the intersection of the Western Link Road and access to the mine site;
 - (b) the intersection of the Bengalla Link Road and the Western Link Road;
 - (c) the intersection of the Castlerock/Mount Pleasant Northern Link Road and the Western Link Road; and
 - (d) the intersection of the Mount Pleasant Northern Link Road and Kayuga Road, to the satisfaction of Council and/or RMS.

If there is any dispute between the Applicant and Council or RMS in relation to the funding or upgrade works, then any of the parties may refer the matter to the Secretary for resolution.

- 39A. The Applicant **must**, by no later than 31 October 2022:
- (a) construct a rail overpass to carry the MOD 4 rail infrastructure over Wybong Road;
 - (b) construct a road bridge to carry Overton Road over the MOD 4 rail infrastructure; and
 - (c) partially realign Overton Road, as shown conceptually in Figure 5 of EA (MOD 4), in accordance with the relevant requirements of *Austrroads Guide to Road Design* and to the satisfaction of Council.

The Secretary may waive or alter the above requirements if they are no longer required following the completion of the final design of the MOD 4 rail infrastructure.

40. The Applicant **must**:
- (a) prepare a detailed schedule outlining the timing of the road works required by conditions 38, 39 and 39A by the end of June 2018; and
 - (b) update this schedule annually, to the satisfaction of Council.

Road Maintenance

41. During the development, the Applicant **must** maintain the roads and intersections between the Bengalla Mine main entrance and the Mt Pleasant Mine main entrance, including:
- (a) part of the Bengalla Link Road;
 - (b) part of the Wybong Road; and
 - (c) part of the Mount Pleasant Western Link Road.

The Applicant **must** develop a Maintenance Management Plan in respect of these roads, to the satisfaction of Council.

Thomas Mitchell Drive

- 41A. The Applicant **must** contribute to the upgrade and maintenance of Thomas Mitchell Drive, proportionate to its impact (based on usage) on that infrastructure, in accordance with the Contributions Study prepared by GHD titled, *"Thomas Mitchell Drive Contributions Study, May 2015"* as amended by the supplementary report dated, August 2018 (as amended from time to time), unless otherwise agreed with the Secretary.

For Thomas Mitchell Drive, the contributions must be paid to Council in accordance with:

- (a) the payment schedule in the Contributions Study for the upgrade works; and
- (b) the maintenance schedule established in accordance with the Contributions Study during the life of the development,

unless otherwise agreed with Council.

Notes:

- In making a determination about the applicable contribution/s under this condition, the Secretary will take into account the contributions already paid or required to be paid towards the upgrade and maintenance of the local road network in the Muswellbrook Local Government Area under this consent and any associated Planning Agreement with Council.
- If there is a dispute between the relevant parties about the implementation of this condition, then any party may refer the matter to the Secretary for resolution.

Road Access and Signage

- 42. The Applicant **must** ensure that as far as possible the preferred mine access road route, as described in the EIS, is the only route used by employees and contractors travelling to the mine site from Muswellbrook.
- 43. The Applicant **must** maintain signs and give at least 24 hours notice of temporary road closures. The location and wording of the signs are to be approved by Council. A protocol is to be established, in consultation with the emergency service providers and Council, to permit the passage of emergency vehicles during road closures.

Monitoring of Coal Transport

- 44. The Applicant **must**:
 - (a) keep records of the:
 - amount of coal transported from the site (on a monthly basis); and
 - date and time of each train movement generated by the development; and
 - (b) make these records available on its website at the end of each calendar year.

CONSTRUCTION OF RAIL AND WATER SUPPLY INFRASTRUCTURE

- 44A. The Applicant **must** carry out a detailed geotechnical investigation of former underground mine workings in the vicinity of the MOD 4 rail infrastructure. This investigation **must**:
 - (a) be undertaken by suitably qualified and experienced persons;
 - (b) be undertaken in consultation with SA NSW;
 - (c) determine the extent of underground mine workings;
 - (d) provide recommendations to ensure the geotechnical stability of MOD 4 rail infrastructure; and
 - (e) be conducted and reported to the satisfaction of the Secretary.

A final report detailing the outcomes of the geotechnical investigation **must** be submitted to the Secretary. The Applicant **must** not commence MOD 4 construction works in the vicinity of the former underground mine until the Geotechnical Investigation Report is approved by the Secretary.

- 44B. The Applicant **must** implement the recommendations of the Geotechnical Investigation Report to the satisfaction of the Secretary.
- 44C. The Applicant **must** design and construct the MOD 4 rail infrastructure to meet the following performance criteria during a 1% Annual Exceedance Probability flood event:
 - (a) no more than 0.1 m increase in flood levels on any privately-owned land;
 - (b) no more than 0.01 m increase in flood levels at any privately-owned residence or commercial spaces;
 - (c) no more than 0.01 m increase in flood levels at any public roads servicing privately-owned properties; and
 - (d) no more than 0.1 m per second increase in flood velocities at privately-owned residences or commercial spaces.
- 44D. The Applicant **must** commission an independent review of the final design of the MOD 4 rail infrastructure, including any associated hydraulic structures. This review **must**:
 - (a) be undertaken by suitably qualified and experienced persons;
 - (b) be undertaken in consultation with OEH;
 - (c) demonstrate that the final design meets the performance criteria in condition 44C above;
 - (d) be conducted and reported to the satisfaction of the Secretary.

A final report detailing the outcomes of the independent review **must** be submitted to the Secretary. The Applicant **must** not commence MOD 4 construction works until the final report is approved by the Secretary.

- 44E. The Applicant must ensure that any asbestos encountered during MOD 4 construction works is monitored, handled, transported and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including:
- Work Health and Safety Regulation 2017*;
 - SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace September 2016;
 - SafeWork NSW Code of Practice – How to Safely Remove Asbestos September 2016;
 - Protection of the Environment Operations (Waste) Regulation 2014*; and
 - the EPA’s *Waste Classification Guidelines*.

- 44F. All MOD 4 construction works outside of the Mining Lease Boundary must be carried out during Standard Construction Hours (7 am to 6 pm, Monday to Friday; and 8 am to 1 pm on Saturdays), unless the works are:
- required by:
 - NSW Police; or
 - a public authority for the delivery of vehicles, plant or materials; or
 - required in an emergency to avoid the loss of life, damage to property or to prevent material harm to the environment; or
 - approved under an Out of Hours Work Protocol.

Note: The Mining Lease Boundary is shown in Figure 2 of Appendix 2.

- 44G. If the Applicant proposes to undertake MOD 4 construction works (outside of the Mining Lease Boundary) outside the hours specified in condition 44F above, then the Applicant must prepare an Out of Hours Work Protocol for these works, to the satisfaction of the Secretary. This protocol must:
- be prepared in consultation with the EPA and any residents who may be affected by the noise generated by these works;
 - address the relevant requirements of the *Interim Construction Noise Guideline* (DECC, 2009); and
 - be approved by the Secretary before any out of hours construction works are carried out.

The Applicant must implement the Out of Hours Work Protocol as approved by the Secretary.

Note: For areas where construction noise is predicted to be at or below operational noise criteria at sensitive receptors, this is likely to provide sufficient justification for the need to operate outside of recommended standard hours as specified in the Interim Construction Noise Guideline (DECC, 2009).

- 44H. The Applicant must ensure that the combined operational noise of the development and noise generated by the MOD 4 construction works outside of the Mining Lease Boundary does not exceed the criteria in Table 10A at any residence on privately-owned land.

Table 10A: Construction noise criteria

Receiver or other location	Standard Construction Hours dB(A) LAeq(15min)
67, 215, 216, 218, 219	47
206, 217, 220, 221, 225, 532, 533	48
222, 223, 531	49
224, 530	50
19, 20, 21, 207, 289	51
527, 528	56
529	54
68	57
23	69
All other privately-owned land	5 dB(A) above the daytime operational LAeq(15min) noise criteria in Table 3

Notes:

- To identify the locations referred to in Table 10A, see the figures in Appendix 5.
- The Mining Lease Boundary is shown in Figure 2 of Appendix 2.
- Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy, with the exception of the application of modifying factors under Fact Sheet C of the Noise Policy for Industry.

However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

44. The Applicant must prepare a Construction Environmental Management Plan for MOD 4 construction works, to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the EPA, Council and any relevant road or utilities authorities;
 - describe measures to be implemented to minimise construction-related noise, vibration, dust, biodiversity and visual impacts, including specific measures to minimise:
 - surface disturbance; and
 - the cumulative impacts of construction and operational noise;
 - describe detailed procedures to be implemented to:
 - notify affected landowners of upcoming construction activities;
 - receive, record, handle and respond to construction-related complaints; and
 - resolve any disputes that may arise during MOD 4 construction works;
 - include a Construction Traffic Management Plan which:
 - describes the measures to be implemented to minimise traffic safety issues and disruption to local road users, including managing light, heavy and over-dimensional vehicles during construction works; and
 - includes procedures for notifying other road users (including local bus operators) of any construction works that may disrupt their usual use of the road; and
 - include a Historic Heritage Management Plan which describes measures to implement the relevant historic heritage management commitments outlined in Appendix 3; and
 - include an Unexpected Contamination Protocol which describes the procedures to be implemented in the event that potentially contaminated material is identified during construction, including:
 - procedures for testing, removal and disposal of potentially contaminated material; and
 - measures to ensure compliance with the requirements of SafeWork NSW and relevant guidelines.

The Applicant must not commence MOD 4 construction works until the Construction Environmental Management Plan is approved by the Secretary. The Applicant must implement the Construction Environmental Management Plan as approved by the Secretary.

VISUAL

Visual Amenity and Lighting

45. The Applicant must:
- implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development;
 - ensure no outdoor lights shine above the horizontal; and
 - ensure that all external lighting associated with the development complies with *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting* or its latest version,
- to the satisfaction of the Secretary.

Additional Visual Mitigation Measures

46. Upon receiving a written request from the owner of any residence on privately-owned land which has, or would have, significant direct view of the mining operations on site, the Applicant must implement visual mitigation measures (such as landscaping treatments or vegetation screens) on the land in consultation with the landowner. These measures must be reasonable and feasible, and directed toward minimising the visibility of the mining operations from the residence.

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

Note: Except in exceptional circumstances, the Secretary will not require additional visual impact mitigation to be undertaken for residences that are more than 3 kilometres from the mining operations.

Visual Impact Management Plan

47. The Applicant must prepare a Visual Impact Management Plan to mitigate the visual impacts of the development to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with Council, and submitted to the Secretary for approval by 30 June 2019, unless otherwise agreed by the Secretary;
 - provide for the establishment of trees and shrubs and/or the construction of mounding or bunding:
 - along the access road to the mine site;
 - around the water storage dams and coal preparation plant;
 - at other areas identified as necessary for the maintenance of satisfactory visual amenity;
 - include details of the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications), aimed at blending as far as possible with the surrounding landscape; and

- (d) include detailed measures to minimise the visual impacts of the MOD 4 rail infrastructure, including:
- details regarding any proposed light screens, earth bunds and screen planting; and
 - procedures to monitor and maintain the effectiveness of visual impact mitigation measures for the life of the development.

The Applicant must implement the management plan as approved by the Secretary.

BUSHFIRE MANAGEMENT

48. The Applicant must:
- (a) ensure that the development is suitably equipped to respond to any fires on site; and
 - (b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.

WASTE

Waste Minimisation & Disposal

49. The Applicant must:
- (a) minimise the waste (including coal reject) generated by the development;
 - (b) ensure that the waste generated by the development is appropriately stored, handled and disposed of in a lawful manner.

On-site Sewage

50. The Applicant must ensure that all sewage generated on site is treated and disposed of to the satisfaction of Council.

Disposal of Fine Rejects

51. The Applicant must not emplace fine rejects in the southern catchment without the written approval of the Secretary

Waste Management Plan

52. The Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with DoI Water and DRG, and submitted to the Secretary for approval prior to carrying any development on site;
 - (b) describe the measures that would be implemented to avoid, minimise, reuse and recycle all waste streams generated by the development;
 - (c) include a fines emplacement plan; and
 - (d) a program to evaluate the fines emplacement plan and methods, with a view to emplacing fines within active mining areas.

The Applicant must implement the management plan as approved by the Secretary.

REHABILITATION

Rehabilitation Objectives

53. The Applicant must rehabilitate the site to the satisfaction of DRG. This rehabilitation must be generally consistent with the conceptual final landform depicted in Figure 4 in Appendix 2, and comply with the objectives in Table 11.

Table 11: Rehabilitation Objectives

Feature	Objective
All areas of the site affected by the development	<ul style="list-style-type: none"> • Safe, stable & non-polluting • Fit for the intended post-mining land use/s
Areas proposed for native ecosystem re-establishment	<ul style="list-style-type: none"> • Restore self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area, as shown conceptually in Figure 4 in Appendix 2. • Establish areas of self-sustaining: <ul style="list-style-type: none"> – riparian habitat, within any diverted and/or re-established creek lines and retained water features; – potential habitat for threatened flora and fauna species; and – wildlife corridors, as far as is reasonable and feasible,

and as shown conceptually in Figure 4 in Appendix 2.	
Areas proposed for agricultural land	<ul style="list-style-type: none"> • Establish/restore grassland areas to support sustainable agricultural activities • Achieve the nominated land capability classification
Other land affected by the development	<ul style="list-style-type: none"> • Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native plant species (unless DRG agrees otherwise)
Final Landform	<ul style="list-style-type: none"> • Stable and sustainable for the intended post-mining land use/s • Integrated with surrounding natural landforms • Incorporate micro-relief and drainage lines that are consistent with surrounding topography, to the greatest extent practicable • Maximise surface water drainage to the natural environment (excluding final void catchment)
Final voids	<ul style="list-style-type: none"> • Designed as long term groundwater sinks to maximise ground water flows across back filled pits to the final void • Minimise to the greatest extent practicable: <ul style="list-style-type: none"> – the size and depth of final voids; – the drainage catchment of final voids; – any high wall instability risk; and – the risk of flood interaction
Surface infrastructure of the development	<ul style="list-style-type: none"> • To be decommissioned and removed, unless DRG agrees otherwise
Rehabilitation materials	<ul style="list-style-type: none"> • Materials from areas disturbed under this consent (including topsoils, substrates and seeds) are to be recovered, managed and used as rehabilitation resources, to the greatest extent practicable
Water quality	<ul style="list-style-type: none"> • Water retained on the site is fit for the intended post-mining land use/s • Water discharged from the site is suitable for receiving waters and fit for aquatic ecology and riparian vegetation
Community	<ul style="list-style-type: none"> • Ensure public safety • Minimise adverse socio-economic effects associated with mine closure

54. By the end of January 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Strategy for the development to the satisfaction of the Secretary. This strategy must:
- be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;
 - be prepared in consultation with DRG and Council;
 - build upon the Rehabilitation Objectives in Table 11 and the conceptual final landform depicted in Figure 4 in Appendix 2, including identification of opportunities for increasing the areas of woodland and habitat connectivity within the rehabilitated landscape;
 - include details of the canopy, sub-canopy, understory and ground strata species to be established in the rehabilitation areas, with a particular focus on ensuring the achievement of an appropriate level of diversity and mix of functional groups within each target community; and
 - include an indicative schedule for the staged rehabilitation of the development.

The Applicant must implement the approved strategy as approved from time to time by the Secretary.

Progressive Rehabilitation

55. The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.

Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.

- 55A. The Applicant must implement all reasonable and feasible measures to provide for the interim stabilisation and temporary vegetation of the existing rail loop and infrastructure corridor, as soon as reasonably practicable following the removal of infrastructure as required under condition 37.

Note: The Applicant's obligations under this condition will cease following the transfer or grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla mine (or its nominee).

Rehabilitation Management Plan

56. By the end of April 2019, unless otherwise agreed by the Secretary, the Applicant must prepare a Rehabilitation Management Plan for the development to the satisfaction of DRG. This plan must:
- (a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;
 - (b) be prepared in consultation with the Department, DoI Water, OEH, DPI, and Council;
 - (c) be prepared in accordance with any relevant DRG Guideline;
 - (d) describe how the rehabilitation of the site would achieve the objectives identified in Table 11 and the outcomes described in the Rehabilitation Strategy referred to in condition 54;
 - (e) include a detailed plan for the reinstatement and review of the proposed:
 - agricultural land capability of grassland areas in the final landform, including a protocol for periodic trials to demonstrate that the land capability is being achieved; and
 - rehabilitated woodland areas and fauna habitat, including a protocol for periodic trials to demonstrate that the target vegetation community is being achieved;
 - (f) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and for triggering remedial action (if necessary);
 - (g) describe the measures to be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform (including final voids), final land use/s and water management in the final landform;
 - (h) include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable to minimise the area exposed for dust generation;
 - (i) include a program to monitor, independently audit and report on the effectiveness of the measures in condition 56(g), and progress against the detailed performance and completion criteria in condition 56(f);
 - (j) to the maximum extent practicable build on and integrate with the other management plans required under this consent; and
 - (k) include detailed scheduling for progressive rehabilitation to be initiated, undertaken and/or completed over the next three years.

The Applicant must implement the management plan as approved by DRG.

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. By the end of December 2011, the Applicant must:
 - (a) notify in writing the owners of:
 - the land listed in Table 1 of Schedule 3 that they have the right to require the Applicant to acquire their land at any stage of the development;
 - any residence on the noise-affected land in Table 1 or Table 2 of Schedule 3 that they are entitled to ask for additional noise mitigation measures to be installed at their residence at any stage of the development;
 - any residences on the air quality-affected land listed in Table 1 that they are entitled to ask for additional air quality mitigation measures to be installed at their residence at any stage of the development;
 - any privately-owned land within 2 kilometres of the approved open cut mining pit on the site that they are entitled to ask for an inspection to establish the baseline condition of any buildings and/or structures on their land, or to have a previous property inspection updated; and
 - (b) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the documents listed in condition 2(a) of Schedule 2 identify that dust emissions generated by the development are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the development.

Within one month of any modification that leads to new land being added to Tables 1 or 2 of Schedule 3, the Applicant must notify affected land owners in accordance with the requirements of paragraph (a).

- 1A. Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended dust and/or noise criteria, the Applicant must:
 - (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and
 - (b) advise the prospective tenants of the rights they would have under this consent, to the satisfaction of the Secretary.
2. As soon as practicable after obtaining monitoring results showing:
 - (a) exceedance of the relevant criteria in Schedule 3, the Applicant must notify the affected landowner and tenants in writing of the exceedance, and provide regular monitoring results to each of these parties until the development is complying with the relevant criteria again; and/or
 - (b) an exceedance of the relevant criteria of Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).

INDEPENDENT REVIEW

3. If an owner of privately-owned land considers the development to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.

If the Secretary is not satisfied that an independent review is warranted, the Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.

If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must:

- (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to:
 - consult with the landowner to determine his/her concerns;
 - conduct monitoring to determine whether the development is complying with the relevant criteria; and
 - if the development is not complying with these criteria then:
 - determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine towards the impact on the land;
 - identify the measures that could be implemented to ensure compliance with the relevant criteria; and
- (b) give the Secretary and landowner a copy of the independent review.

4. Deleted

5. Deleted

LAND ACQUISITION

6. Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant **must** make a binding written offer to the landowner based on:
- (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development, having regard to the:
 - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
 - presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional mitigation measures required under condition 2 of [Schedule 3](#);
 - (b) the reasonable costs associated with:
 - relocating within the Muswellbrook, Singleton or Scone local government area, or to any other local government area determined by the [Secretary](#); and
 - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and
 - (c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the [Secretary](#) for resolution.

Upon receiving such a request, the [Secretary](#) shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:

- consider submissions from both parties;
- determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;
- prepare a detailed report setting out the reasons for any determination; and
- provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, the Applicant **must** make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.

However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the [Secretary](#) for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the [Secretary](#) will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.

Within 14 days of this determination, the Applicant **must** make a binding written offer to the landowner to purchase the land at a price not less than the [Secretary's](#) determination.

If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the [Secretary](#) determines otherwise.

7. The Applicant **must** pay all reasonable costs associated with the land acquisition process described in condition 6 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.
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SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. If the Secretary requires, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
 - (a) be submitted to the Secretary for approval prior to carrying out any development on site;
 - (b) provide the strategic framework for environmental management of the development;
 - (c) identify the statutory approvals that apply to the development;
 - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
 - (e) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the development;
 - respond to any non-compliance;
 - respond to emergencies; and
 - (f) include:
 - copies of any strategies, plans and programs approved under the conditions of this consent; and
 - a clear plan depicting all the monitoring to be carried out in relation to the development.

The Applicant must implement the approved strategy as approved from time to time by the Secretary.

Adaptive Management

- 1A. The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:

- (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
- (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.

Management Plan Requirements

2. The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:
 - (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant consent, licence or lease conditions);
 - any relevant limits or performance measures/criteria;
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;
 - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:
 - impacts and environmental performance of the development;
 - effectiveness of any management measures (see c above);
 - (e) a contingency plan to manage any unpredicted impacts and their consequences;
 - (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
 - (g) a protocol for managing and reporting any:
 - incidents;
 - complaints;
 - non-compliances with statutory requirements; and
 - exceedances of the impact assessment criteria and/or performance criteria; and

- (h) a protocol for periodic review of the plan.

Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.

Annual Review

3. By the end of March each year (or other such timing as agreed by the Secretary), the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:
- describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the next calendar year;
 - include a comprehensive review of the monitoring results and complaints records of the development over the past calendar year, which includes a comparison of these results against the:
 - relevant statutory requirements, limits or performance measures/criteria;
 - monitoring results of previous years; and
 - relevant predictions in the documents listed in condition 2(a) of Schedule 2;
 - identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
 - identify any trends in the monitoring data over the life of the development;
 - identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
 - describe what measures will be implemented over the next year to improve the environmental performance of the development.

Revision of Strategies, Plans and Programs

4. Within 3 months of:
- the submission of an annual review under condition 3 above;
 - the submission of an incident report under condition 7 below;
 - the submission of an audit under condition 9 below; and
 - any modification to the conditions of this consent,
- the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.

Within 4 weeks of conducting any such review, the Applicant must advise the Secretary of the outcomes of the review, and submit any revised documents for the approval of the Secretary.

Notes:

- The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the project.
- In the event of an inconsistency between condition 4(d) above and any condition in Schedule 3 of this consent, the latter prevails.

Updating & Staging Strategies, Plans or Programs

- 4A. The Applicant may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis.

With the agreement of the Secretary, the Applicant may prepare a revision or stage of any strategy, plan or program required under this consent without undertaking consultation with all parties nominated under the applicable condition in this consent.

Notes:

- While any strategy, plan or program may be submitted on a staged basis, the Applicant must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.
- If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.

Management of Cumulative Impacts

5. In conjunction with the owners of the nearby mines (including the Bengalla mine), the Applicant must use its best endeavours to minimise the cumulative impacts of the development on the surrounding area to the satisfaction of the Secretary.

Note: Nothing in this consent is to be construed as requiring the Applicant to act in a manner which is contrary to the Trade Practices Act 1974.

Community Consultative Committee

6. The Applicant **must** operate a Community Consultative Committee (CCC) for the development to the satisfaction of the **Secretary**. This CCC must be operated in general accordance with the **Department's Community Consultative Committee Guidelines State Significant Projects November 2016**, or its latest version.

Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.

Incident Notification

7. The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.

Non-Compliance Notification

- 7A. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Monitoring and Environmental Audits

- 7B. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.

Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.

Regular Reporting

8. The Applicant **must** provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent, and to the satisfaction of the **Secretary**.

INDEPENDENT ENVIRONMENTAL AUDIT

9. By the end of March 2014, and every 3 years thereafter, unless the **Secretary** directs otherwise, the Applicant **must** commission, **commence** and pay the full cost of an Independent Environmental Audit of the development. This audit must:
- be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the **Secretary**;
 - include consultation with the relevant agencies **and** the CCC;
 - assess the environmental performance of the development and whether it is complying with the requirements in this consent and any relevant EPL or Mining Lease **or necessary water licences** (including any assessment, plan or program required under these approvals);
 - review the adequacy of strategies, plans or programs required under the abovementioned approvals (including whether the development has met or is trended towards the progressive performance and completion criteria detailed in these strategies, plans or programs);
 - if necessary, recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under the abovementioned approvals; **and**
 - be conducted and reported to the satisfaction of the **Secretary**.

Notes:

- This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the **Secretary**.*

10. Within 12 weeks of commencing any audit, or as otherwise agreed by the **Secretary**, the Applicant must submit a copy of the audit report to the **Secretary** and any other NSW Government agency that requests it, together with its response to any recommendations contained in the audit report and a

timetable for the implementation of these recommendations, as required. The Applicant must implement the audit report recommendations, to the satisfaction of the Secretary.

ACCESS TO INFORMATION

11. The Applicant must:

- (a) make the following information publicly available on its website:
- the documents listed in condition 2(a) of Schedule 2;
 - all current statutory approvals for the development;
 - approved strategies, plans and programs required under the conditions of this consent;
 - a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent;
 - a complaints register, which is to be updated on a monthly basis;
 - minutes of CCC meetings;
 - the annual reviews (over the last 5 years);
 - any independent environmental audit, and the Applicant's response to the recommendations in any audit;
 - any other matter required by the Secretary; and
- (b) keep this information up to date,
to the satisfaction of the Secretary.
-

**APPENDIX 1
SCHEDULE OF LAND**

Tenure Type	Lot	Section	Deposited Plan Number
Freehold	1	8	2770
Freehold	1	5	2770
Freehold	1	6	2770
Freehold	1	3	2770
Freehold	1	4	2770
Freehold	1	1	2770
Freehold	1	2	2770
Freehold	1		104563
Freehold	1		112742
Freehold	1		114090
State Rail Authority (Crown)	1		189134
Freehold	1	2	192121
Freehold	1	1	192121
Freehold	1		194043
Freehold	1		213293
Freehold	1		254339
Freehold	1		312392
Freehold	1		318999
Freehold	1		401237
Freehold	1		544039
Freehold	1		629491
Freehold	1		634490
Freehold	1		655691
Freehold	1		706645
Freehold	1		742324
Freehold	1		744333
Freehold	1		745369
Freehold	1		780673
Freehold	1		791576
Crown	1		904885
Freehold	1		905281
Freehold	1		906668
Freehold	1		911212
Freehold	1		915913
Freehold	1		944232
Freehold	1		998239
Freehold	1		1072667
Freehold	1		1080962
Freehold	1		1081385
Freehold	1		1100374

Tenure Type	Lot	Section	Deposited Plan Number
Freehold	1		1137590
State Rail Authority (Crown)	1		1129338
Freehold	1		1199733
Freehold	2	8	2770
Freehold	2	5	2770
Freehold	2	6	2770
Freehold	2	3	2770
Freehold	2	1	2770
Freehold	2	4	2770
Freehold	2		104563
Freehold	2		112742
Freehold	2		114090
Freehold	2	2	192121
Freehold	2		194043
Freehold	2		629491
Freehold	2		634490
Freehold	2		706645
Freehold	2		780673
Freehold	2		791576
Freehold	2		801249
Freehold	2		915913
Freehold	2		997931
Freehold	2		998239
Freehold	2		1081385
Freehold	2		1234475
Freehold	3	8	2770
Freehold	3	5	2770
Freehold	3	3	2770
Freehold	3	1	2770
Freehold	3		112742
Freehold	3	2	192121
Freehold	3		194043
Freehold	3		236668
Freehold	3		629491
Freehold	3	28	758554
Freehold	3	29	758554
Freehold	3		791576
Freehold	3		998239
Freehold	3		998477
Freehold	3		1183514

Tenure Type	Lot	Section	Deposited Plan Number
State Rail Authority (Crown)	3		1170997
Freehold	3		1199733
Freehold	3		1234475
Freehold	4	8	2770
Freehold	4	5	2770
Freehold	4	6	2770
Freehold	4	4	2770
Freehold	4	3	2770
Freehold	4	1	2770
Freehold	4	2	2770
Freehold	4	2	192121
Freehold	4	28	758554
Freehold	4	29	758554
Freehold	4		801249
State Rail Authority (Crown)	4		1170997
Freehold	4		1199733
Freehold	4		1234475
Freehold	5	8	2770
Freehold	5	6	2770
Freehold	5	4	2770
Freehold	5	3	2770
Freehold	5	1	2770
Freehold	5		112742
Freehold	5	2	192121
Freehold	5	28	758554
Freehold	5		801249
State Rail Authority (Crown)	5		1170997
Freehold	5		1199733
Freehold	5		1234475
Freehold	6	8	2770
Freehold	6	3	2770
Freehold	6	1	2770
Freehold	6	2	192121
Freehold	6		749716
Freehold	6		750926
Freehold	6	28	758554
Freehold	6		821183
Freehold	6		1199733
Freehold	6		1234475
Freehold	7		112742

Tenure Type	Lot	Section	Deposited Plan Number
Freehold	7	2	192121
Freehold	7		236668
Freehold	7		749716
Freehold	7		784436
Freehold	7		821183
Freehold	7		1170997
Freehold	7		1199733
Freehold	7		1234475
Freehold	8		255048
Freehold	8		770911
Road	8		1072668
Freehold	8		1170997
Freehold	8		1199733
Freehold	9		255048
Freehold	9		750926
Road	9		1072668
Freehold	9		1199733
Freehold	10		255048
Freehold	10		750926
Road	10		1072668
Freehold	10		1184928
Freehold	10		1199733
Freehold	11		112742
Freehold	11		255048
Freehold	11		1051153
Road	11		1072668
Freehold	11		1184928
Freehold	12		112742
Freehold	12		255048
Freehold	12		659924
Road	12		1072668
Freehold	12		1112792
Freehold	13		112742
Freehold	13		255048
Freehold	13		750926
Freehold	13		1112792
Freehold	14	8	2770
Freehold	14		112742
Freehold	14		255048
Freehold	14		1112792
Freehold	15		112742
Freehold	15		255048
Freehold	15		750926

Tenure Type	Lot	Section	Deposited Plan Number
Freehold	15		1112792
Freehold	16		112742
Freehold	16		255048
Freehold	16		750926
Freehold	16		1072668
Freehold	16		1112792
Freehold	17		2770
Freehold	17		112742
Road	17		1072668
Freehold	18		112742
Freehold	18		1072668
Freehold	19		112742
Freehold	19		750926
Road	19		1072668
Freehold	20		112742
Freehold	20		747226
Freehold	20		1072668
Freehold	21		554140
Freehold	21		750926
Freehold	22		554140
Freehold	22		776758
Freehold	22		870608
Freehold	22		1041946
Freehold	22		1072668
Freehold	23		1041946
Freehold	24		742543
Freehold	24		1072668
Freehold	25		1053537
Freehold	25		1072668
Freehold	26		750926
Freehold	26		1072668
Freehold	27		745897
Freehold	27		1072668
Freehold	28		750926
Freehold	29		731706
Freehold	30		137297
Freehold	35		1076510
Freehold	36		1108421
Freehold	38		750926
Freehold	39		750926
Freehold	41		750926
Freehold	42		750926
Freehold	43		750926

Tenure Type	Lot	Section	Deposited Plan Number
Freehold	44		750926
Freehold	45		750926
Freehold	50		809718
Freehold	51		809718
Freehold	71		626353
Freehold	71		750926
Freehold	72		626353
Freehold	72		750926
Freehold	73		750926
Freehold	74		750926
Freehold	86		750926
Freehold	90		750926
Crown	90		1215947
Freehold	91		750926
Freehold	92		750926
Freehold	93		750926
Freehold	94		665393
Road	100		1148907
Freehold	100		1177385
Freehold	101		1148907
Freehold	102		1148907
Freehold	103		1148907
Freehold	104		1148907
Freehold	105		1148907
Freehold	106		1148907
Freehold	122		750926
Freehold	123		700578
Freehold	123		750926
Freehold	124		700578
Freehold	124		750926
Freehold	126		750926
Freehold	127		750926
Freehold	130		750926
Freehold	131		750926
Freehold	132		558246
Freehold	132		750926
Freehold	133		750926
Freehold	135		750926
Freehold	143		750926
Freehold	144		1120266
Freehold	145		1120266
Freehold	146		750926
Freehold	147		1083411

Tenure Type	Lot	Section	Deposited Plan Number
Freehold	149		750926
Freehold	150		750926
Freehold	151		750926
Freehold	152		750926
Freehold	153		750926
Freehold	154		750926
Freehold	164		635272
Freehold	177		750926
Freehold	181		750926
Freehold	184		750926
Freehold	188		750926
Freehold	189		750926
Freehold	190		750926
Freehold	193		750926
Freehold	195		750926
Freehold	196		750926
Freehold	199		750926
Freehold	200		750926
Freehold	211		750926
Freehold	212		750926
Freehold	213		750926
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Freehold	217		750926
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Freehold	236		750926
Freehold	237		750926
Freehold	238		750926
Freehold	239		750926
Freehold	240		750926
Freehold	241		750926
Freehold	242		750926
Freehold	251		750926
Freehold	253		750926
Freehold	254		750926
Freehold	256		750926
Freehold	258		750926
Freehold	259		750926

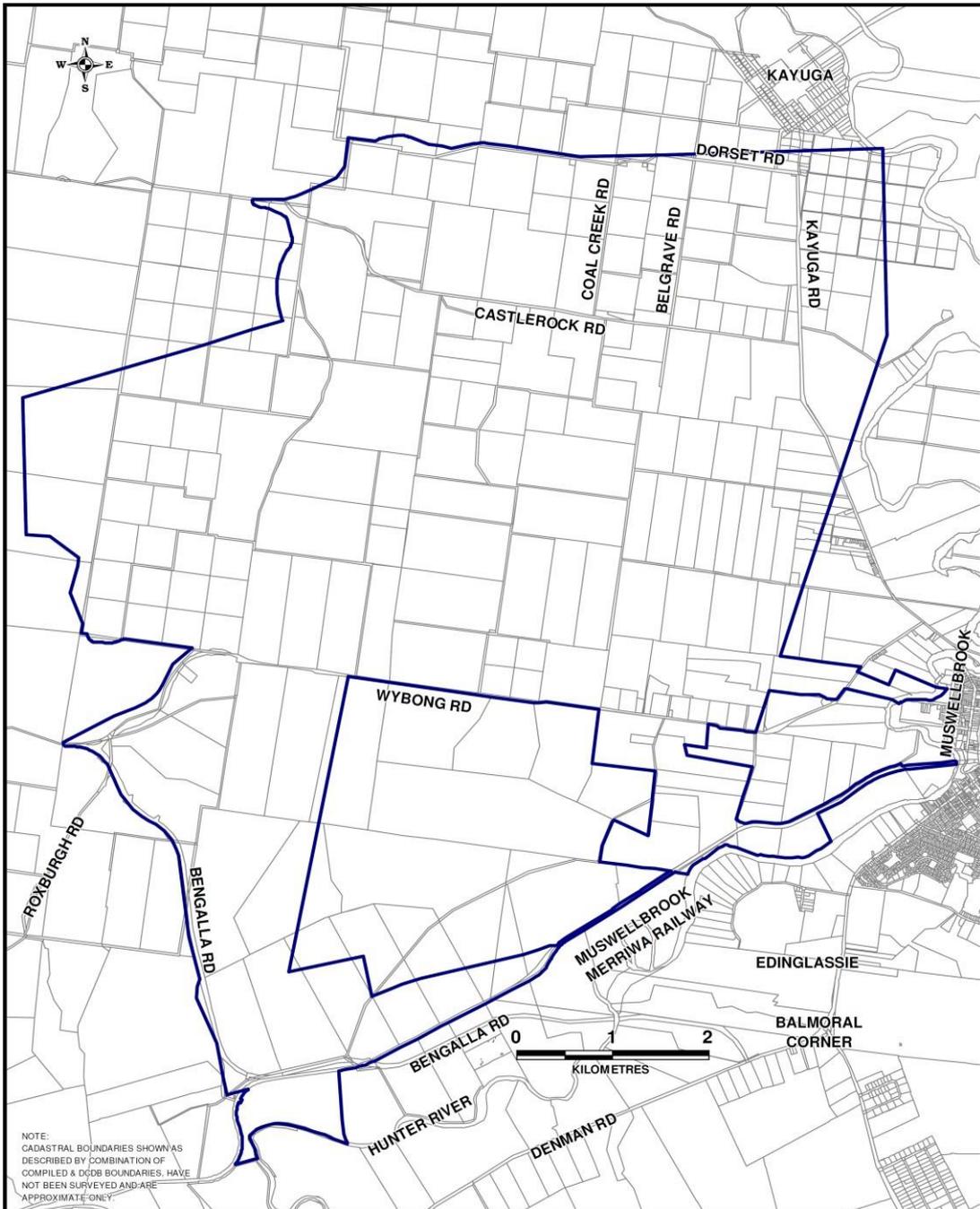
Tenure Type	Lot	Section	Deposited Plan Number
Freehold	260		750926
Freehold	261		561919
Freehold	261		750926
Freehold	262		750926
Freehold	263		750926
Freehold	264		750926
Freehold	265		750926
Freehold	268		567444
Freehold	268		750926
Freehold	269		567444
Freehold	269		750926
Freehold	270		750926
Freehold	271		750926
Freehold	272		750926
Freehold	273		750926
Freehold	274		750926
Freehold	275		750926
Freehold	276		750926
Freehold	278		750926
Freehold	279		750926
Freehold	280		750926
Freehold	282		750926
Freehold	505		711996
Freehold	641		554159
Freehold	1006		1235827
Freehold	1007		1235827
Freehold	1008		1235827
Freehold	1009		1235827
State Rail Authority (Crown)	1031		1164040
Freehold	1453		628493
Crown	7001		93329
Crown	7304		1146786
Freehold	A		174071
Freehold	A		432713
Freehold	B		174071
Freehold	B		432713
Crown Watercourse		Hunter River	
State Rail Authority (Crown)		Muswellbrook Merriwa Railway	
State Rail Authority (Crown)		Railway lands located within, between or adjacent to the above parcels of land	

Tenure Type	Lot	Section	Deposited Plan Number
Muswellbrook Council or Department of Lands (Crown)		Various council and Crown public and unformed roads located within, between or adjacent to the above parcels of land	
Freehold		Any identified or unidentified historical title residues located within, between or adjacent to the above parcels of land	

935405-002

Tenure Type	Lot	Section	Deposited Plan Number
Crown		Creeks or streams located within, between or adjacent to the above parcels of land	
Crown		Any unidentified Crown land or Crown land historical title residues located within, between or adjacent to the above parcels of land	

Note: The Development Consent Boundary is shown conceptually on the figure below.



NOTE:
 CADASTRAL BOUNDARIES SHOWN AS
 DESCRIBED BY COMBINATION OF
 COMPILED & DCDB BOUNDARIES. HAVE
 NOT BEEN SURVEYED AND ARE
 APPROXIMATE ONLY

MACH Energy

MACH Energy Australia
 Mt Pleasant Project

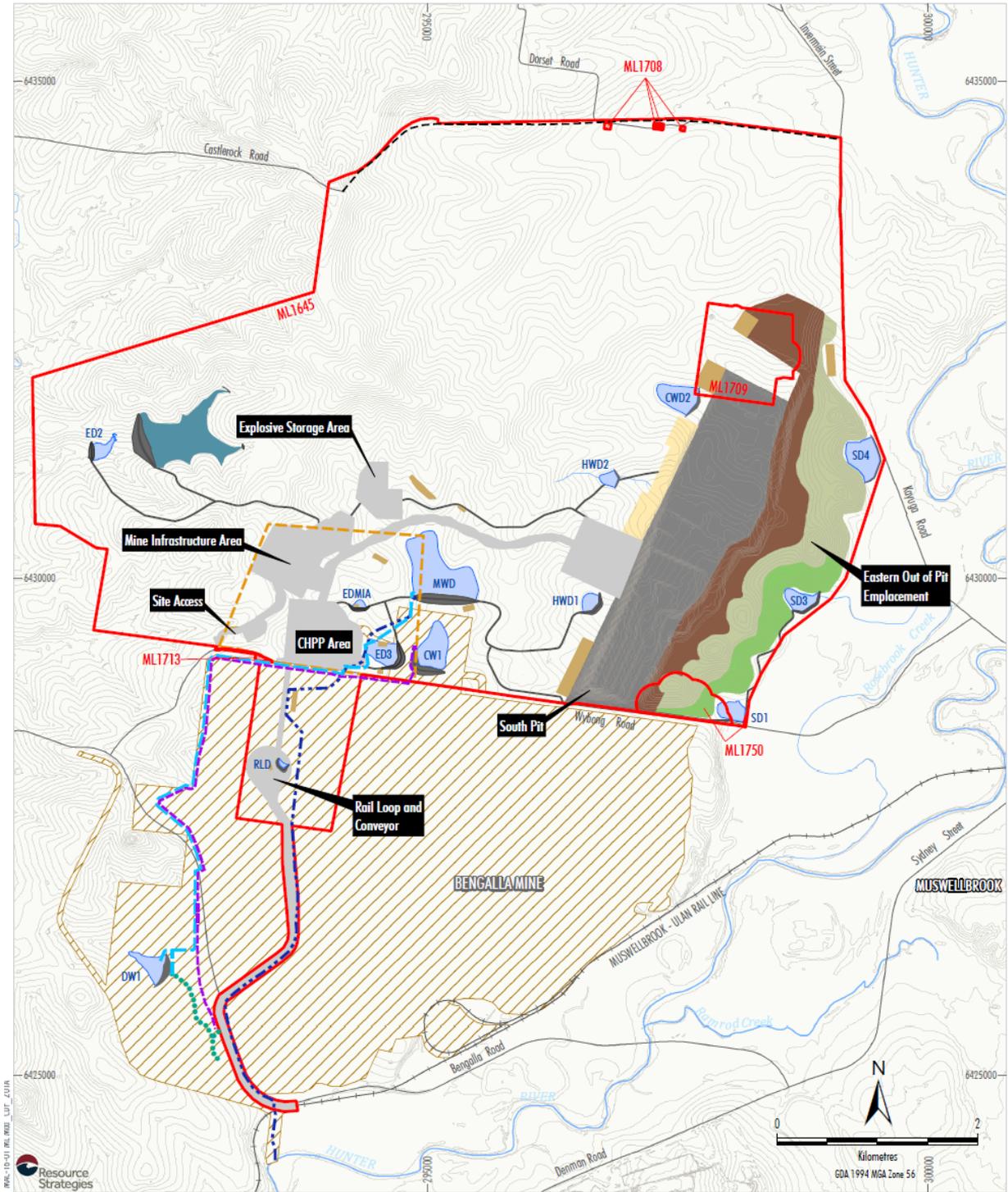
Drawn By: SC
 Date: 24/08/18
 Layout: A4
 Projection: MGA 56
 Location: Muswellbrook
 Contour: N/A
 Version: 01

Development Consent Boundary

THE SITE INCLUDES ALL LAND AND/OR LOTS LISTED IN
 THE SCHEDULE OF LANDS TABLE TO THE EXTENT THAT
 SUCH LAND AND/OR LOTS FALL WITHIN AND/OR ARE
 INTERSECTED BY THE DEVELOPMENT CONSENT BOUNDARY

Workspace Ref: MACH Mod 4 Consent Lot Correlation 180727.wor
 PDF Ref: MACH Mod 4 Consent Boundary 180824.PDF

**APPENDIX 2
FIGURE 1 - CONCEPTUAL PROJECT LAYOUT PLAN AT 2021**

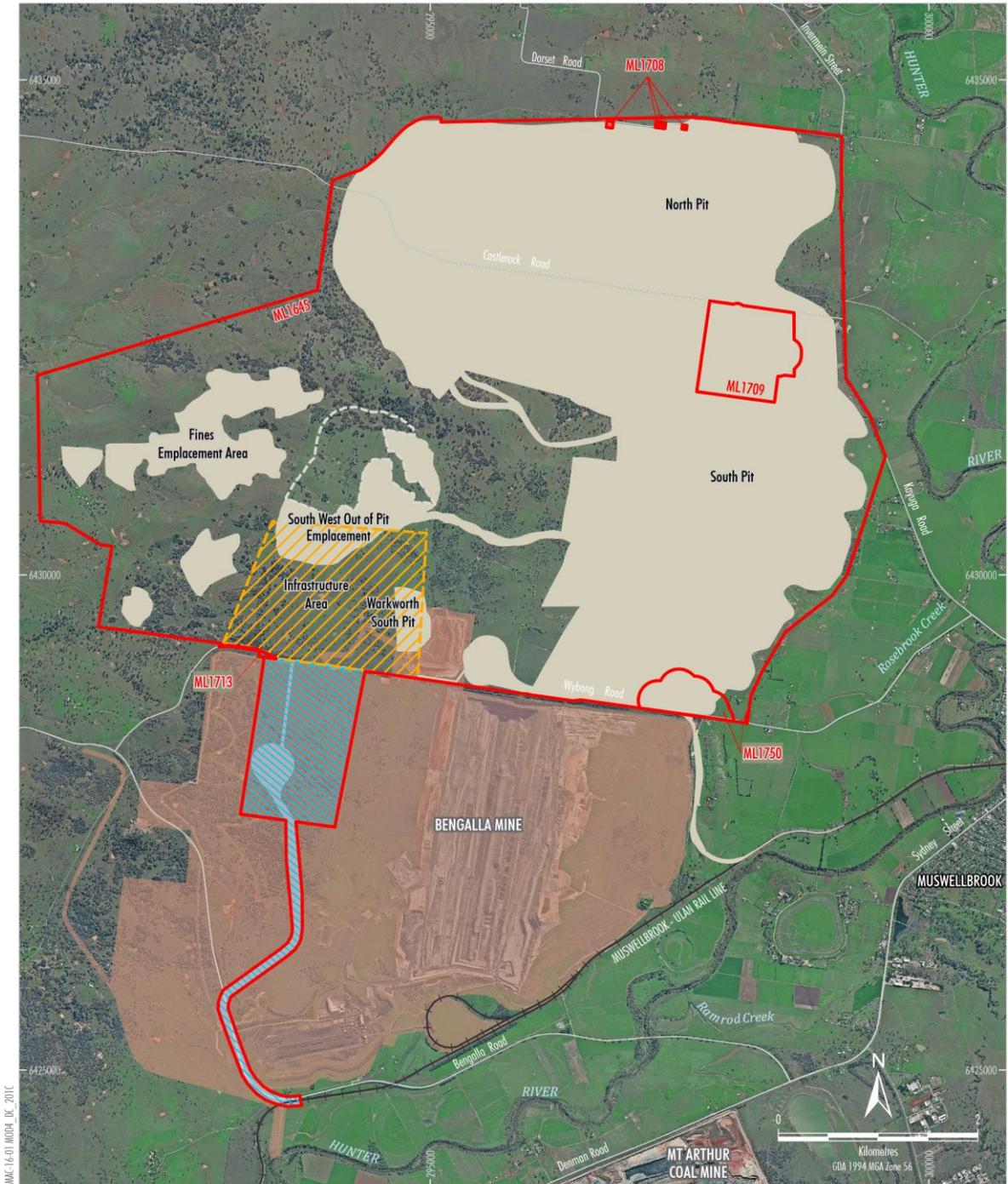


- | | |
|--|--|
| Mining Lease Boundary | Indicative Water Pipeline Alignment |
| Bengalla Mine Approved Disturbance Boundary (SSD-5170) | MPO Hunter River Supply Pipeline |
| Infrastructure Area Envelope | MPO DW1 Pipeline (Bi-directional) |
| Active Stripping Area | Bengalla Mine CW1 Pipeline |
| Active Mining Area | Approximate Extent of Scour Protection |
| Active Overburden Emplacement Area | Water Dam |
| Topsoil Stockpile | Fines Emplacement Area |
| Initial Rehabilitation | |
| Established Rehabilitation | |
| Infrastructure and Borrow/Stockpile Area | |
| Access Road | |
| Northern Link Road | |

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

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MOUNT PLEASANT OPERATION

FIGURE 3 - APPROVED SURFACE DISTURBANCE PLAN



MACH-16-01 MOD4_DC_201C

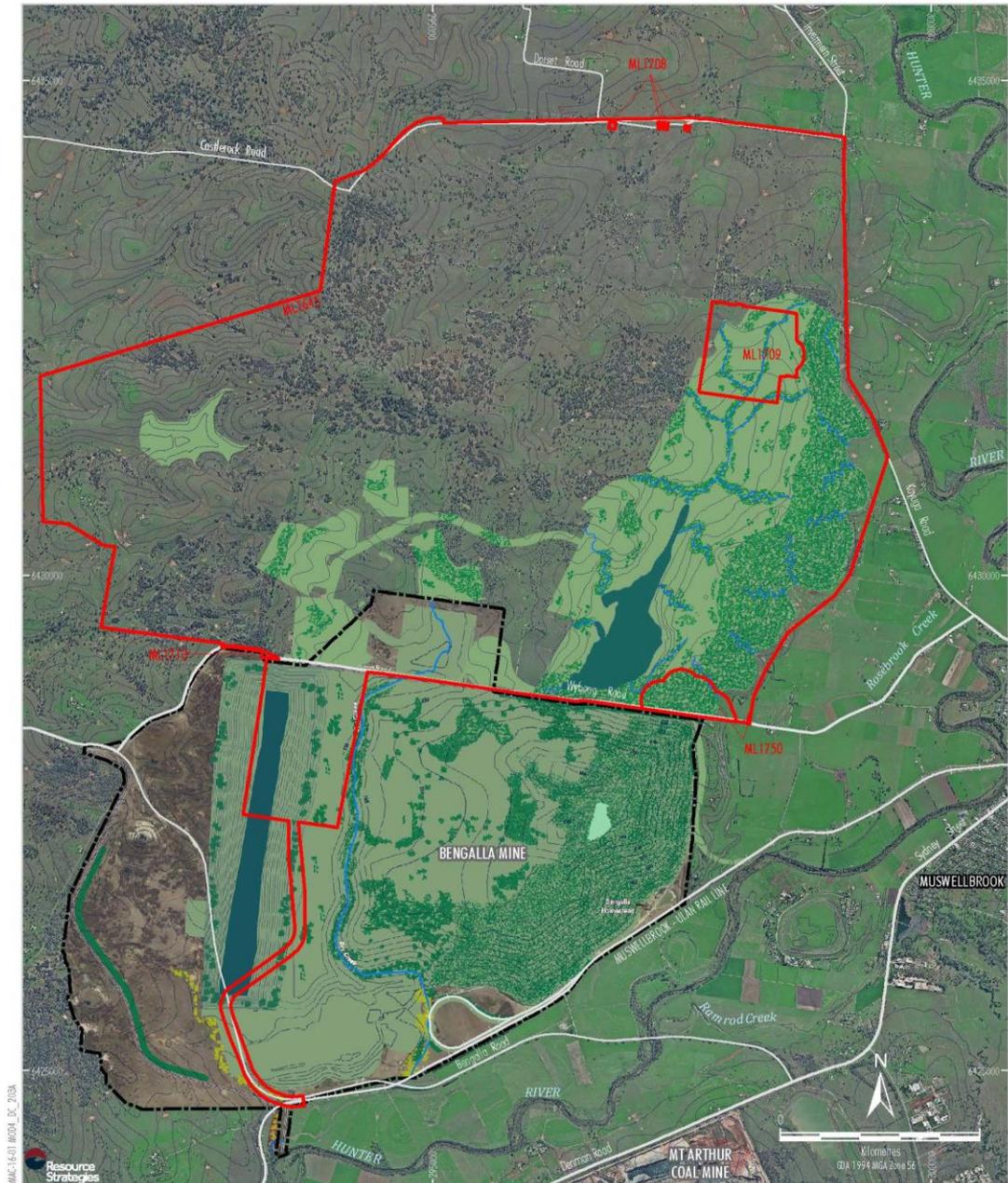
- LEGEND**
- Mining Lease Boundary
 - Approximate Extent of Approved Surface Development ¹
 - Area Relinquished for Overburden Emplacement and Major Infrastructure
 - Infrastructure Area Envelope
 - Infrastructure to be removed under the Terms of Condition 37, Schedule 3
 - Indicative Existing Coal Transport Infrastructure
 - Bengalla Mine Approved Disturbance Boundary (SSD-5170)

NOTE
 1. Excludes some project components such as water management infrastructure, infrastructure within the Infrastructure Area Envelope, offsite coal transport infrastructure, road diversions, access tracks, topsoil stockpiles, power supply, temporary offices, signalling, other ancillary works and construction disturbance.

Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2018); Department of Planning and Environment (2016); MACH Energy (2017)
 Orthophoto: MACH Energy (Aug 2016)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Approved Surface Disturbance Plan

FIGURE 4 - CONCEPTUAL FINAL LANDFORM



- 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 Final Landform
 (2026)

APPENDIX 3 STATEMENT OF COMMITMENTS

Environmental aspect	Commitment
Noise and vibration	<ul style="list-style-type: none"> • A NMP will be prepared in accordance with the development consent. • The NMP will be extended to include management of potential noise emissions associated with the MOD 4 rail infrastructure. The plan will also consider proactive and predictive modelling and management, and protocols for managing noise during adverse meteorological conditions. • Noise monitoring will continue to be undertaken in accordance with the development consent. • Implementation of the following feasible and reasonable mitigation measures: <ul style="list-style-type: none"> – Deleted; – plant will operate in less exposed areas during the more sensitive night period; – procurement of new and best available technology plant; – provision of noise suppression on all mobile plant. It anticipated that the noise suppression technology will require an outlay of capital expenditure of between \$15M and \$20M; and – updating the comprehensive operational noise management plan to include real-time back to base noise monitoring using the best available technology. • The Applicant is committed to working with its communities and extend the opportunity for upfront acquisition upon request to the privately-owned properties listed in Table 1 of Schedule 3.
Ecology	<ul style="list-style-type: none"> • Deleted • Details of the rehabilitation of the infrastructure area upon decommissioning will be provided in the REMP. • Ecological management for the Mount Pleasant Project will be undertaken in accordance with the existing development consent.
Air quality	<ul style="list-style-type: none"> • Air quality management for the Mount Pleasant Project will be undertaken in accordance with the Air Quality Management Plan which is a requirement under the existing development consent.
Aboriginal cultural heritage	<ul style="list-style-type: none"> • Aboriginal cultural heritage management will continue to be undertaken in accordance with relevant Applicant procedures. • Deleted • Where site avoidance is impossible, cultural heritage management approaches that are set out in the CHMP for the Mount Pleasant Project area will be applied. This will include lodging an application for the relevant AHIPs under section 90 of the NPW Act. • Deleted • Aboriginal cultural heritage sites that cannot be avoided will be mitigated by standard salvage collection measures in accordance with the Aboriginal Heritage Management Plan, following the issue of an AHIP (section 90, NPW Act). • The Aboriginal Heritage Management Plan will be revised to include the proposed modifications and any requirements specified by the regulator. • Any mitigation salvage will be staged over time based upon mine operation plan requirements and the zoning regime of the CHMP. • All cultural materials collected will be stored in a storage facility to be established at the Mount Pleasant Project or VCA under an approved Care and Control Permit. • All cultural heritage sites not affected by the proposed development will be managed in situ in accordance with the Aboriginal Heritage Management Plan

Environmental aspect	Commitment
Visual amenity	<p>procedures for long-term protective management and to minimise future development disturbance.</p> <ul style="list-style-type: none"> • Sites that are assessed as vulnerable to damage due to the proximity to roads and tracks or other operational infrastructure will be appropriately buffered and barricaded in accordance with existing site protection protocols including monitoring protocols. • Visual amenity management will be undertaken in accordance with the development consent, which requires the preparation of a Visual Impact Management Plan. • Lighting management will be undertaken in accordance with the development consent, including preparation of an engineering report regarding light emissions.
Deleted	• Deleted
Deleted	<ul style="list-style-type: none"> • Deleted. • Deleted
Deleted	• Deleted
Removal of Mount Pleasant Infrastructure South of Wybong Road	<ul style="list-style-type: none"> • MACH Energy Australia Pty Ltd (MACH Energy) or any person/s who rely on any development consent to carry out the Mount Pleasant development (as modified or replaced by a new development consent from time to time) will, by no later than 31 October 2022: <ul style="list-style-type: none"> a) remove all infrastructure associated with the Development within Mining Lease No. 1645 (ML 1645) south of Wybong Road (other than infrastructure which the operator of the Bengalla Mine agrees with MACH Energy in writing can remain in situ); b) do all things available to transfer or cause the grant of a mining lease over that part of ML 1645 south of Wybong Road to the operator of Bengalla Mine or its nominee; c) transfer the freehold land owned by MACH Energy within ML 1645 south of Wybong Road to the operator of Bengalla Mine (or its nominee) at rural market value; and d) release the easements for pipeline and rail spur within or in the vicinity of ML 1645 south of Wybong Road which benefit land owned by MACH Energy. <p><i>Note: The obligations under this commitment are not subject to the grant of development consent or any other approvals or access arrangements for alternative coal transport infrastructure for the Development and must be satisfied irrespective of the existence of any such approvals or infrastructure.</i></p>
Flooding	<ul style="list-style-type: none"> • MACH Energy will design the MOD 4 rail infrastructure (including associated hydraulic structures) to meet the following criteria for potential flooding impacts for a 1% Annual Exceedance Probability flood event: <ul style="list-style-type: none"> ○ no more than 0.1 m increase in flood levels on any privately-owned land; ○ no more than 0.01 m increase in flood levels at any privately-owned dwellings or commercial spaces; ○ no more than 0.01 m increase in flood levels at any public roads servicing privately-owned properties; and ○ no more than 0.1 metres per second (m/s) increase in flood velocities at privately-owned dwellings or commercial spaces.
Rail Noise	<ul style="list-style-type: none"> • MACH Energy will document in the Mount Pleasant Operation Noise Management Plan reasonable and feasible measures that can be undertaken to minimise rail brake squeal associated with the MOD 4 rail infrastructure. • The MOD 4 rail infrastructure will be subject to best practice detailed design, including consideration of brake squeal and bunching potential. • MACH Energy will work with rail freight providers and a noise specialist during the final commissioning of the MOD 4 rail infrastructure to undertake trials and implement operational noise controls. This may include, for example, optimising train speed to reduce observed excessive noise.

Environmental aspect **Commitment**

	<ul style="list-style-type: none">• In the event of recurring rail noise complaints, MACH Energy will consult with rail freight providers to investigate the cause of the noise and investigate reasonable and feasible mitigation options to address the issue. This may include, for example, further varying rail speeds, driver behaviour or stock maintenance. MACH Energy will consider the outcomes of any such investigation in the renewal or extension of Mount Pleasant Operation rail freight contracts.
Redundant Infrastructure Removal in Bengalla Mine Footprint	<ul style="list-style-type: none">• MACH Energy will stabilise redundant rail infrastructure areas within the footprint of the Bengalla Mine such that they do not pose an ongoing material source of dust emissions (i.e. seeding to establish a cover crop and/or application of a dust suppressant) prior to management of these areas being transferred to Bengalla Mine.• Existing Mount Pleasant Operation rail spur erosion and sediment control water management structures (e.g. sediment fences) within the footprint of Bengalla Mine will also be left in place, subject to agreement of Bengalla Mine.
Visual Vegetation Screens	<ul style="list-style-type: none">• MACH Energy will inspect the condition of the vegetation visual screens described in the Visual Impact Management Plan on a quarterly basis, and maintain these vegetation visual screens to the satisfaction of the Secretary.
Construction Traffic	<ul style="list-style-type: none">• MACH Energy will develop a Construction Traffic Management Plan for the MOD 4 construction works in consultation with Council and to the satisfaction of the Secretary.
Management of Historic Heritage Items	<ul style="list-style-type: none">• MACH Energy will implement historic heritage management associated with MOD 4 in consultation with Council and a copy of any resulting reports/documentation will be provided to Council for its records.• MACH Energy will consult with Council on the content of the photographic record of Overton Orchard and Race Track.• MACH Energy will limit movement of vehicles/machinery in the area of the Overton Orchard and Race Track to avoid potential damage outside of the MOD 4 disturbance footprint, in consultation with Council. This includes avoiding disturbance of the areas shown in blue on Figure 6 of the Statement of Heritage Impact (Extent, 2007) included as Appendix F of EA (MOD 4).• MACH Energy will consult with Council on potential points of access and routes for heavy vehicles and machinery at the Blunt's Butter Factory. Points of access and routes will be demarcated and MACH Energy will ensure heavy vehicles remain within the demarcated areas.• MACH Energy will consult with Council regarding appropriate demarcation to restrict movement of heavy vehicles near the two cuttings located east of Overton Orchard. If artefacts are exposed at the base of the well at MP13, works will cease until an archaeologist advises whether or not they constitute 'relics' under the NSW Heritage Act 1977 and whether works should proceed pursuant to an application for an 'exception', or an excavation permit.

(Note: References to abbreviations, tables, sections, figures and appendices are references to the EA MOD 1, unless otherwise stated)

APPENDIX 4
GENERAL TERMS FOR THE PLANNING AGREEMENT

The Applicant undertakes to make the following Development Contributions:

Note: where indicated in the following table CPI will be applied to the payment on each anniversary of the payment with the payment being increased in line with the CPI for the previous 12 month period.

Column 1	Column 2
Item	Development Contribution
Proposed Mt Pleasant Community Contribution	\$500,000 per annum (indexed annually according to CPI). A community representative committee will be established, including Applicant representatives, to make recommendations to Council regarding these community contributions.
Council Road Maintenance Costs	Costs associated with the maintenance of roads, as reasonably apportioned to the use of the road by Mount Pleasant, up to a maximum annual payment of \$220,000 per annum (indexed according to CPI). This contribution will be made for the recurrent road maintenance to be used at Councils discretion for that purpose.
Environmental Officer	The Applicant to make contributions to an Environmental Officer, up to a maximum of \$20,000 per annum (indexed annually according to CPI).
Apprenticeships	The Applicant to use its best endeavours to engage 4 apprentices per year for the life of the mine sourced from residents within the Muswellbrook Shire and Aberdeen.

APPENDIX 5 LAND OWNERSHIP, RECEIVER LOCATIONS AND NOISE ASSESSMENT GROUPS

Ref No	Landholder	Ref No	Landholder	Ref No	Landholder
1	MACH ENERGY AUSTRALIA PTY LTD	182	JG & AJ SADLER	302	MJ & MJ DUNCAN
2	BENGALLA MINING COMPANY PTY LTD	189	OB O'BRIEN	305	RH ENGLEBRECHT
3	ANGLO COAL (DARTBROOK MANAGEMENT) PTY LTD	191	JA & JE FIBBINS	400	ROSSGOLE PASTORAL COMPANY PTY LTD
4	JR SCRIVEN	192	IG & CW INGLE	401	JL & DG DAY
5	COAL OPERATIONS AUSTRALIA LTD	193	GM & KL SMITH	402	PC BRITTAN
6	MUSWELLBROOK RACE CLUB LTD	194	TC & JBA HARRIS	403	WILCROW PTY LTD
7	MUSWELLBROOK COAL COMPANY LTD	195	T & RK YOUNG	404	JL & DG & RW DAY
8	MANGoola COAL OPERATIONS PTY LTD	198	TJ & NP GOLDRICK	405	GL & JL DANIELS
19	DP ENGLEBRECHT	199	NA BURLING	406	LE & SR HOLDSWORTH
20	KB & JA BARNETT	200	R EASTON	407	AD LONERGAN
21	MJ MCGOLDRICK	201	PA & MP O'BRIEN	408	SN BATEMAN
23	JABETIN PTY LTD	202	DN RAPHAEL	409	AP CORLISS
35	C HORNE	203	RF & MA MILLARD	410	V BATEMAN
43	JB MOORE	206	WJ HARDES	411	DL CADDEY
45	BA & TE STRACHAN	207	SW & KL BARKLEY	412	JA BAILEY
47	BL & ML BATES	208	FK & WDG ALMOND & PW HUME	413	MUH LUMBY
67	JM SIMPSON	212	DR & CI TUBB	414	PG LUCK
68	RK & NV GOOGE	213	ENGLEBRECHT RACING STABLES PTY LTD	415	SJ FRANKLAND
74	N & M SORMAZ	214	AL THOMSON-WEIR & RC WEIR	416	RV MITCHELL
77	DM PURSER	215	WJ & CB MCINTOSH	417	M & JA CASTELLANA
79	DW ADNUM	216	NU KEEVERS	418	PB WATTS
80	WJ ADNUM	217	RRA FARNSWORTH	419	KM BATES & TG WOODS
82	CK BIRCH	218	SY JOHNSON	420	D COLLINS
83	LG & CM KELMAN	219	GL & KL ANDREWS	421	GW RICHARDS
84	GE PITMAN	220	RA BYRNES & MA MOLLER	422	ME DANIELS
86	COWTIME INVESTMENTS PTY LTD	221	TD BARRON	423	DB WRIGHT
96	RP GRAY	222	ML & EA SWEENEY	424	TJ & AD & J LONERGAN & DM MCGUIGAN
102	AJPS MATHER	223	MC & LJ DOBIE	425	JE LONERGAN
108	JS GIBSON	224	DL ROBINSON	426	J BIRCH
112	BD BARRY	225	MR CRANFIELD & JR GLEESON	427	IJ BYFIELD
118	JM & CA HAYES	249	TW ROOTS	428	JM GOWING
120	DL & PA MOORE	252	RM & KF MERRICK	429	KP & MD & JJ COLLINS & ML WILLIAMSON
121	C & JM MOORE	257	PG & CM LANE	430	DJ HULBERT
136	DG YORE	258	NU & RY ELLIS	431	GJ DAY
139	RW & LP UPTON	259	MR PEEL	432	REN & TR ADAM & KL CONE
140	DAPKOS PTY LTD	260	PSJ MURRAY	433	CJ ASHFORD & JP BRENNAN
143	JS & NM LONERGAN	261	PR ELLIS	434	GJ & RL JONES
147	MJ & RG ADNUM	271	DE KILGANNON & DS MACDOUGALL	435	MN FRASER
153	GM CASEY	272	GC SPARRE	436	MEDEGATE PTY LTD
154	PD & F STANDING	273	IJ & CM RICHARDS	437	BG & S CANVIN
156	JE & JL LONERGAN	280	MONADELPHOUS PROPERTIES PTY LTD	438	WALFERTAN PROCESSORS PTY LTD
157	RB PARKINSON	281	JR & JA BUCKLEY	439	PITNACREE (BLAIRMORE) PTY LTD
158	JM HOATH	282	JE ANDERSON & KL & J CAMPBELL & MV & DJ & SE & TP HALLETT	440	DARLEY AUSTRALIA PTY LTD
159	JE & MS DUCEY			441	MACQUEEN PROJECTS PTY LTD
169	L GREENSILL & J WATTUS	283	SRP & RF RAY	442	WJ BOURKE
172	RL & CE THOMPSON	285	THE NEW SOUTH WALES GREYHOUND BREEDERS OWNERS & TRAINERS ASSOCIATION LTD	443	RG & K BRADLEY
173	TL KING & JA WARD			444	JW & VL BRACE
174	TJ & ML POWER	286	MUSWELLBROOK SHIRE COUNCIL	445	AUSGRID
176	JAF & LA ALLAN	287	TELSTRA CORPORATION LTD	446	W CLARKE & G HURST & W KELYMACK & G LANE & G WOOLNOUGH
177	FW & HM & SA WHEATLEY	288	LA & JM WEBSTER	447	NM & JS LONERGAN
178	PA NEELY	289	RA & EA LAWMAN	448	JS LONERGAN
179	FW WHEATLEY	292	GR & MK WALSH	449	KM LEE
180	FA WHEATLEY & SON PTY LTD	293	MG & LJ LATHAM	450	KL & GM SMITH
181	KL & HR DAY PTY LTD	296	JM WILD		

Source: NSW Land & Property Information (2018)

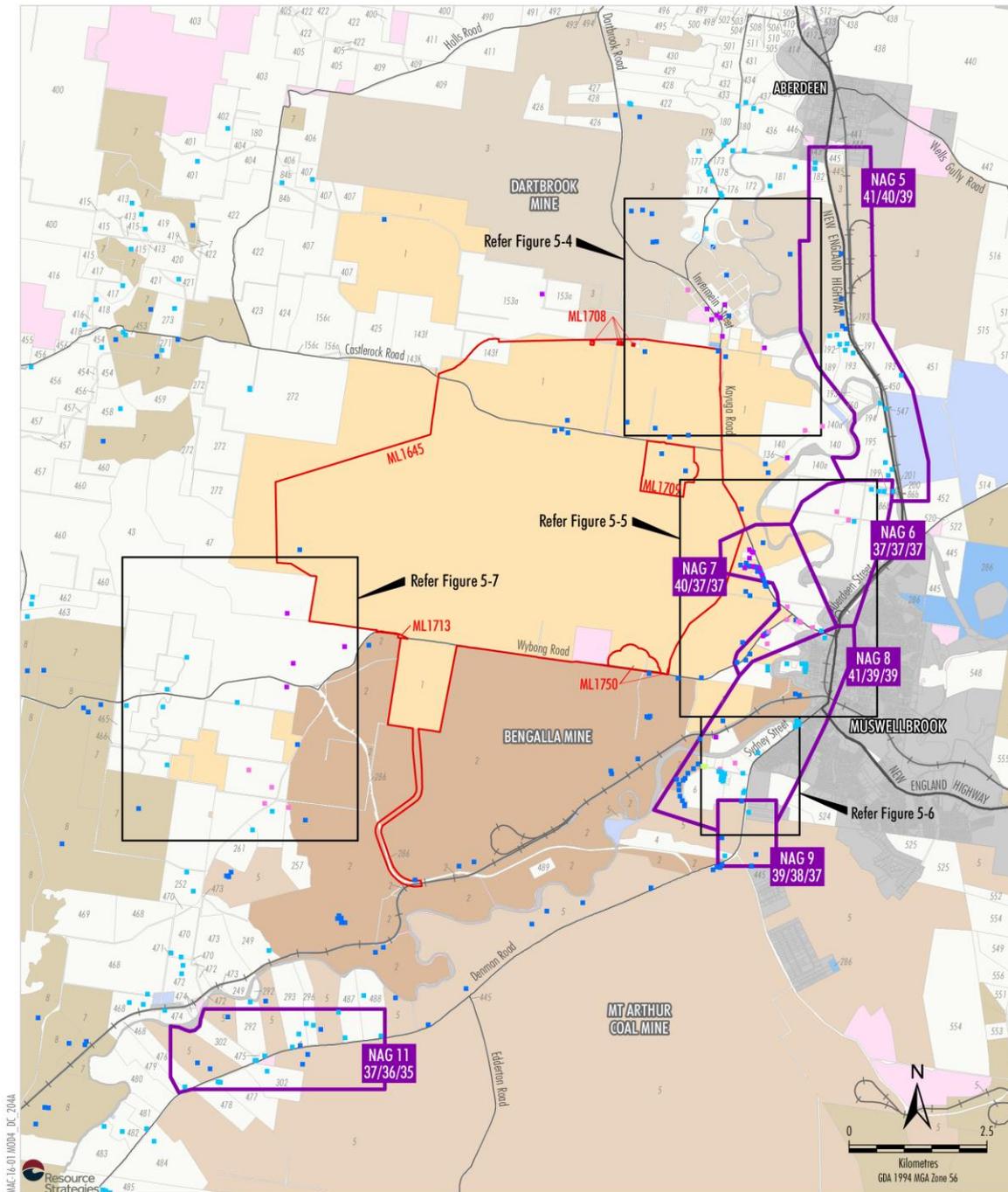
MACHEnergy
MOUNT PLEASANT OPERATION
Landholder List

Figure 5-1

Ref No	Landholder	Ref No	Landholder
451	GK & HM SANSON	506	SA & RP WITHERS
452	AJR MADDEN	507	NE GOLLAN
453	SC & ME DEVER	508	VG FOSTER
454	AP & PE MCMANUS	509	GJ DAY & J WATTUS
455	RP KEAST	510	YR & SG WILKS
456	GT KEAST	511	MJ & KM FARRELL
457	AM PRATT	512	GR & EA MEDHURST
458	HJ WRIGHT	513	DC & GJ WILTON
459	AJ & LL MARTIN	514	BROADCAST AUSTRALIA PTY LTD
460	RG GOWING	515	SB & JA REICHEL
462	SH JENNA	516	MP CLIFFORD
463	IV & CA INGOLD	517	FL COLEMAN & JC THOMAS
464	KL BALMER & JL SMITH	518	VM FRENCH
465	FN & WL GOOGE	520	JEHOVAH'S WITNESSES CONGREGATIONS
466	GT MCNEILL	522	BJ & VR PASSLOW
467	MWJ & LC WALTON	523	HG & MG COPE & PM & FP FARRELL
468	S.R. & J.W. LAWSON (LUNDISFARNE) PTY LTD	524	G GILLFEATHER
469	FN GOOGE	525	IR & F WEBBER
470	JJ & PJ BROWN	526	DL WICKS
471	PJ BROWN	527	DJ & GH CORK
472	JDM MARKHAM	528	AS CHICK
473	MR & M PEEL	529	TH HAMILTON & AM SMITH
474	AA & BT MEYER	530	SC & NU BULLARD & JM HARRISON
475	EJ & CA DENTON	531	GJ & EA MUNZENBERGER
476	LA & CA MACPHERSON	532	VL ROSE
477	MW TURNER	533	MJ BROWN
478	RL ANGUS	534	EE MARKS
479	HM WENG & FYP ZHU	535	GL & DN HORTON
480	HR & BC GRUGEON	536	LJ CUMMINS
481	RL WILKS	537	TJ D'HERVILLE
482	DJ PHILLIPS	538	KD POWER & T VERO
483	RW JONES	539	PH CURTAIN & CA SINGLETON
484	TR & KM PAULSEN	540	GRENTLE PTY LTD
485	PR & M BURGEMANN	541	JG HINDER & VG MATHEWS
486	GW & HM BLAKE	542	PE & GJ CHAPMAN
487	E RANKIN	543	KD CLOSE
488	E & WJ RANKIN	544	DS & RM NEWTON
489	ALIFORM PTY LTD	545	JA GREEN
490	RL GORDON	546	SJ SCOTT
491	PW GILLIGAN	547	LA & FK & G BRYANT
492	HM & CR GOODSSELL	548	WANARUAH LOCAL ABORIGINAL LAND COUNCIL
493	AW & JC YOUNG	549	TTW KEAST & RA SUMNER
494	BJ & K FLAHERTY	550	SR PAGE
495	DAVHAM NOMINEES PTY LTD	551	PA & SL RYAN
496	RW DAVIS	552	MT PERRAM
498	SCONE POLO CLUB INCORPORATED	553	MF & AV DOHERTY
499	RD & TL JONES	554	K CASBEN
500	GWRD HOLDINGS PTY LTD	555	GLENDOWER PASTORAL CO PTY LTD & GYARRAN PTY LTD
501	JW TAYLOR		
502	LC SCOWEN	556	CS JACOBSEN
503	JR GORDON	557	CJ & LE DUCK
504	MT O'CONNELL		
505	GC O'HARA		

Source: NSW Land & Property Information (2018)

Figure 5-2



- LEGEND**
- Mining Lease Boundary
 - Muswellbrook and Upper Hunter LEPs Zones B2, B5, IN1, SP2, R2, R5, RE1, RE2 and W1
 - Crown
 - Crown/State of NSW
 - The State of NSW
 - Muswellbrook Shire Council
 - Upper Hunter Shire Council
 - Mount Pleasant Controlled
 - Bengalla Controlled
 - Dartbrook Controlled
 - Mt Arthur Controlled
 - Other Mining/Resource Company Controlled
 - Privately Owned Land

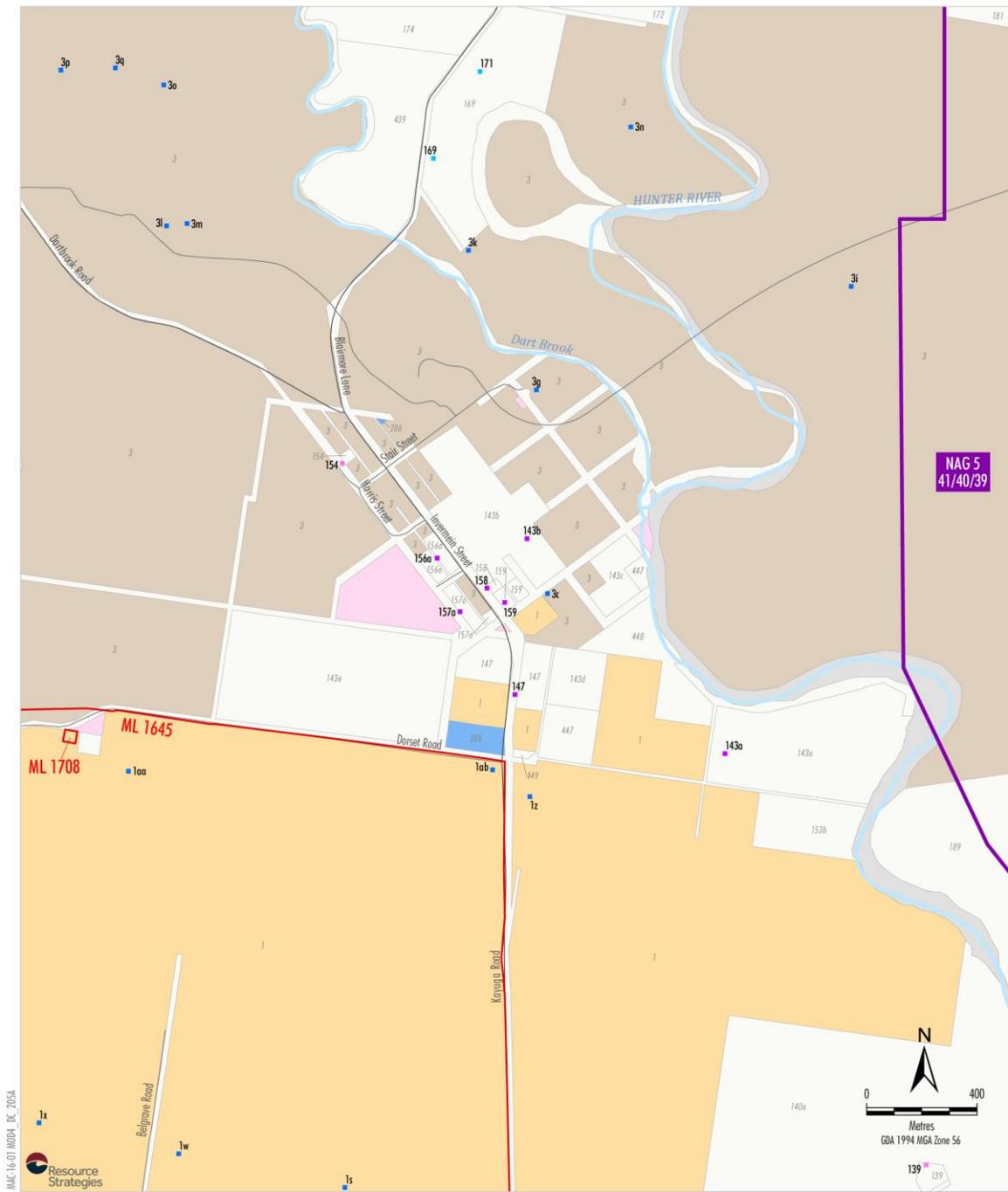
- Mine-owned Dwelling
- Privately-owned Residence - MPO Acquisition on Request
- Privately-owned Residence - MPO Mitigation/Acquisition on Request *
- Privately-owned Residence - MPO Mitigation on Request
- Other Privately-owned Residence
- Noise Assessment Group (NAG)
- Default NAG Noise Criteria for Day/Evening/Night

* MPO Mitigation on Request - rail noise. MPO is only required to acquire and/or install air quality mitigation measures at this property if acquisition and/or mitigation is not reasonably achievable under a separate approval for the Bengalla Mine.

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

MACHEnergy
MOUNT PLEASANT OPERATION
Land Ownership

Figure 5-3

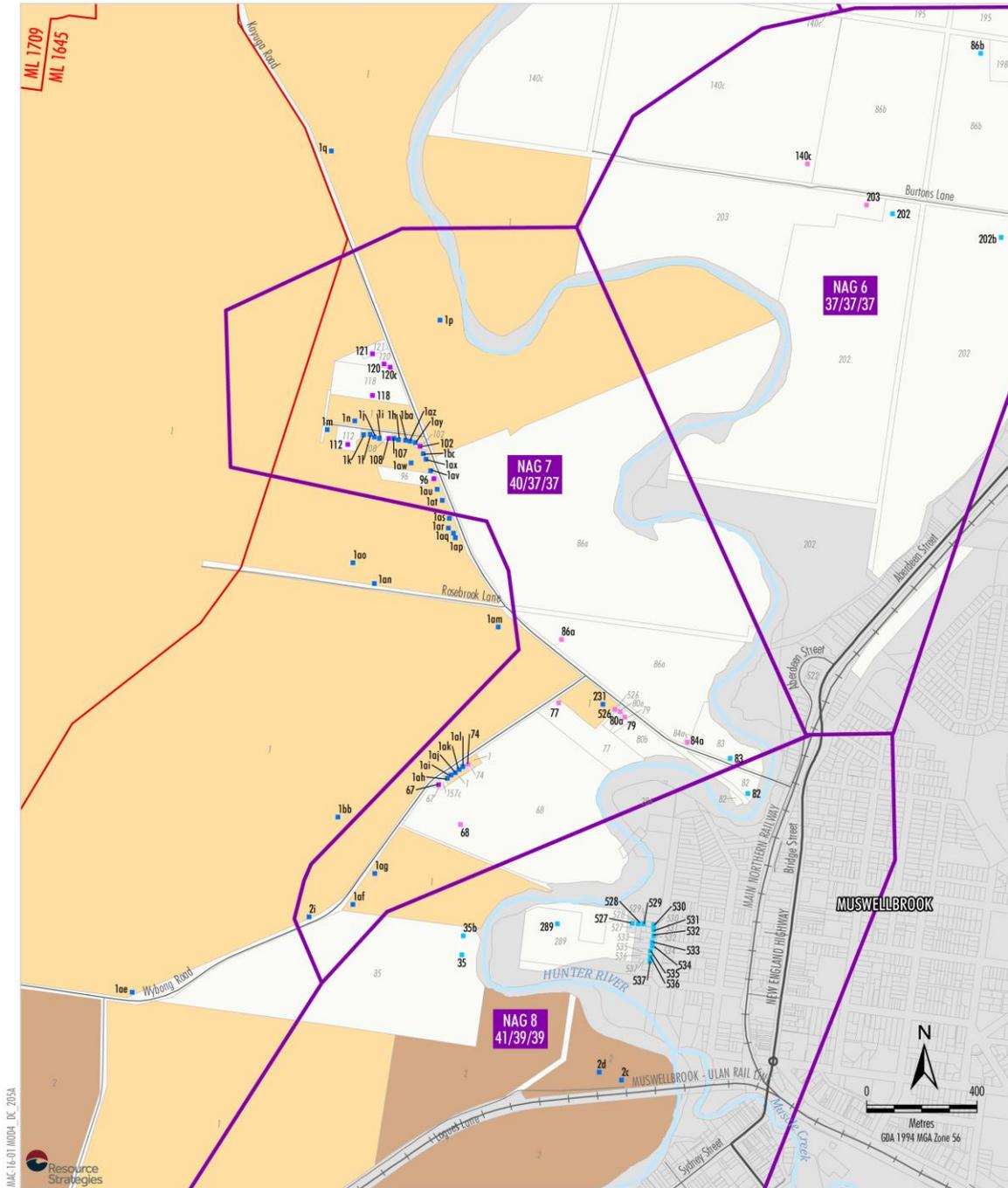


- MAC:16-01.MD04_DC_205A
Resource Strategies
- LEGEND**
- Mining Lease Boundary
 - Muswellbrook and Upper Hunter LEPS Zones B2, B5, IN1, SP2, R2, R5, RE1, RE2 and W1
 - Crown
 - Muswellbrook Shire Council
 - Mount Pleasant Controlled
 - Dartbrook Controlled
 - Privately Owned Land
 - Noise Assessment Group (NAG)
 - Default NAG Noise Criteria for Day/Evening/Night
- Mine-owned Dwelling
 - Privately-owned Residence - MPO Acquisition on Request
 - Privately-owned Residence - MPO Mitigation on Request
 - Other Privately-owned Residence

Source: NSW Land & Property Information (2016); NSW Division of Resources & Energy (2016); MACH Energy (2016)

MACHEnergy
MOUNT PLEASANT OPERATION
Land Ownership
Dartbrook Inset

Figure 5-4



MACH 16-01 MDD04_DC_2015A
 Resource Strategies

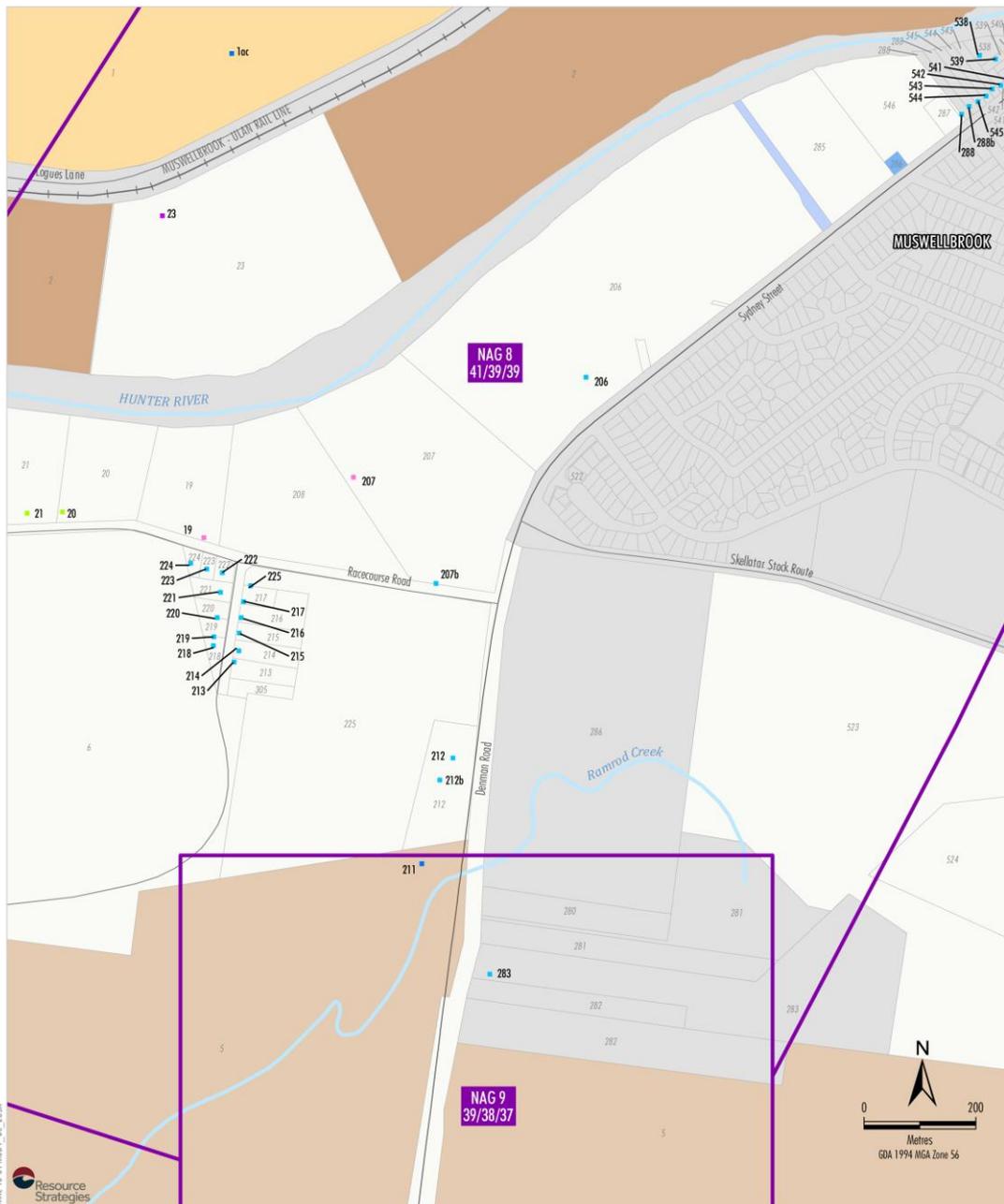
- LEGEND**
- Mining Lease Boundary
 - Muswellbrook and Upper Hunter LEPs Zones B2, B5, IN1, SP2, RZ, R5, RE1, RE2 and W1
 - Muswellbrook Shire Council
 - Mount Pleasant Controlled
 - Bengalla Controlled
 - Privately Owned Land
 - Noise Assessment Group (NAG)
 - Default NAG Noise Criteria for Day/Evening/Night

- Mine-owned Dwelling
- Privately-owned Residence - MPO Acquisition on Request
- Privately-owned Residence - MPO Mitigation on Request
- Other Privately-owned Residence

Source: NSW Land & Property Information (2016); NSW Division of Resources & Energy (2016); MACH Energy (2016)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Land Ownership
 Kayuga Road Inset

Figure 5-5



AMC 16-01 MOD4 DC 2015A
Resource Strategies

- LEGEND**
- Muswellbrook and Upper Hunter LEPs Zones B2, B5, INT, SP2, R2, R5, RE1, RE2 and W1
 - The State of NSW
 - Muswellbrook Shire Council
 - Mount Pleasant Controlled
 - Bengalla Controlled
 - Mt Arthur Controlled
 - Privately Owned Land
 - Noise Assessment Group (NAG)
 - 37/36/35 Default NAG Noise Criteria for Day/Evening/Night

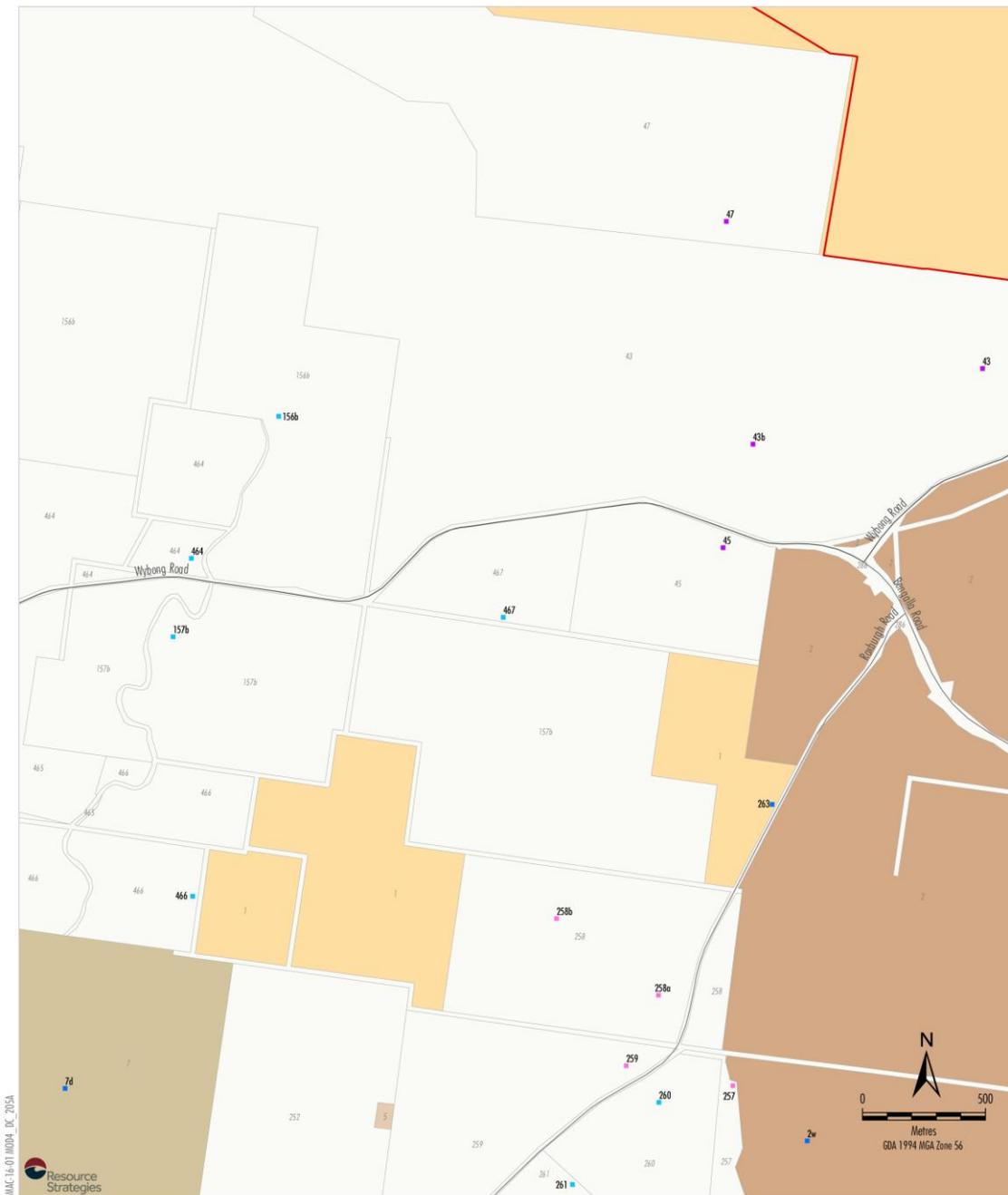
- Mine-owned Dwelling
- Privately-owned Residence - MPO Acquisition on Request
- Privately-owned Residence - MPO Mitigation/Acquisition on Request *
- Privately-owned Residence - MPO Mitigation on Request
- Other Privately-owned Residence

* MPO Mitigation on Request - rail noise. MPO is only required to acquire and/or install air quality mitigation measures at this property if acquisition and/or mitigation is not reasonably achievable under a separate approval for the Bengalla Mine.

Source: NSW Land & Property Information (2016); NSW Division of Resources & Energy (2016); MACH Energy (2016)

MACH Energy
MOUNT PLEASANT OPERATION
Land Ownership
Denman Road Inset

Figure 5-6



MACH-14-01 MPOA_02_2016A



- LEGEND**
- Mining Lease Boundary
 - Mount Pleasant Controlled
 - Bengalla Controlled
 - Mt Arthur Controlled
 - Other Mining/Resource Company Controlled
 - Privately Owned Land
-
- Mine-owned Dwelling
 - Privately-owned Residence - MPO Acquisition on Request
 - Privately-owned Residence - MPO Mitigation on Request
 - Other Privately-owned Residence
-
- Noise Assessment Group (NAG)
 - 37/36/35 Default NAG Noise Criteria for Day/Evening/Night

Source: NSW Land & Property Information (2016); NSW Division of Resources & Energy (2016); MACH Energy (2016)

MACH Energy
 MOUNT PLEASANT OPERATION
 Land Ownership
 Wybong Road Inset

Figure 5-7