



# MACHEnergy

Mount Pleasant Operation

A JOINT VENTURE WITH  
**JODA**  
Japan Coal Development Australia

## Executive Summary

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## EXECUTIVE SUMMARY

### ES1 BACKGROUND

The Mount Pleasant Operation is an open cut coal mine and associated infrastructure, located approximately 3 kilometres (km) north-west of Muswellbrook in the Upper Hunter Valley of New South Wales (NSW) (Figures ES-1 and ES-2).

MACH Mount Pleasant Operations Pty Ltd (ACN 625 627 723) is the manager of the Mount Pleasant Operation as agent for and on behalf of the unincorporated Mount Pleasant Joint Venture between MACH Energy Australia Pty Ltd (95 per cent [%] owner) and J.C.D. Australia Pty Ltd (5% owner)<sup>1</sup>.

This document is an Environmental Impact Statement (EIS) for the Mount Pleasant Optimisation Project (the Project).

**The Project proposes extraction of additional coal reserves within Mount Pleasant Operation Mining Leases (MLs) and an increase in the rate of coal extraction, without significantly increasing the total disturbance footprint.**

The extraction of additional Project coal reserves would be supported by the use and augmentation of existing and approved infrastructure at the Mount Pleasant Operation.

This EIS provides:

- a description of the Project;
- a summary of consultation undertaken;
- an assessment of potential impacts;
- the Project environmental management strategy, including continuation and extension of existing Mount Pleasant Operation environmental monitoring and mitigation measures; and
- an evaluation of the merits of the Project.

## ES2 APPROVAL PROCESS

### ES2.1 NEW SOUTH WALES

The Project is “State Significant Development” to which Part 4 of the NSW *Environmental Planning and Assessment Act, 1979* applies.

This EIS has been prepared to accompany a Development Application made for the Project, in accordance with Part 4 of the NSW *Environmental Planning and Assessment Act, 1979*.

This EIS considers the potential environmental impacts of the Project in accordance with the Secretary’s Environmental Assessment Requirements (SEARs) issued by the NSW Department of Planning, Industry and Environment, including input from the Commonwealth Department of Agriculture, Water and the Environment.

MACH is seeking development consent for the Project from the NSW Minister for Planning and Public Spaces, or the Independent Planning Commission.

### ES2.2 COMMONWEALTH

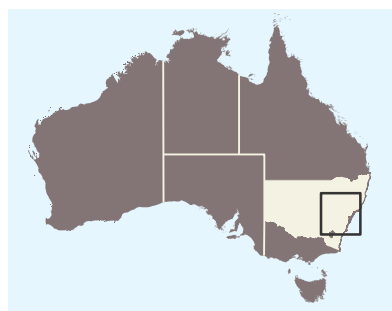
MACH referred the relevant elements of the Project to the Commonwealth Minister for the Environment and Energy in July 2020 (EPBC 2020/8735). A delegate of the Commonwealth Minister determined on 26 August 2020 that the referred elements comprise a “controlled action” and, therefore, require approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999*.

Therefore, this EIS provides an assessment of potential impacts (in accordance with the SEARs) with respect to the following *Environment Protection and Biodiversity Conservation Act, 1999* controlling provisions for the Project:

- *Environment Protection and Biodiversity Conservation Act, 1999* listed threatened species and communities; and
- water resources.

The proposed action is to be assessed pursuant to the bilateral agreement between the Commonwealth of Australia and the State of NSW relating to environmental assessment.

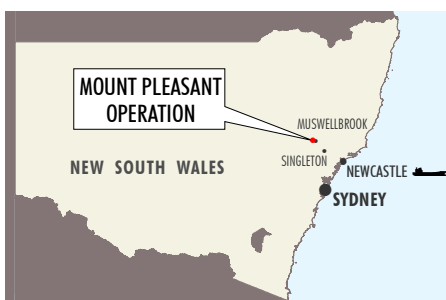
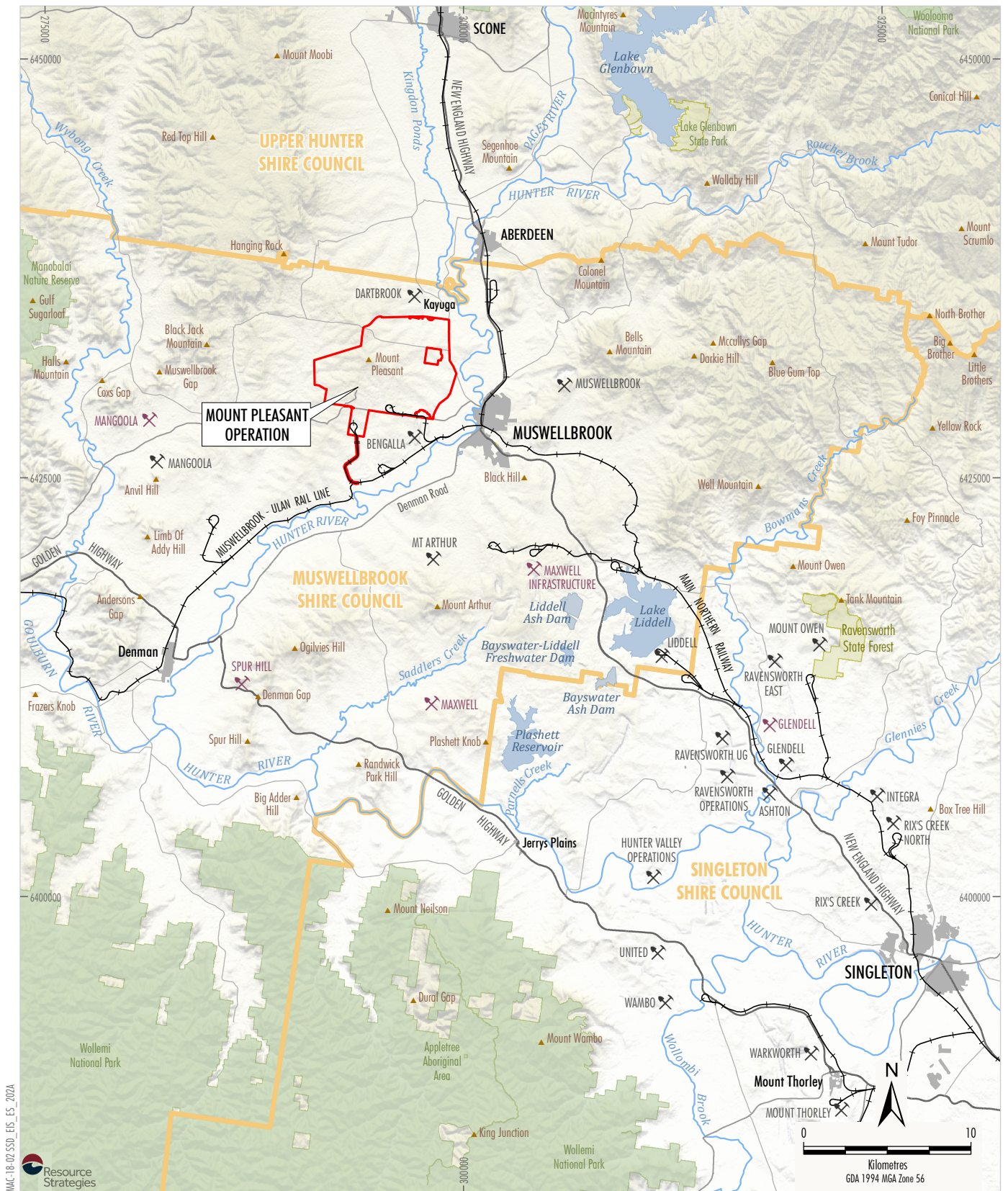
<sup>1</sup> Throughout this Environmental Impact Statement, MACH Mount Pleasant Operations Pty Ltd and the unincorporated Mount Pleasant Joint Venture will be referred to as MACH.



**MACHEnergy**  
 MOUNT PLEASANT OPTIMISATION PROJECT  
 Regional Location

Figure ES-1





**MACHEnergy**  
MOUNT PLEASANT OPTIMISATION PROJECT  
Project Location

Figure ES-2



## ES2.3 DETERMINATION

Following public exhibition of this EIS by the Department of Planning, Industry and Environment, submissions from the community and government agencies will be addressed by MACH.

The Project will then be determined by the NSW Minister for Planning and Public Spaces or the Independent Planning Commission under the NSW *Environmental Planning and Assessment Act, 1979*.

Following completion of the NSW assessment process, the Project will then also be determined by the Commonwealth Minister under the *Environment Protection and Biodiversity Conservation Act, 1999*.

## ES3 THE PROJECT

### ES3.1 EXISTING APPROVED MOUNT PLEASANT OPERATION

#### *Mining Operations*

The Mount Pleasant Operation produces thermal coal using open cut mining methods and has an approved operational capacity of up to 10.5 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal until 22 December 2026 under Development Consent DA 92/97 (as modified).

The approved mine includes a Coal Handling and Preparation Plant (CHPP) and a rail loop and spur, conveyor and load-out facility connecting the mine to the Muswellbrook–Ulan Rail Line.

The approximate extents of the approved surface development and infrastructure area at the Mount Pleasant Operation are shown on Figure ES-3.

Major components include:

- open cuts (North Pit and South Pit);
- Eastern, South West and North West Out-of-Pit Emplacements;
- water management infrastructure;
- CHPP and coal stockpiles; and
- Fines Emplacement Areas.

Transport of product coal to the Port of Newcastle for export, or to domestic customers for use in electricity generation, is undertaken by rail.

Open cut mining, the handling and processing of ROM coal at the Mount Pleasant Operation CHPP, and the rail transport of coal products is undertaken 24 hours per day, seven days per week.

#### *Proximal Rural Residences*

Previous assessments for the Mount Pleasant Operation identified a number of privately-owned rural residences that were predicted to exceed applicable noise or air quality criteria.

The privately-owned rural residences that were predicted to exceed the applicable criteria were generally located on the Hunter River floodplain between the Mount Pleasant Operation and Muswellbrook, as well as rural properties to the north, north-east and south-west.

These predicted exceedances were reflected in noise or air quality conditions within Development Consent DA 92/97, including conditions that provide acquisition upon request rights for receivers with 'significant' predicted impacts, mitigation upon requested rights for 'moderate' predicted impacts and specific noise criteria for receivers with 'negligible' predicted impacts.

Development Consent DA 92/97 currently lists some 30 privately-owned rural residences or parcels of land with acquisition upon request rights for significant noise or noise and air quality impacts, 20 privately-owned rural residences with mitigation upon request rights for moderate noise impacts and 12 privately-owned rural residences with specific noise criteria for negligible noise impacts.

An overview of relevant land ownership in the vicinity of the Mount Pleasant Operation is provided on Figure ES-4, including current rights under Development Consent DA 92/97 for adjacent private rural residences.

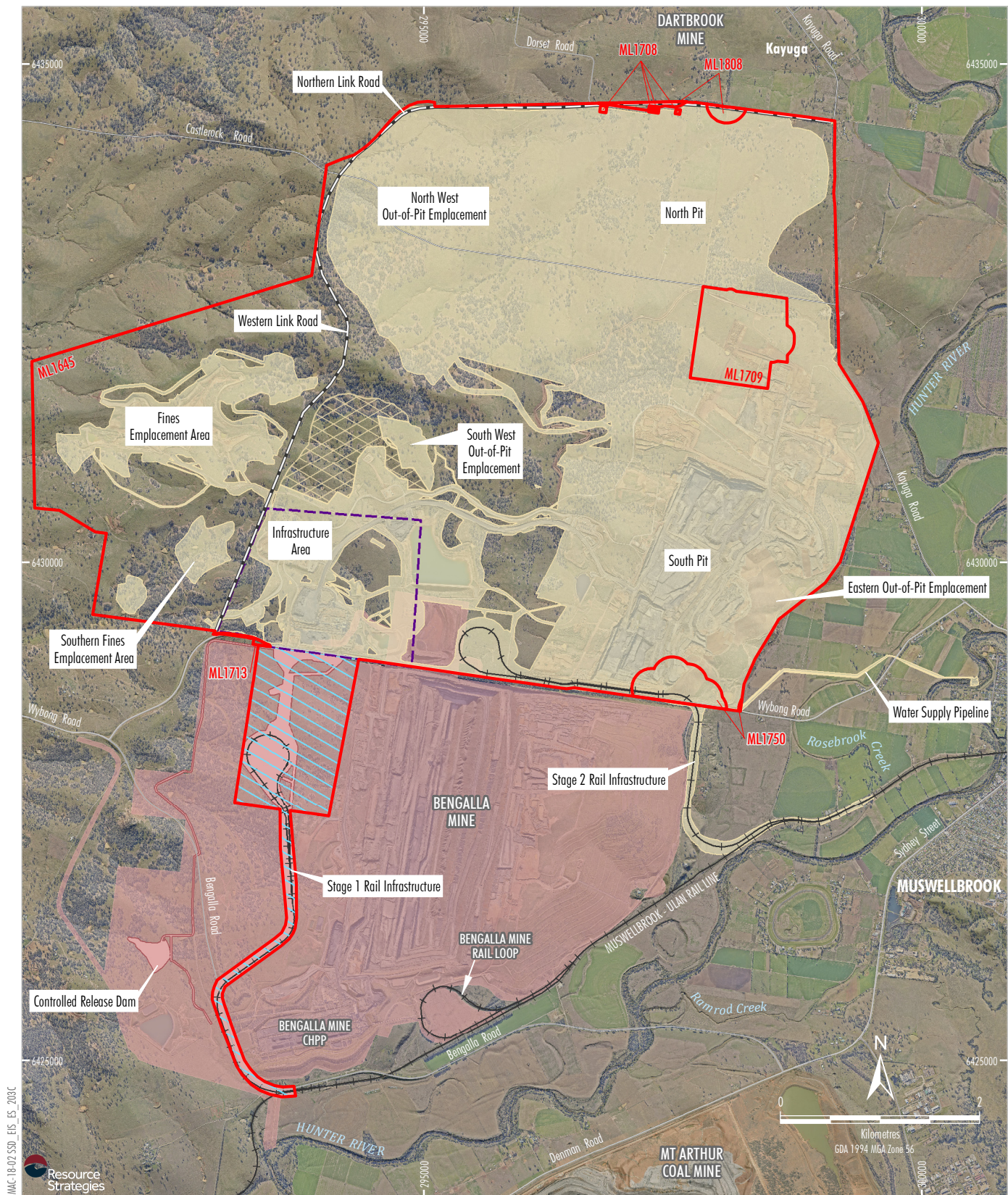
#### *Biodiversity Offset*

The Mount Pleasant Operation Development Consent DA 92/97 was granted in December 1999, prior to the implementation of offsetting policies in NSW. While no biodiversity offsets were required under Development Consent DA 92/97, biodiversity offsets were established for the existing/approved Mount Pleasant Operation under a Commonwealth approval (EPBC 2011/5795).

**The Mount Pleasant Operation has already offset the biodiversity impacts of the approved mine, with the establishment of major biodiversity offsets of some 12,875 hectares on a number of properties.**

These properties (Figure ES-5) have an area of approximately 15,590 hectares, and are managed by MACH in accordance with an approved Offset Management Plan.

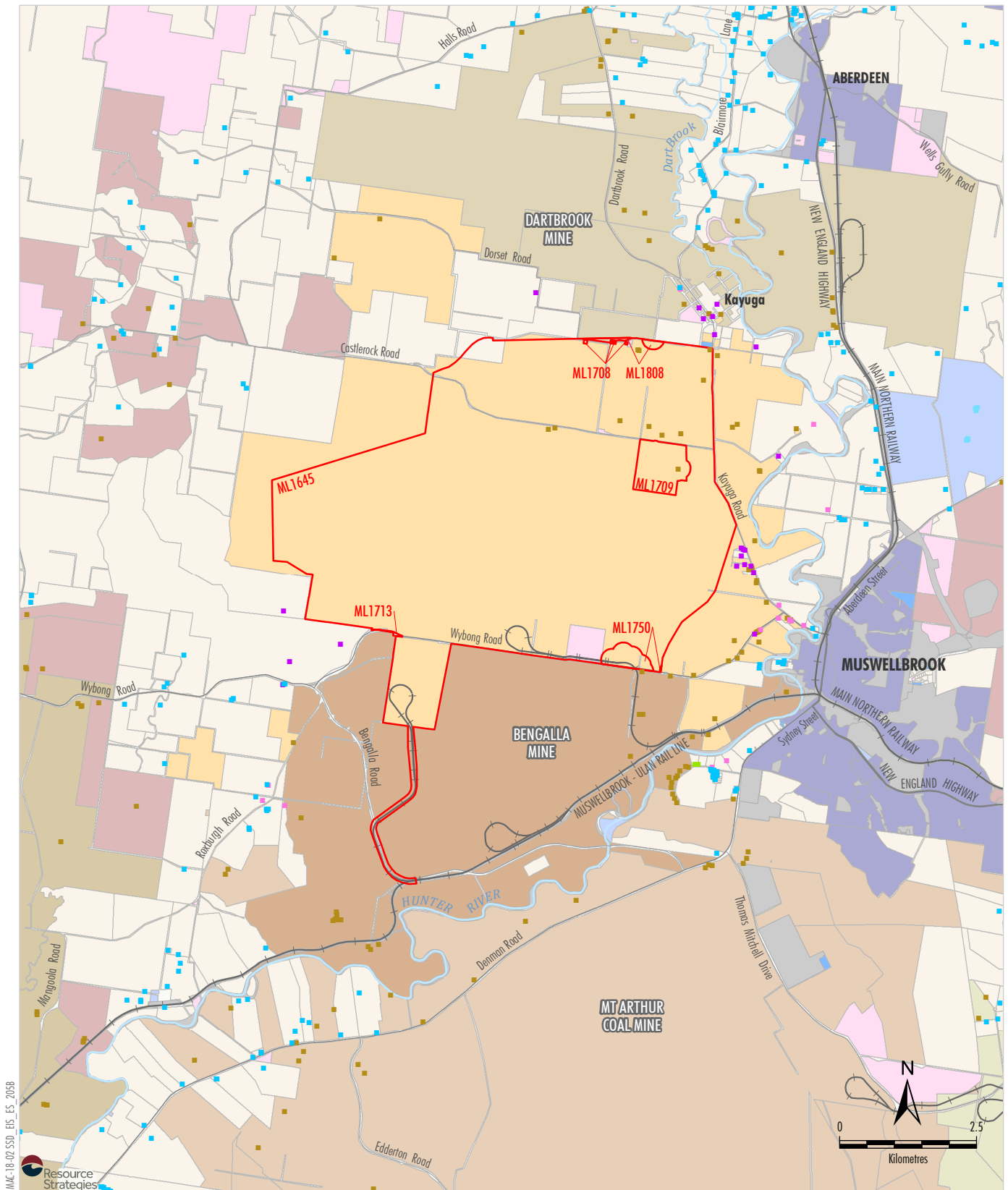




**MACHEnergy**  
 MOUNT PLEASANT OPTIMISATION PROJECT  
 General Arrangement of the  
 Approved Mount Pleasant Operation

**Figure ES-3**





AMC-18-02 SSD\_BS\_ES\_2058  
Resource Strategies

- LEGEND**
- Mining Lease Boundary (Mount Pleasant Operation)
  - Mount Pleasant-controlled
  - Bengalla-controlled
  - Dartbrook-controlled
  - Mangoola-controlled
  - Muswellbrook Coal-controlled
  - Mt Arthur-controlled
  - Other Mining/Resource-controlled
  - Crown
  - The State of NSW
  - Muswellbrook Shire Council
  - Upper Hunter Shire Council
  - Privately-owned Land
  - Muswellbrook and Upper Hunter LEP Zones B2, B5, R1, R5
  - Muswellbrook and Upper Hunter LEP Zones IN1, SP2, RE1, RE2, W1

Category of Rural Residence under DA92/97

- Mine-owned
- Privately-owned - Acquisition on Request
- Privately-owned - Mitigation on Request
- Privately-owned - Mitigation/Acquisition on Request\*
- Other Privately-owned

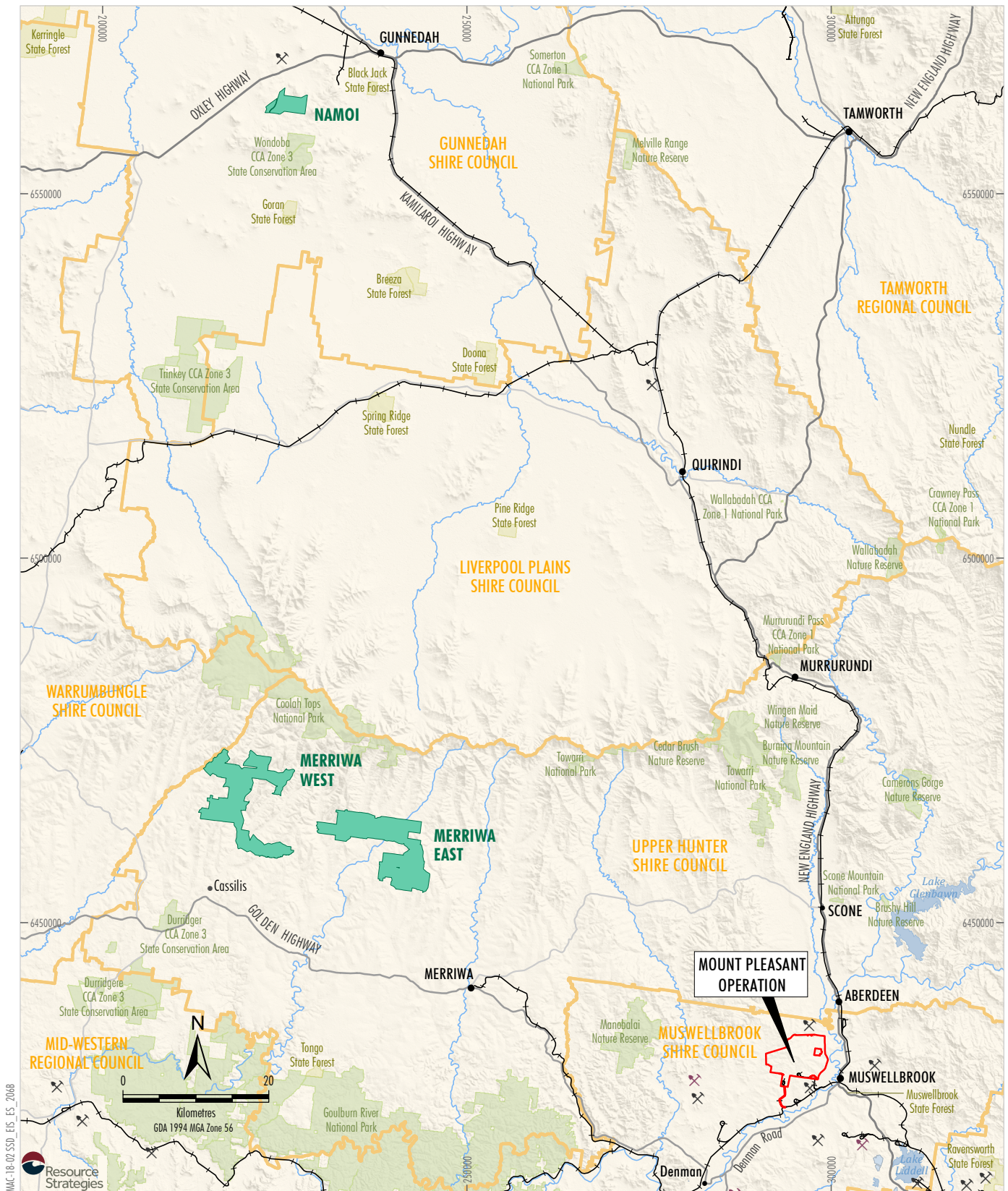
\* Mitigation on Request - rail noise/Acquisition on Request - air quality.  
MACH is only required to acquire and/or install air quality mitigation measures at this property if not reasonably achievable under a separate approval for the Bengalla Mine.

Source: MACH (2020); NSW Spatial Services (2020)

**MACHEnergy**  
MOUNT PLEASANT OPTIMISATION PROJECT  
Land Ownership Overview

**Figure ES-4**





- LEGEND
- Mining Operation
  - Proposed Mining Operation (Application Lodged)
  - Local Government Area
  - State Forest
  - National Parks and Wildlife Estate
  - Mining Lease Boundary (Mount Pleasant Operation)
  - Existing Biodiversity Management Area (including Offset Areas)

Source: MACH (2020); NSW Spatial Services (2020)

**MACHEnergy**  
MOUNT PLEASANT OPTIMISATION PROJECT  
Existing Biodiversity Management Areas

Figure ES-5

**ES3.2 PROJECT SUMMARY**

The Project would include the following development:

- increased open cut extraction within Mount Pleasant Operation MLs by mining of additional coal reserves, including lower coal seams in North Pit;
- a staged increase in extraction, handling and processing of ROM coal up to 21 Mtpa (i.e. progressive increase in ROM coal mining rate from 10.5 Mtpa over the Project life);
- staged upgrades to the existing CHPP and coal handling infrastructure to facilitate the handling and processing of additional coal;
- rail transport of up to approximately 17 Mtpa of product coal to domestic and export customers;
- upgrades to workshops, electricity distribution and other ancillary infrastructure;
- existing infrastructure relocations to facilitate mining extensions (e.g. local roads, powerlines and water pipelines);
- construction and operation of new water management and water storage infrastructure in support of the mine;
- additional reject dewatering facilities to allow co-disposal of fine rejects with waste rock as part of ROM waste rock operations;
- development of an integrated waste rock emplacement landform that incorporates geomorphic drainage design principles for hydrological stability, and varying topographic relief to be more natural in exterior appearance;
- construction and operation of new ancillary infrastructure in support of mining;
- extension to the time limit on mining operations to 22 December 2048;
- an average operational workforce of approximately 600 people, with a peak of approximately 830 people;
- ongoing exploration activities; and
- other associated infrastructure, plant, equipment and activities.

An indicative Project general arrangement is provided on Figure ES-6.

Table ES-1 provides a comparative summary of the activities associated with the Project compared to the approved Mount Pleasant Operation.

**ES3.3 PROJECT CONSTRUCTION**

The Project would extract coal over a period of approximately 26 years. The main Project construction activities would include:

- development of the Northern Link Road (noting two alternative alignment options are evaluated in this EIS);
- upgrades to the existing CHPP and coal handling infrastructure to facilitate the handling and processing of additional coal; and
- progressive Fines Emplacement Area raises over the life of the mine.

Of these, the upgrades at the Mount Pleasant Operation CHPP would be the largest construction activities and would be staged as follows (Figure ES-7):

- the two existing Coal Preparation Plant modules would be augmented, with one additional module constructed in approximately Years 4 and 5 (Stage 2a) and the second additional module constructed in approximately Years 10 and 11 (Stage 2b);
- the existing ROM hopper would be augmented by constructing at least one additional ROM hopper;
- CHPP fine reject dewatering facilities would be constructed;
- additional product stockpiles would be developed; and
- the main ROM coal stockpile would be expanded.

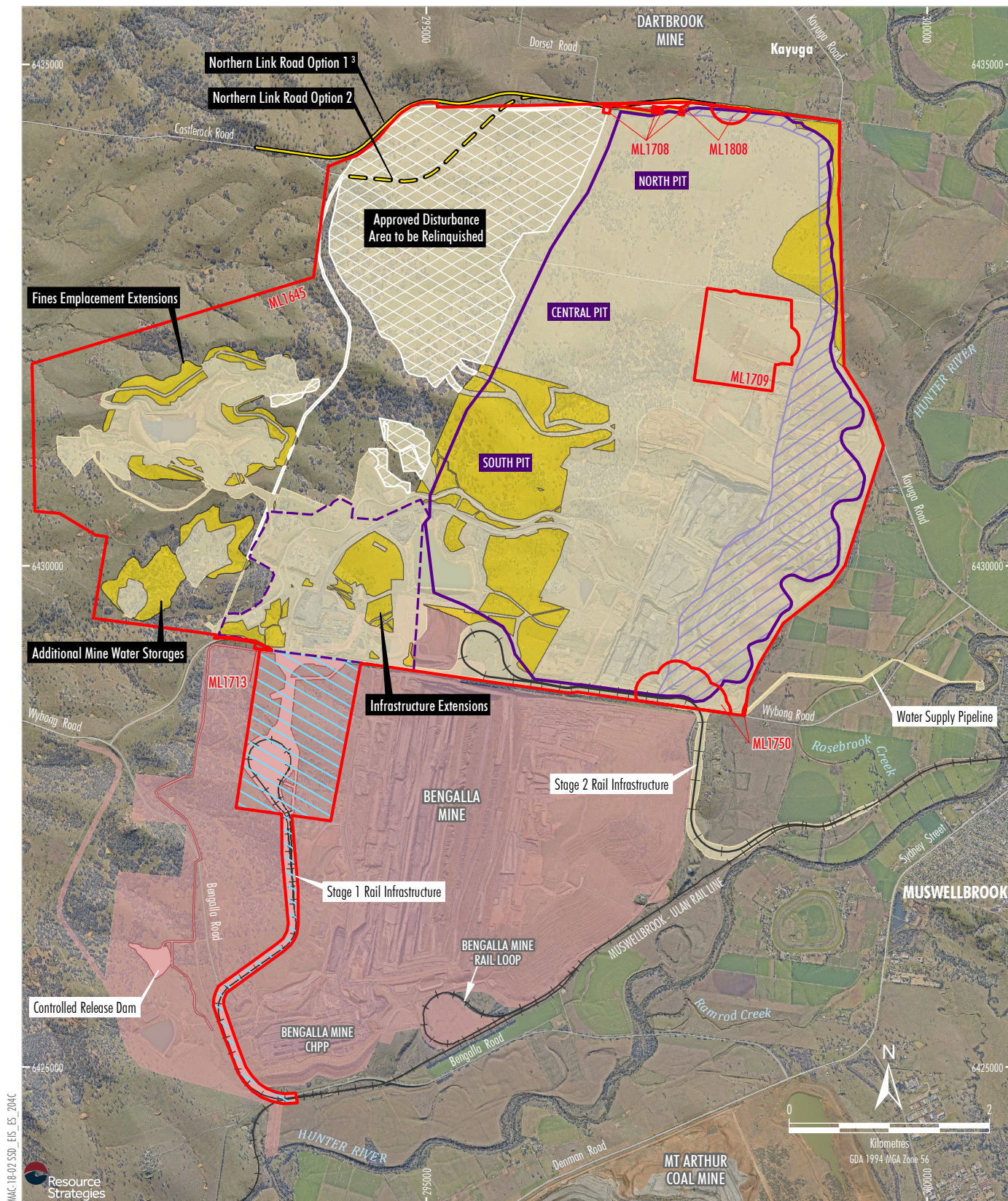
Construction activities located within the Mount Pleasant Operation MLs may be undertaken up to 24 hours per day, seven days per week.

Development of the Northern Link Road would generally be limited to 7.00 am to 6.00 pm Monday to Sunday.

To provide future infrastructure flexibility and allow conservatism with respect to the ultimate area of Project land disturbance, construction could occur anywhere within the revised infrastructure area envelope (Figure ES-6).

In practice, it is anticipated that some significant undisturbed areas could remain between Project infrastructure elements, as currently occurs at the Mount Pleasant Operation (Figure ES-7).





#### LEGEND

- Existing Mine Elements
- Mining Lease Boundary (Mount Pleasant Operation)
- Approximate Extent of Existing/Approved Surface Development (DA92/97)<sup>1</sup>
- 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)<sup>1</sup>
- Additional/Revised Project Elements
- Approved Disturbance Area to be Relinquished<sup>2</sup>
- Approximate Additional Disturbance of Project Extensions<sup>1</sup>
- Northern Link Road Option 1 Centreline<sup>3</sup>
- Northern Link Road Option 2 Centreline
- Approximate Extent of Project Open Cut and Waste Rock Emplacement Landforms
- Approximate Extent of Project Out-of-Pit Waste Emplacement
- Revised Infrastructure Area Envelope

#### NOTES

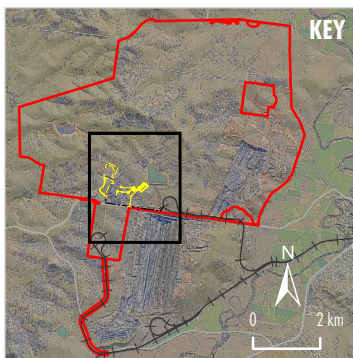
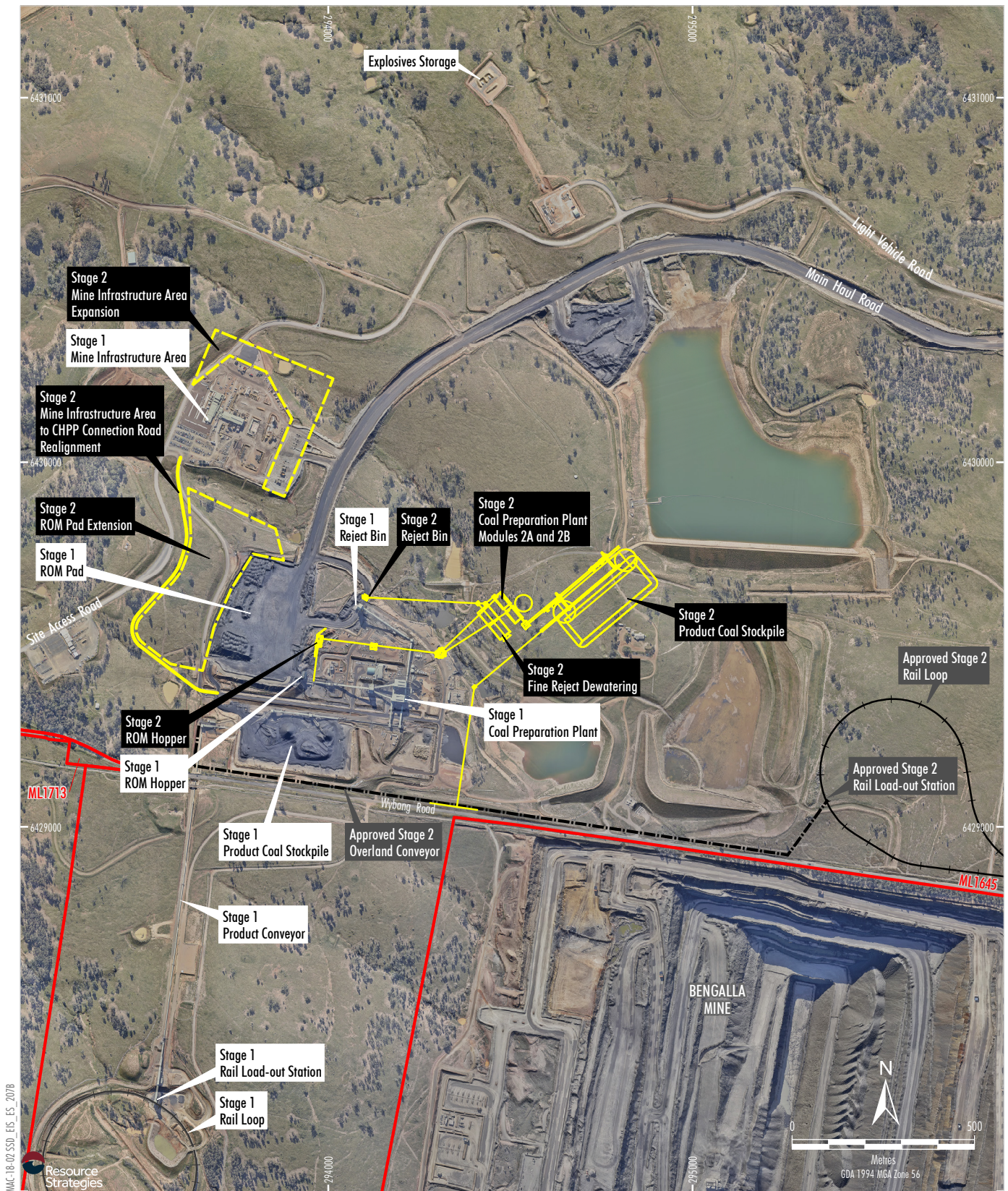
1. Excludes some incidental Project components such as water management infrastructure, access tracks, topsoil stockpiles, power supply, temporary offices, other ancillary works and construction disturbance.
2. Subject to detailed design of Northern Link Road alignment.
3. Preferred alignment subject to landholder access.

Source: MACH (2020); NSW Spatial Services (2020); Department of Planning and Environment (2016) Orthophoto: MACH (2020)

**MACHEnergy**  
MOUNT PLEASANT OPTIMISATION PROJECT  
Project General Arrangement

**Figure ES-6**





**LEGEND**  
 Mining Lease Boundary  
 (Mount Pleasant Operation)

Source: MACH (2020); NSW Spatial Services (2020)  
 Orthophoto: MACH (July 2020)

**MACHEnergy**  
 MOUNT PLEASANT OPTIMISATION PROJECT  
 Indicative Materials Handling and  
 Mine Infrastructure Area Layout

**Figure ES-7**



**Table ES-1**  
**Summary Comparison of the Approved Mount Pleasant Operation and the Project**

Component	Approved Mount Pleasant Operation DA 92/97	Project
Mine Life	Originally 21 years from the date of grant of Development Consent DA 92/97 (22 December 2020). Extended to 22 December 2026 (Modification 3).	Until 22 December 2048 (i.e. extension of 22 years, allowing for 31 years of mining operations overall).
Mining Method	Open cut mining method incorporating truck and excavator and dragline operations (dragline not envisaged prior to 2026).	Unchanged. Use of dragline subject to feasibility studies.
Resource and Pit Floor	Extraction of Wittingham Coal Measures to the Edderton Seam floor in South Pit and Vaux Seam floor in North Pit.	Extraction of Wittingham Coal Measures to the Edderton Seam floor throughout (deepening North Pit by approximately 85 metres).
ROM Coal Production	ROM coal production at a rate of up to 10.5 Mtpa.	ROM coal production at a rate of up to 21 Mtpa.
Waste Rock Production	Waste rock removal at a rate of up to approximately 53 million bank cubic metres (Mbcm) per annum.	Waste rock removal at a rate of up to approximately 89 Mbcm per annum.
Waste Emplacements	Waste rock emplaced both in-pit, and in the Eastern, South West <sup>^</sup> and North West Out-of-Pit Emplacement areas (elevations up to approximately 320 metres Australian Height Datum [m AHD]).	Relinquishment of the North West Out-of-Pit Emplacement area. Waste rock emplaced both in-pit and in the Eastern Out-of-Pit Emplacement area. Emplacement elevations increasing to above 360 m AHD.
Coal Beneficiation	Beneficiation of ROM coal in the on-site CHPP.	Unchanged. Staged upgrades to the CHPP to allow the handling and processing of additional ROM coal.
Coal Transport	Coal transported along the Muswellbrook–Ulan Rail Line and then the Main Northern Railway to the Port of Newcastle for export, or to domestic customers.	Unchanged.
	An average of three, and a maximum of nine, laden trains per day leaving the mine.	An average of 6.5, and a maximum of 10, laden trains per day leaving the mine at peak.
Coal Rejects	Coarse rejects are placed within mined out voids and out-of-pit emplacements, and used to build walls of the Fines Emplacement Area. Fine rejects are stored in the Fines Emplacement Area.	As approved, plus fine reject dewatering infrastructure would also be installed on new Coal Processing Plant modules so dewatered fine rejects can be co-disposed with coarse rejects.
Water Supply and Disposal Methods	Water requirements are met from pit groundwater inflows, catchment runoff and make-up water from the Hunter River and the Bengalla or Dartbrook Mines. Surplus water will be discharged in compliance with the Hunter River Salinity Trading Scheme and Environment Protection Licence 20850.	Unchanged.
Approximate Disturbance Area	Approximately 2,800 hectares of surface development, exclusive of some incidental components such as water management infrastructure.	Unchanged. Relinquishment Area (approximately 497 – 510 hectares) compensates for and exceeds Project additional disturbance areas (approximately 486 – 506 hectares). <sup>#</sup>
Final Landform and Land Use	A final landform that incorporates macro-relief and micro-relief concepts so it does not look “engineered” when viewed from Muswellbrook. One final void would remain if mining was to cease in 2026. The full 21-year mine life indicative final landform includes two final voids associated with the North Pit and South Pit open cuts and a smaller third final void.	Development of an integrated waste rock emplacement landform that incorporates geomorphic drainage design principles for hydrological stability, and varying topographic relief to be more natural in exterior appearance. One final void would remain.
	Rehabilitation with a mixture of pasture and forest, with increased revegetation with native tree species on the eastern face of the final landform.	Unchanged.
Hours of Operation	Operations are approved to be undertaken 24 hours per day, seven days per week.	Unchanged.
Operational Workforce	Average operational workforce throughout the life of the mine of approximately 330 people, and an estimated peak of approximately 380* people.	An average workforce of approximately 600 people, with a peak of approximately 830 full-time equivalent operational personnel (including MACH staff and on-site contractors).
Construction Workforce	Construction workforce is expected to peak at approximately 350 people.	Construction workforce may have short-term peaks of up to 500 people.

<sup>^</sup> Parts of the South West Out-of-Pit Emplacement were relinquished in previous Modifications 3 and 4.

<sup>#</sup> Relinquishment and additional disturbance areas would vary, based on the Northern Link Road option selected.

\* As at mid-2020, the full-time equivalent operational workforce of the Mount Pleasant Operation was approximately 440 people.

### ES3.4 MINING OPERATIONS

The open cuts for the Project would comprise three named open cuts (South Pit, Central Pit and North Pit) (Figure ES-6).

The upper and middle coal seams of the Wittingham Coal Measures (i.e. the Warkworth, Mt Arthur, Piercefield, Vaux, Broonie, Bayswater, Wynn and Edderton Seams) would be recovered in each pit.

It is estimated that approximately 406 Mt of ROM coal would be mined over the life of the Project.

**Increases in coal production would be staged to provide sufficient time to establish the Eastern Out-of-Pit Emplacement and allow the focus of mining to move westwards (away from Muswellbrook) prior to peak production occurring.**

Open cut mining activities and associated mobile equipment movements would continue to be undertaken 24 hours per day, seven days per week.

### ES3.5 COAL PROCESSING AND TRANSPORT

ROM coal produced at the open cuts at the Mount Pleasant Operation would continue to be transported via internal haul roads to the CHPP for processing. Project processing and production rates would be determined by the requirements of the coal market, product specifications and blending requirements.

Product coal produced from the CHPP and bypass coal would continue to be stockpiled prior to being reclaimed and loaded to trains at the approved Stage 2 rail load-out facility. Product coal would continue to be transported on the Muswellbrook–Ulan Rail Line and Main Northern Railway to the Port of Newcastle for export, or to domestic customers for use in power generation.

As a component of the Project, the increase in transport of product coal from approximately 8.5 Mtpa to up to approximately 17 Mtpa would require a corresponding increase in the currently approved train movements. Product coal would be loaded onto trains 24 hours per day, seven days per week.

### ES3.6 COAL REJECT MANAGEMENT

The disposal of coal reject material produced at the CHPP would continue to be managed in accordance with a Fines Emplacement Plan and the relevant Mining Operations Plan.

Coarse reject material would continue to be hauled from the CHPP to the Eastern Out-of-Pit Emplacement or in-pit for disposal.

Following commissioning of the Stage 2 CHPP reject dewatering facilities, a portion of fine rejects would be dewatered and co-disposed with coarse rejects as part of ROM waste emplacement activities. Fine reject material would also continue to be deposited in the Fines Emplacement Area.

### ES3.7 WATER MANAGEMENT

A key change to the water management system would be the development of additional mine water storages west of the Infrastructure Area Envelope (Figure ES-6).

These mine water storages would be located where a second fines emplacement area was originally assessed and approved for the Mount Pleasant Operation (Figure ES-3) and the first dam (Mine Water Dam [MWD] 2) would be developed early in the Project life to increase on-site water storage capacity.

The existing MWD would ultimately be mined-through as part of the Project and would be replaced by MWD3, when required.

The majority of Mount Pleasant Operation make-up water supply requirements to date have been met by dewatering the open cut mining areas, recycling water from the Fines Emplacement Area and from licensed extraction from the Hunter River. The installation of reject dewatering facilities for the Project Stage 2 CHPP is expected to significantly increase on-site water recycling.

Consistent with the approved Mount Pleasant Operation, MACH may also source excess mine water from the adjoining mines (i.e. Dartbrook and Bengalla Mines) for use on-site, subject to obtaining all necessary secondary approvals, in order to reduce the make-up water demand from the Hunter River over the life of the Project.



### ES3.8 INFRASTRUCTURE AND FACILITIES

The existing infrastructure and services at the Mount Pleasant Operation, and infrastructure and services to be constructed in support of the approved mine (e.g. the Stage 2 rail infrastructure) would continue to be utilised throughout the life of the Project. The existing and approved infrastructure would be augmented throughout the life of the Project.

The Mine Infrastructure Area would be expanded (Figure ES-7) to accommodate the additional mobile equipment and facilities that would be required as the mining rate increases.

### ES3.9 WORKFORCE

The approved Mount Pleasant Operation has an estimated average workforce of approximately 330 people and an estimated peak of approximately 380 people<sup>2</sup>.

**The workforce required for the Project would increase to an estimated average of approximately 600 people, with a peak of approximately 830 full-time equivalent operational personnel anticipated (including MACH staff and on-site contractor personnel).**

The proposed staging of the ROM coal production rate would result in a gradual build-up in operational employment at the Project, with the peak projected in 2041. This would allow sufficient time for service providers to plan for any associated minor changes in regional population, and may also offset other coal mine closures and ramp-downs that are expected to occur over the life of the Project.

Construction activities would be undertaken at various times over the life of the Project and construction workforces would vary with monthly peaks of approximately:

- 100 people in Year 3 (including for development of the Northern Link Road);
- 400 people in Years 4 and 5 (including construction of the Stage 2a CHPP infrastructure components); and
- 300 people in Years 10 and 11 (including for construction of the Stage 2b CHPP infrastructure components).

### ES3.10 FINAL VOID

A final void is a depression below the natural ground level that remains at the completion of mining. The originally approved Mount Pleasant Operation final landform includes two final voids in the North Pit and South Pit open cuts, and a smaller third final void located in a low-lying area between the two larger final voids.

However, for the Project, a single final void would remain in the western portion of the site at the cessation of mining (Figure ES-8).

MACH has designed the final Project final landform to be safe, geotechnically stable and minimise the catchment reporting to the void, whilst still maintaining geomorphological design concepts. A water balance of the final void has been prepared and demonstrates that the water level in the final void would remain significantly below the crest (i.e. the void would not spill) (Figure ES-8).

### ES3.11 INTERACTIONS WITH NEARBY MINES

MACH will continue to consult and work closely with Bengalla Mine and Dartbrook Mine regarding potential interactions between these operations and the Project, to maximise cooperation and efficiencies.

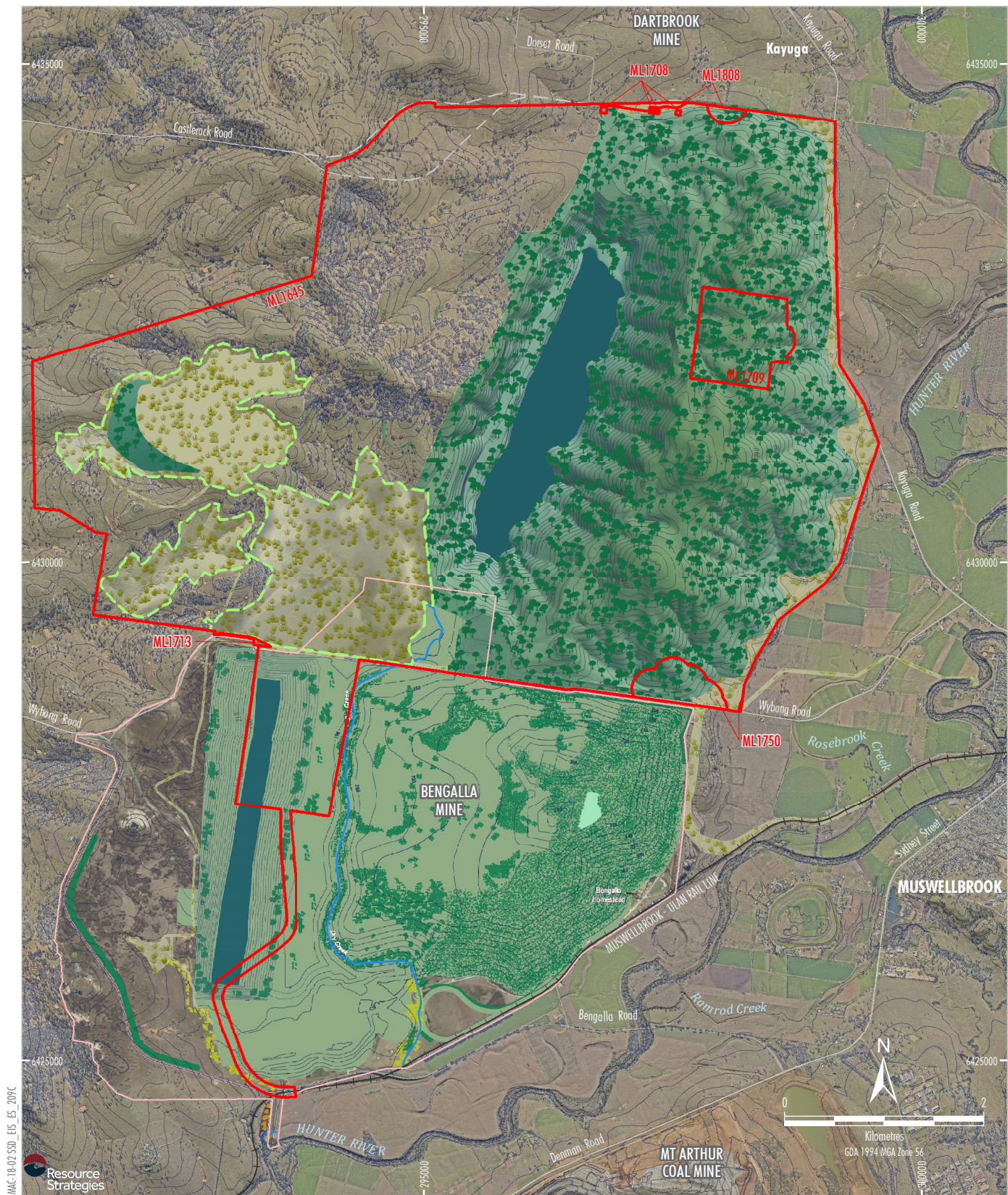
Key potential interactions are anticipated to include:

- sharing excess mine water between the operations, such as extraction of excess water from the Dartbrook Mine for beneficial re-use at the Mount Pleasant Operation;
- controlled release of excess water from the Mount Pleasant Operation Controlled Release Dam to manage excess water in accordance with the Hunter River Salinity Trading Scheme and MACH's Environment Protection Licence; and
- continuing co-operation between Bengalla Mine and the Mount Pleasant Operation to facilitate the approved activities of both operations in accordance with the Master Co-operation Agreement between the two mines.

In addition, MACH would continue to cooperate and consult with Muswellbrook Coal Mine and other mining companies that may conduct exploration activities on MACH-owned land.

<sup>2</sup> As at mid-2020, the full-time equivalent operational workforce of the Mount Pleasant Operation was approximately 440 people.





#### LEGEND

- Mining Lease Boundary (Mount Pleasant Operation)
- Final Landform Contour (10 m Interval)
- Secondary/Post-mining Land Use Domains
- Domain A - Final Void
- Domain C - Agricultural Land
- Domain D - Native Woodland/Grassland
- Potential High Intensity Agriculture Area

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: MACH (2020); Bengalla Mine (2016); NSW Spatial Services (2020); Department of Planning and Environment (2016)  
Orthophoto: MACH (2020)

**MACH**Energy  
MOUNT PLEASANT OPTIMISATION PROJECT  
Conceptual Final Landform  
and Final Land Use Areas

Note: Light vehicle access roads and upslope diversions associated with minimising the catchment of the final void and fines emplacement area are not shown.

Figure ES-8



## ES4 ENGAGEMENT

Feedback obtained through engagement with key stakeholders has provided the opportunity to identify issues of concern or interest, and to consider these issues within the Project design and this EIS.

MACH has consulted with a range of State and local government agencies in relation to the Project to obtain feedback on the proposed assessment approach, potential impacts and proposed mitigation measures for the Project.

MACH would continue to consult with relevant government agencies on a regular basis in relation to the Project and the ongoing approved construction and mining activities of the Mount Pleasant Operation.

MACH maintains open lines of communication with the community through a number of consultation mechanisms at the Mount Pleasant Operation. In addition, MACH undertook the following specific consultation activities for this EIS:

- distributing regular Mount Pleasant Operation community newsletters to local residents and other stakeholders;
- where practical, the conduct of face-to-face meetings with directly affected landholders;
- providing multiple Project briefings to the Community Consultative Committee;
- directly consulting with representatives of the Aboriginal community;
- a community survey as part of the Social Impact Assessment;
- consulting with local community groups; and
- briefing MACH's locally based employees.

## ES5 KEY ENVIRONMENTAL ASSESSMENT ISSUES AND PROJECT MITIGATION

### ES5.1 SPECIALIST STUDIES

This EIS was prepared by MACH and Resource Strategies Pty Ltd with specialist input provided by the following organisations:

- Xenith Consulting (*mine scheduling, mine sequencing, infrastructure design, economics, manning and final landform alternatives*);

- MACH (*project design, baseline data, land tenure, resource economics, consultation, preliminary hazard analysis, greenhouse gas assessment, agricultural assessment and rehabilitation*);
- Golder Associates (*final landform design and erosion risk modelling*);
- University of Newcastle (*landform evolution modelling*);
- GeoTek Solutions (*geotechnical considerations*);
- Wilkinson Murray (*noise and blasting assessment*);
- Todoroski Air Sciences (*air quality assessment and greenhouse gas calculations report*);
- Australasian Groundwater and Environmental Consultants (*groundwater assessment*);
- Hydro Engineering & Consulting (*surface water assessment*);
- Hunter Eco (*biodiversity development assessment report and baseline flora report*);
- Future Ecology (*baseline fauna survey report*);
- BIO-ANALYSIS (*aquatic ecology assessment*);
- South East Archaeology (*Aboriginal cultural heritage assessment*);
- Extent Heritage (*historical heritage assessment*);
- GT Environmental (*soil resource assessment*);
- The Transport Planning Partnership (*road transport assessment*);
- RGS Environmental (*geochemistry assessment*);
- JBS&G Australia (*land contamination assessment*);
- VPA Visual Planning and Assessment (*visual and landscape assessment*);
- Just Add Lime (*social impact assessment*);
- Goeldner Consulting (*capital investment value report*);
- AnalytEcon (*economic assessment*);
- Risk Mentor (*facilitation of environmental risk assessment*);
- EnRiskS (*human health assessment*); and
- Ashurst (*legal review*).

In addition, peer review was undertaken by the following specialists:

- Brian Barnett (Co-author of Australian Groundwater Modelling Guidelines) (*groundwater*);
- Glenn Thomas (Director, SLR Consulting Australia) (*noise and blasting*); and
- Simon Welchman (Director, Katestone Environmental) (*air quality and greenhouse gas*).

## ES5.2 KEY PROJECT DESIGN MEASURES

### *Staging of Increases to ROM Coal Production*

The Project proposed by MACH includes a lengthy staging of the Mount Pleasant Operation ROM coal production rate over a period of more than 10 years:

- In the Project Establishment Phase, the ROM coal extraction rate would continue at the currently approved Mount Pleasant Operation rate of 10.5 Mtpa.
- In the Intermediate Phase, once the Eastern Out-of-Pit Emplacement has been sufficiently developed, the ROM coal extraction rate would increase to 15.75 Mtpa.
- When the Eastern Out-of-Pit Emplacement is further developed and the open cuts have moved further west, the Peak Production Phase would commence, with the ROM coal extraction rate increasing to 21 Mtpa.

**The Project staging of the ROM coal production rate maximises financial returns to MACH, employment, and the generation of royalties to the State of NSW, while maintaining noise and air quality emissions that are generally consistent with the existing Mount Pleasant Operation Development Consent.**

Further, the Project would result in a significant reduction in the number of private landholders being subject to noise affectation or moderate noise exceedances when compared to the existing Development Consent.

The Mount Pleasant Operation incorporating the Project would also have night-time operational noise limits that are more stringent for a very large number of private residences to the east of the Project, including lower predicted noise levels for residences on the western outskirts of Muswellbrook.

It is noted that this outcome would be achieved by MACH adopting an extensive range of noise and air quality emission mitigation measures, including:

- continued implementation of noise attenuation on all new major mobile plant items where reasonable and feasible, in addition to the continued use of noise attenuated mobile plant at the existing Mount Pleasant Operation;
- continued implementation of acoustic design of all new fixed plant (e.g. enclosure) where reasonable and feasible, in addition to the continued use of fixed plant with extensive enclosure elements at the existing Mount Pleasant Operation;
- implementation of rail noise barriers both within and outside of the Mount Pleasant Operation MLs;
- continued use of the proactive/reactive noise management system, with alterations made to operations in response to relevant real-time monitoring alerts;
- continued use of general dust mitigation measures (e.g. watering of haul roads and stockpiles, enclosure and watering of ROM hopper unloading, conveyors and transfer points, minimisation of material drop heights, minimisation of disturbed areas and progressive rehabilitation);
- continued use of predictive meteorological and air quality forecasting to guide daily operations; and
- continued use of the proactive/reactive air quality management system, with alterations made to operations in response to relevant alerts (including pausing key dust generating activities as required by the conditions of the Environmental Protection Licence).

### *Integrated Waste Rock Emplacement*

The originally approved Mount Pleasant Operation final landform included three large out-of-pit waste emplacements:

- the Eastern Out-of-Pit Emplacement;
- the South West Out-of-Pit Emplacement; and
- the North West Out-of-Pit Emplacement.

The revision to the waste emplacement strategy associated with a previous modification (Mine Optimisation Modification [Mod 3]) allowed MACH to avoid construction of the approved South West Out-of-Pit Emplacement.



MACH has identified that the optimal Mount Pleasant Operation open cut development profile is to develop three contiguous pits that extract all economic coal seams to the Edderton Seam floor. This leads to consolidation of the Project open cut development and avoids the need to develop the North West Out-of-Pit Emplacement.

### ES5.3 REHABILITATION AND MINE CLOSURE

The final land use goals for the Mount Pleasant Operation are based on the following:

- successful design and rehabilitation of landforms to ensure structural stability, revegetation success and containment of wastes; and
- post-mining land use compatible with surrounding land uses.

The Project landform has been designed using the GeoFluv™ methodology, which uses characteristics of relevant stable natural landforms in the local environment, and applies these characteristics to the design of new landforms (Figure ES-8).

The waste rock emplacement landform would typically be developed in 10 metre lifts to enable more rapid establishment of the final surface levels. The bench designs are loaded into dozer GPS software that then guides dozer operators on how much cut and fill is required to achieve the design surface.

To confirm compliance of the as-built emplacement with the geomorphic design surface, Light Detection and Ranging (LiDAR) data of the as-built landform is compared to the design surface to confirm variations are within:

- 100 millimetres on drainage lines; and
- 300 millimetres elsewhere on the emplacement.

MACH's Inspection and Test Plan procedures are conducted both during the landform design phase and after landform construction to verify the landform has been developed consistent with the design.

Proposed final land uses for the Mount Pleasant Operation area include permanent water infrastructure and storage areas, agricultural land, native woodland and grassland areas, and the final void (Figure ES-8).

Progressive rehabilitation is undertaken to achieve three key objectives:

- to reduce the extent of raw emplaced waste rock lifts that have high visual contrast to surrounding unmined land;
- to reduce potential fugitive dust generation sources and minimise erosion with the rapid establishment of initial revegetation; and
- to rapidly improve visual integration of the emplacement landform with the unmined landscape (Figure ES-9).

Rehabilitation of woodland at the Project would continue to focus on flora species endemic to the local area. Flora species to be used in rehabilitation would aim to include those typical of the *Box-Gum Woodland CEEC*<sup>3</sup>.

Where relevant, management practices described in the *National Recovery Plan – White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland* would continue to be used as the basis for the re-establishment of grassy woodland areas on-site.

Project infrastructure not required for future use post-mining would be decommissioned and removed (as agreed with relevant regulatory authorities). A Mine Closure Plan would be developed for the Project in consultation with relevant regulatory authorities and community stakeholders.

### ES5.4 KEY PROJECT OUTCOMES

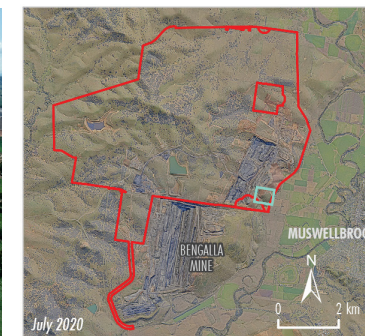
#### *Proximal Agricultural Land*

A range of agricultural enterprises are located on private land in the vicinity of the Mount Pleasant Operation and the proposed Project. Potential Project impacts on proximal agricultural enterprises would effectively be a continuation and extension of the existing impacts of the approved Mount Pleasant Operation.

**MACH would continue to facilitate the productive use of MACH-owned agricultural land outside of Project active mining areas through leasing arrangements (e.g. to local farmers) over the life of the Project.**

<sup>3</sup> Equivalent to the *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions Critically Endangered Ecological Community* listed under the *NSW Biodiversity Conservation Act, 2016* and the *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community* listed under the *Commonwealth Environment Protection and Biodiversity Conservation Act, 1999*.





LEGEND

— Mining Lease Boundary  
(Mount Pleasant Operation)

— Rehabilitation Progression Area

Source: MACH (2020)





### **Proximal Rural Residences**

As well as being located proximal to existing agricultural land uses and the approved Mount Pleasant Operation, many rural residences in the vicinity of the Project are also located close to other mines and major transport corridors.

Of relevance to potential impacts at these residences, the Project would involve:

- the continuation and staged expansion of existing mining activities, with Project noise and air quality contributions generally comparable with the currently approved Mount Pleasant Operation (Figure ES-10);
- expansion in the elevation and scale of the integrated waste rock emplacement landform and associated construction activities (including night-lighting); and
- Project incremental increases in average and peak train movements on the approved Mount Pleasant Operation rail spur and Muswellbrook–Ulan Rail Line.

There would not be any material incompatibility between the Project and existing rural residential land uses, given that the assessment outcomes are similar to the approved Mount Pleasant Operation, and key Project management measures would comply with relevant Government policy.

### **Muswellbrook Race Club**

The Muswellbrook Race Club is located approximately 2.5 km to the south-southeast of the Mount Pleasant Operation. The Mount Pleasant Operation open cut is currently at its closest proximity to the Race Club, with mining activities currently centred in the south-east of ML 1645 (Figure ES-3).

Project compliance with all applicable air quality and noise criteria is predicted at the Muswellbrook Race Club. The Race Club has existing views of the more proximal components of the Bengalla Mine and Mt Arthur Coal Mine landforms. Over the life of the Project, the focus of Mount Pleasant Operation mining activities would progressively move north and west, away from the Race Club.

There would not be any material additional incompatibility between the Project and the Muswellbrook Race Club, given that Project impacts would be similar to the approved Mount Pleasant Operation. Existing impacts would be ameliorated with progressive rehabilitation and as the Mount Pleasant Operation moves west.

### **Town of Muswellbrook**

The Mount Pleasant Operation open cut is currently at its closest proximity to Muswellbrook (Figure ES-3).

Over the life of the Project, the focus of mining activities would progressively move north and west, increasing separation from Muswellbrook.

Coincident with the western progression of mining, the integrated waste rock emplacement would increase in elevation, acting to screen potential views and provide an increasing barrier to potential air quality and noise emissions.

Based on the Noise and Blasting Assessment, applicable noise limits in the town of Muswellbrook would be lower at night under the Project than is currently the case for the approved Mount Pleasant Operation. Applicable air quality and blasting criteria would be unchanged.

**With the implementation of adopted Project noise, blasting and air quality management measures, the Project is predicted to comply with applicable noise, air quality and blasting criteria in the residential zones of Muswellbrook for all modelled Project scenarios.**

No exceedances of applicable blasting, noise or air quality criteria are predicted at any public buildings, commercial facilities, or industrial facilities in Muswellbrook (Figure ES-10).

Elevated areas with a western outlook in Muswellbrook currently have extensive views of the Mount Pleasant Operation mine landforms (Figure ES-11). MACH is applying rapid bulk shaping, topsoiling and initial rehabilitation as emplaced waste rock material becomes available (Figure ES-9).

MACH has staged the Project increases in ROM coal production to minimise potential amenity impacts on nearby rural residences and the town of Muswellbrook. With the adoption of the Project management measures there would not be any additional incompatibility between the Project and the town of Muswellbrook.

Existing visual impacts would be further ameliorated with MACH's continuation of progressive rehabilitation (Figures ES-9 and ES-11).

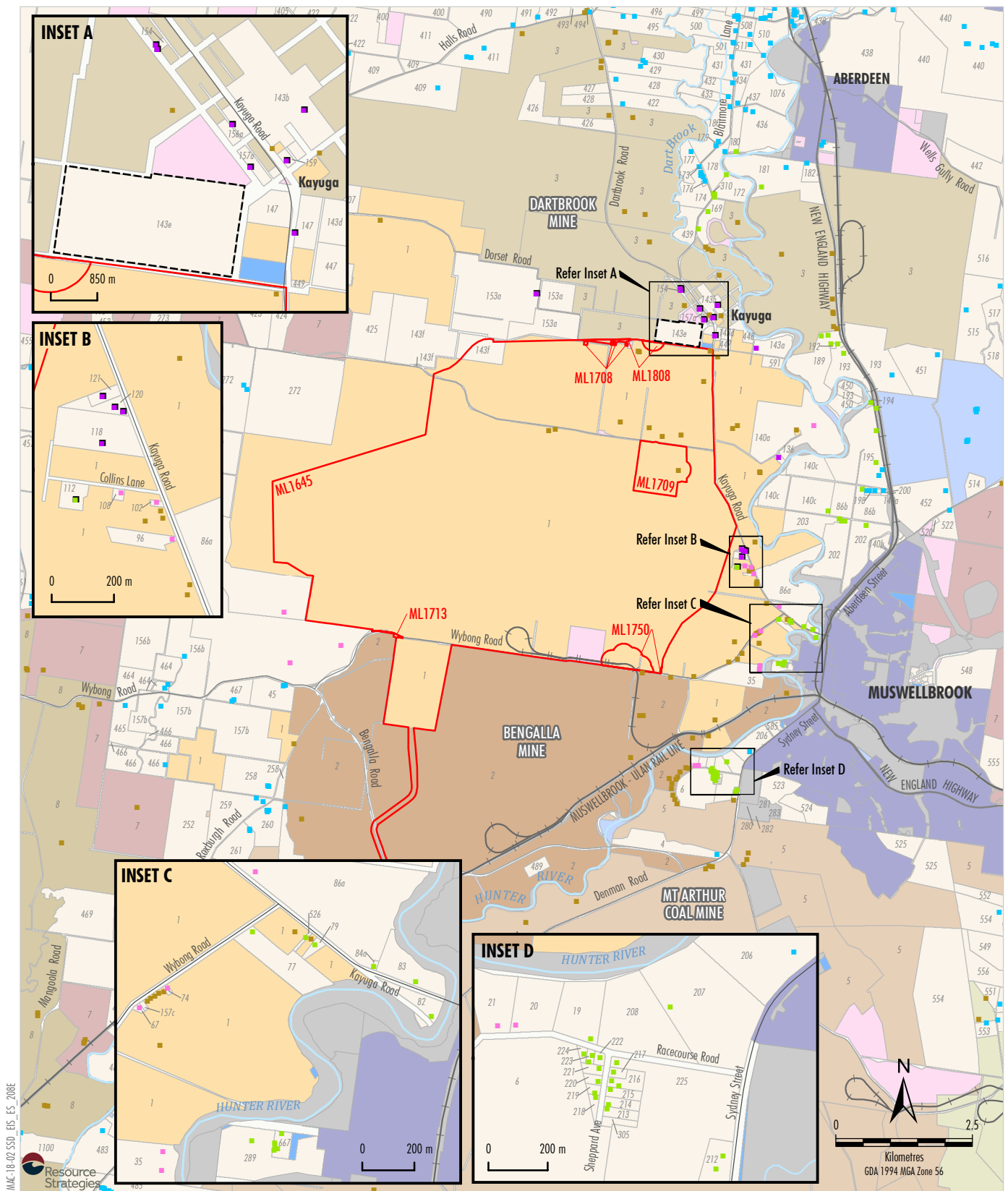
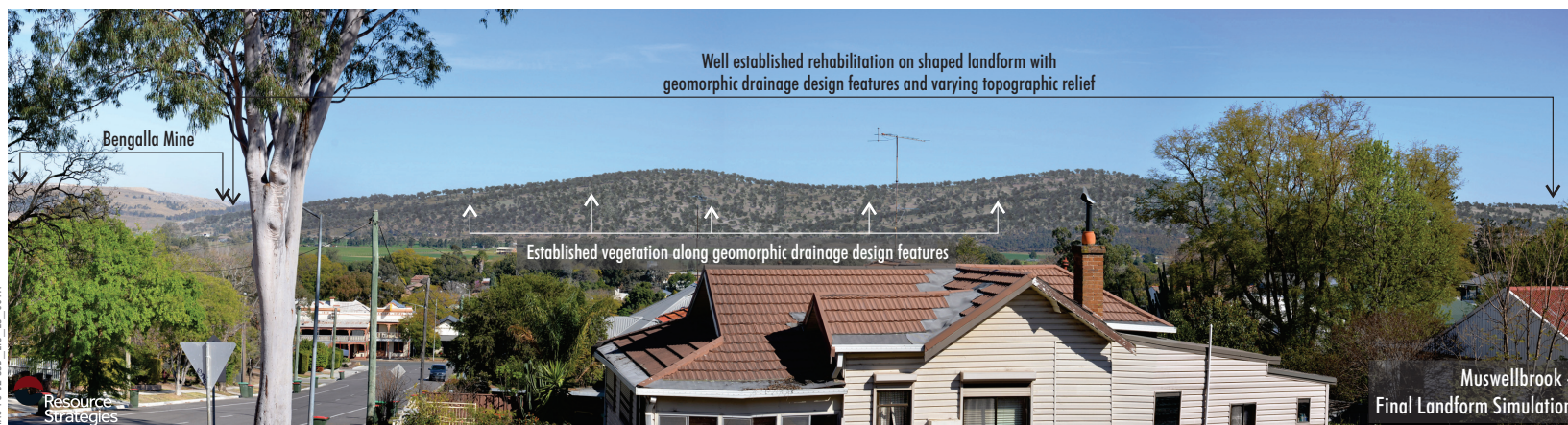
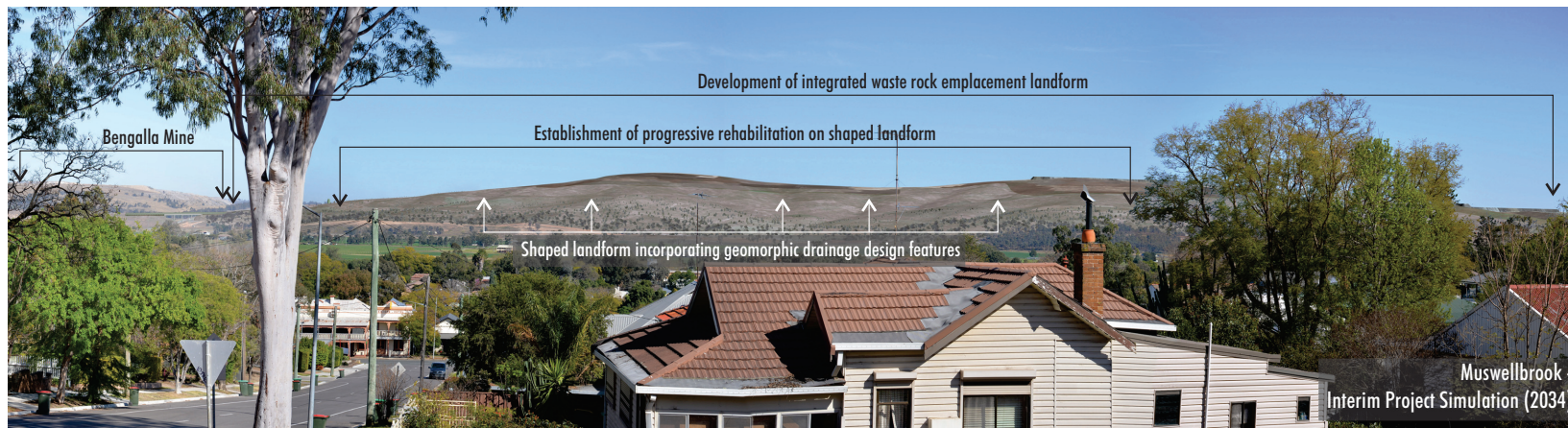
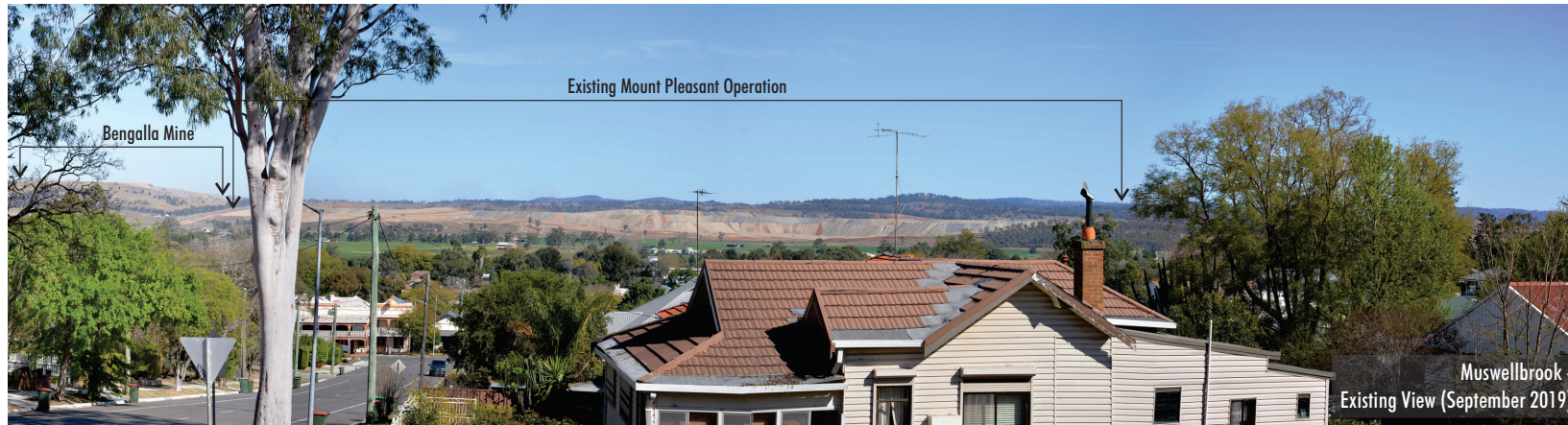


Figure ES-10







### ***Village of Aberdeen***

Aberdeen is located directly to the north of the Dartbrook Mine, some 5 km from the Project.

The Project is predicted to comply with applicable noise, air quality and blasting criteria in the residential zones of Aberdeen for all modelled Project scenarios. No exceedances of applicable blasting, noise or air quality criteria are predicted at any public buildings, commercial facilities, or industrial facilities in Aberdeen.

The approved Mount Pleasant Operation was predicted to have high visual impacts at elevated viewpoints in Aberdeen, and high-moderate impacts are expected for the Project. These impacts would be mitigated through progressive rehabilitation.

With the adoption of the Project management measures there would not be any material incompatibility between the Project and the village of Aberdeen.

### ***Compatibility with Equine Enterprises and Viticulture in the Region***

No equine or viticulture enterprises have been identified in the EIS assessments that would experience material adverse direct impacts, that are not already occurring with the approved Mount Pleasant Operation. The nearest equine enterprise is a horse stud that produces stock horses and is located on land that MACH owns.

MACH would continue to facilitate the productive use of MACH-owned agricultural land outside of Project active mining areas through leasing arrangements (e.g. to local farmers) over the life of the Project.

**With the adoption of the Project management measures, no material incompatibility between the Project and equine or viticulture enterprises in the region has been identified.**

### ***Road Transport***

The Project Road Transport Assessment considered two traffic scenarios and a number of cumulative traffic sources in the vicinity of the Project that may contribute to existing and/or future traffic volumes, including nearby mines.

The Road Transport Assessment found relevant intersections are predicted to operate with spare capacity and acceptable delays to vehicles with the Project traffic movements, with the exception of the intersection of Thomas Mitchell Drive and Denman Road. This intersection is to be upgraded by the Mt Arthur Coal Mine.

### ***Water Resources***

The Project is located within the catchment of the Hunter River. Flow in the Hunter River is regulated via large water storages, including the Glenbawn Dam and Glennies Creek Dam.

The local drainage network is generally characterised by ephemeral drainage lines which drain to the Hunter River.

The water management system for the Project has been designed to comply with accepted best practice principles for mine site water management and to protect the integrity of local and regional water resources.

MACH would continue to extract water from the Hunter River in accordance with water access licences held under the *Water Management Act, 2000*. MACH would also continue to discharge excess water to the Hunter River in accordance with the Hunter River Salinity Trading Scheme and the requirements of its Environment Protection Licence.

Potential impacts on flow in the Hunter River due to licensed water extraction, baseflow reduction and catchment excision are expected to be negligible. The Project is not predicted to result in any discernible deterioration in water quality in the Hunter River, Sandy Creek or Rosebrook Creek.

The two main groundwater systems in the vicinity of the Project are:

- alluvium associated with the Hunter River and Sandy Creek; and
- Permian strata that host the coal measures targeted by the Project.

The Permian hard rock groundwater associated with the Sydney Basin-North Coast Groundwater Source is mapped as 'less productive' in accordance with the NSW Aquifer Interference Policy. The Hunter River alluvium is the most productive aquifer and is accordingly mapped as 'highly productive'.

Groundwater modelling completed for the Project indicates:

- minimal drawdown (less than 2 metres) in the 'highly productive' Hunter River alluvium and Sandy Creek alluvium;
- negligible changes to baseflow in the Hunter River and Sandy Creek; and
- there would be no deterioration in groundwater quality as a result of mining, including in the long-term.



### **Biodiversity**

The Project mining areas are largely contiguous with the existing approved and operating open cut, thereby minimising disturbance areas that would otherwise be associated with a separate mine.

The Project has been designed to avoid or minimise impacts on biodiversity values through:

- maximising, re-use and expansion of existing infrastructure;
- maximising infilling of existing infrastructure areas (existing disturbed areas), thereby avoiding the need for a larger development envelope;
- placement of new infrastructure within the extent of approved disturbance areas in lieu of infrastructure no longer required; and
- optimising the capacity of the existing Fines Emplacement Area by employing contemporary emplacement methodology.

In addition to the measures described above, development of a large area of approved disturbance would be forgone (not cleared) (Figure ES-6) which would reduce the residual biodiversity impacts from the Project.

After applying the measures to avoid and/or minimise impacts on biodiversity values, including the Relinquishment Area, there would be a net benefit on native vegetation and habitat because of:

- less clearance of native vegetation compared to the current approved mine;
- less clearance of the *Box-Gum Woodland CEEC*;
- less clearance of habitat for the Striped Legless Lizard (*Delma impar*) and Squirrel Glider (*Petaurus norfolcensis*) compared to the current approved mine; and
- less clearance of Tiger Orchids (*Cymbidium canaliculatum*) compared to the current approved mine.

The Mount Pleasant Operation has already offset the approved biodiversity impacts of the mine, with the establishment of major biodiversity offsets of some 12,875 hectares on a number of properties with a combined area of 15,590 hectares (Figure ES-5). These properties have been subject to management since 2012 under an Offset Management Plan.

Notwithstanding, the NSW Government may or may not also require MACH to retire additional biodiversity credits as a condition of Development Consent, should the Project be approved.

### **Aboriginal Heritage**

More known heritage sites are located within the Project Relinquishment Area than are within the proposed Project Additional Disturbance Area.

The Aboriginal Heritage Cultural Heritage Assessment concluded that the cumulative impacts of the Project on Aboriginal heritage would be very low within a regional context.

A total of 88 Aboriginal stakeholders registered an interest and were consulted in relation to the Project Aboriginal Cultural Heritage Assessment.

**Consultation highlighted key cultural heritage themes associated with the Mount Pleasant Operation and the surrounding landscape, including the important cultural connections held by Aboriginal people today to the ancestral past through archaeological objects.**

The currently approved Mount Pleasant Operation Aboriginal Cultural Heritage Management Plan would be updated to include provisions relating to the Project, and to specify the policies and actions required to manage Aboriginal heritage within the Project area.

### **Historical Heritage**

The Historical Heritage Assessment identified 14 places of local heritage significance. Two places of State heritage significance were also identified within the broader area.

Seven local significance heritage sites located within the approved Mount Pleasant Operation surface development area would also be directly impacted by the Project. Direct impacts to these sites would be appropriately mitigated by implementing Project management measures consistent with the recommendations of the Historical Heritage Assessment.

Management measures for the identified historic heritage sites would be described in a Historical Heritage Management Plan to be developed for the Project. Conservation Management Plans would also be developed for Negoa and Rosebrook Homesteads.

## Social Values and Community Infrastructure

**The Project Social Impact Assessment identified the potential impacts of the Project as a continuation of the social impacts currently being experienced from the Mount Pleasant Operation.**

The Project would extend the life of the Mount Pleasant Operation and, therefore, would extend any associated existing impacts on wellbeing and quality of life, culture and community cohesion that are perceived in the local community.

Negative social impacts would continue to be experienced by people in close geographical proximity to the current operation, while positive social impacts would continue to be experienced generally over the same and wider geographical area.

Notwithstanding, personal perceptions would be affected by preferences, associations and memories derived from reading, hearing and/or seeing information on previous, existing and proposed activities and stakeholder interactions.

Perceptions vary between individuals and can, therefore, be difficult to assess.

The impact of the Project on the landscape and the extended duration of those impacts over time in the context of existing land use patterns at the regional, subregional and local scales would create a moderate dynamic landscape impact.

Given the staged expansion of existing mining activities and the consequent staged increase of the Project workforce numbers, the Social Impact Assessment found the additional workforce associated with the Project would be unlikely to result in any significant change to the local population.

While most of the workforce is expected to continue to live locally (i.e. Muswellbrook, Singleton and Upper Hunter Local Government Areas), the Project workforce would result in some additional demand for housing and services.

MACH has commenced negotiations with the Muswellbrook Shire Council regarding a revision of the Mount Pleasant Operation Voluntary Planning Agreement for the Project.

Social impact management measures and enhancement measures for positive social impacts would be described in a Social Impact Management Plan to be developed for the Project.

## Greenhouse Gas

It is acknowledged that (subject to the efficacy of national and international greenhouse gas abatement measures) all sources of greenhouse gas emissions in NSW, irrespective of their scale, will contribute in some way towards the potential global, national, state and regional effects of climate change.

The Project's potential contribution to global climate change would be proportional to its contribution to global greenhouse gas emissions.

Approximately 96% of the estimated total Scopes 1, 2 and 3 emissions are associated with the end use of the Project product coal by customer organisations (i.e. primarily for electricity generation).

**Emissions associated with the end use of Project coal would be managed under the Nationally Determined Contributions of relevant customer countries.**

MACH would manage its contribution to Australian greenhouse gas emissions inventories through participation in applicable government initiatives and policies implemented to manage emissions at the national level under Australia's progressive Nationally Determined Contributions.

Due to the inherent uncertainties associated with climate change projections, the potential impacts of climate change on the Project cannot be determined with a high degree of confidence.

Notwithstanding, climate change projections indicate average temperatures are likely to rise in the vicinity of the Project, and extreme temperature events may increase in frequency.

MACH has considered the key potential climate change risks to the Project (namely increased frequency of bushfires, water reliability during dry periods and storm surges) in the design of the Project.

The potential implications of climate change with regard to rainfall (e.g. prolonged dry periods and storm surges) have also been considered in the Groundwater Assessment and the Surface Water Assessment.

MACH would continue to assess climate change risks on an ongoing basis via implementation of an adaptive management approach.



## ES5.5 STRATEGIC CONTEXT

The Project is a 'brownfield' project that builds on and optimises the existing Mount Pleasant Operation. In particular, the Project would:

- continue and extend open cut mining wholly within the existing Mount Pleasant Operation MLs;
- provide augmentation of the existing Mount Pleasant Operation facilities including coal handling and processing, water storage, mine infrastructure, and Fines Emplacement Area;
- use the existing approved Mount Pleasant Operation rail infrastructure to its full capacity;
- continue to use the existing Mount Pleasant Operation Mine Access Road as the primary site access point; and
- provide continuation and augmentation of supply for existing coal customers, including the Japanese electricity generators that are part-owners of the Project (through J.C.D. Australia Pty Ltd).

As at mid-2020 the Mount Pleasant Operation employed 440 full-time equivalent people and operated at a ROM coal production rate of up to 10.5 Mtpa, at the mine's closest proximity to Muswellbrook.

The proposed Project staging of the ROM coal production rate up to a maximum of 21 Mtpa would increase financial returns to MACH, employment, and the generation of royalties to the State of NSW, while maintaining key emissions at levels that are generally consistent with the existing Development Consent DA 92/97.

The NSW Government's 2020 *Strategic Statement on Coal Exploration and Mining in NSW* indicates that the NSW Government will take a balanced approach to the future of coal mining in the State, so the NSW coal sector can satisfy long-term global demand for coal, while giving NSW coal-reliant communities time to adapt to a low carbon future.

Long life and low operating-cost mines such as the Project that align with NSW's strategic objectives will be important to maintain the generation of royalties and employment in the NSW mining industry, facilitating a more gradual decline of coal mining in the region.

## ES6 CONCLUSION

The Project would comply with applicable statutory requirements and relevant strategic planning policy objectives.

**The optimisation of the Mount Pleasant Operation would provide for the continuation of employment of the existing workforce, with an average of approximately 600 full-time-equivalent direct operational jobs. The Project would invest approximately \$950 million in capital expenditure.**

The Project would also contribute to the ongoing viability of existing suppliers, and provide continuation of supply to customers, including J.C.D. Australia Pty Ltd.

Engagement has informed MACH's design of the Project, including adoption of a range of extensive control measures to minimise potential impacts. The Project would result in lower predicted night-time noise levels for residences on the western outskirts of Muswellbrook than under the current Development Consent DA 92/97.

Consolidation of the disturbance area of the Mount Pleasant Operation with infill of incidental areas in the vicinity of approved development, and relinquishment of areas of higher habitat value in the north-west would result in a net positive biodiversity outcome for the region.

MACH would continue to apply existing offsets or other Project-specific measures to address residual impacts.

The Mount Pleasant Operation site is suitable for the proposed Project use, and the Project extension of MACH's mining activities in the existing MLs would generate a significant net benefit to the State of NSW.

Economic benefits potentially forgone if the Project does not proceed amount to a net benefit of \$855 million in net present value terms to the State of NSW. This includes estimated total incremental Project coal royalties of approximately \$2 billion (net present value approximately \$684 million).

**In weighing up the main environmental impacts (costs and benefits) associated with the proposal as assessed and described in this EIS, the Project is on balance, considered to be in the public interest of the State of NSW.**