BENGALLA MINE

DEVELOPMENT CONSENT MODIFICATION
Statement of Environmental Effects

for

Bengalla Mining Company Pty Limited

April 2016

Hansen Bailey

ENVIRONMENTAL CONSULTANTS

BENGALLA MINE

DEVELOPMENT CONSENT MODIFICATION
STATEMENT OF ENVIRONMENTAL EFFECTS

Prepared by:

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April 2016

For:

BENGALLA MINING COMPANY PTY LIMITED
LMB 5
MUSWELLBROOK NSW 2333

EXECUTIVE SUMMARY

OVERVIEW

Bengalla Mining Company Pty Limited operates the Bengalla Mine in the Upper Hunter Valley of New South Wales. Bengalla Mine is situated approximately 130 kilometres north-west of Newcastle and 4 kilometres west of the township of Muswellbrook.

On 3 March 2015, Bengalla Mining Company Pty Limited was granted Development Consent (State Significant Development 5170) by the Secretary of Department of Planning and Environment. This consent authorised the continued operations at a production rate of up to 15 Million tonnes per annum of Run of Mine coal until 2039. The application for development consent was supported by the *Continuation of Bengalla Mine Environmental Impact Statement* (Hansen Bailey, 2013) and as modified by the *Response to Submissions* (Hansen Bailey, 2014). State Significant Development 5170 was modified under section 96 of the *Environmental Planning and Assessment Act 1979* on 16 December 2015 (Mod 1).

As part of the stakeholder consultation process undertaken during the assessment of the *Continuation of Bengalla Mine Environmental Impact Statement* (Hansen Bailey, 2013) Bengalla Mining Company Pty Limited committed to investigate further options to improve the appearance of the top of the Main Overburden Emplacement Area toward primary viewing locations from Muswellbrook and Denman Road. Bengalla Mining Company Pty Limited acknowledged that if an improved outcome was identified than a Modification Application would be prepared and submitted for assessment.

Bengalla Mining Company Pty Limited has conducted ongoing consultation with Muswellbrook Shire Council, additional mine planning and visual analysis with technical input from landscape architects and have determined that an improved landform outcome can be achieved. Bengalla Mining Company Pty Limited is now fulfilling this prior commitment to improve the level appearance of the Main Overburden Emplacement Area through this proposed Modification. One minor other additional Modification element is also sought as described and assessed in this Statement of Environmental Effects.

MODIFICATION DESCRIPTION

Bengalla Mining Company Pty Limited is seeking approval from the New South Wales Minister for Planning or his delegate for a modification to its State Significant Development 5170. This proposed Modification is sought under section 96(2) of the *Environmental Planning and Assessment Act 1979* for the following:

- Alterations to the approved height of the Main Overburden Emplacement Area to improve visual amenity from primary viewing locations in and surrounding the township of Muswellbrook and Denman Road, in two selected locations (Visual Relief Areas):
    - The Northern Relief Area constructed to a maximum height of Reduced Level 300; and
    - The Southern Relief Area constructed to a maximum height of Reduced Level 290.

- Establishment of a new gravel access road from Wybong Road to the Dry Creek Diversion Project Construction Site Office being a former homestead (Homestead Access).

In order to determine the most appropriate landform design for this proposed Modification visual specialists were engaged to develop an improved final landform. The first stage was to determine the minimum height variation that would be discernible at distance to provide for a noticeable alteration to the level appearance of the existing Main Overburden Emplacement Area.

The key viewing locations included vantage points within the elevated areas of the Muswellbrook Township at distances of up to six kilometres away. To improve the vista at these locations differences in elevation would need to be discernible.

The visual specialists review determined that increases to the current maximum height of the landform would be required to be greater than 20 m to provide for a noticeable alternation in terms of form, shape and line to more closely resemble the surrounding topography from this distance. The review also determined that it was necessary to develop two or more visual relief areas of varying heights to further enhance the resemblance of a natural landform and to avoid the obstruction of the distant skyline from some locations.

Following the preliminary planning and in order to determine the final design of the Visual Relief Areas the existing physical environmental and economic constraints were then required to be considered. The consultation process undertaken with key stakeholders during the development of the Visual Relief Areas further assisted in ensuring that the landform proposed by this proposed Modification better meets current community and regulatory expectations.

Constraints that were considered when developing the Visual Relief Areas include:

- Area of land currently situated at the approved height of Reduced Level 270 available to apply visual relief;
- Existing areas of established rehabilitation including areas of Class III land capability; and
- Noise and air quality implications associated with the construction works.

Due to the existing constraints (and alternatives considered) it has been determined that this proposed Modification provides an improved final landform with minimal additional environmental impacts as it presents to Muswellbrook and Denman Road. Should this proposed Modification be approved it will ensure:

- The development of an improved final landform that provides for a noticeable alteration at distance to the level appearance of the existing Main Overburden Emplacement Area that better blends to the surrounding natural landscape;
- No significant additional impacts to existing air quality or noise impacts at private receptors;
- An achievable landform that will not significantly impede Bengalla's existing or future mining operation; and
- Achieve commitments previously made by Bengalla Mining Company Pty Limited in developing an improved final landform outcome.

REGULATORY FRAMEWORK

On 3 March 2015, the Secretary for Department of Planning and Environment as delegate of the Minister for Planning granted Bengalla Mining Company Pty Limited State Significant Development 5170 for the Bengalla Continuation Project under section 89E of the *Environmental Planning and Assessment Act 1979.* Section 96 of the *Environmental Planning and Assessment Act 1979* allows for a Development Consent to be modified by the authority to which the original application was made. This Modification Application is made pursuant to section 96(2) of the *Environmental Planning and Assessment Act 1979.*

The prerequisite to a Modification Application under section 96(2) is that the consent authority is satisfied that the proposed development (including this proposed Modification and any previous modifications) is '*substantially the same development*' as the originally approved development. This proposed Modification sought to State Significant Development 5170 will not result in any substantial changes to the development as originally approved.

STAKEHOLDER ENGAGEMENT

The stakeholder engagement program included consultation with Local and State government agencies and meetings with the Bengalla Mining Company Community Consultative Committee. Additional consultation has occurred with Hunter Valley Energy Coal in relation to the adjacent Mt Arthur Coal Mine on how each mines final landform and rehabilitation presents to Muswellbrook and Denman Road. Further consultation (by newsletter) was undertaken with the mine's neighbouring landholders.

An important element of the stakeholder engagement program completed for this proposed Modification included consultations with Muswellbrook Shire Council senior management. This proposed Modification was then presented to senior managers and councillors of Muswellbrook Shire Council to demonstrate the potential for an improved vista from key viewing locations both within and surrounding the township of Muswellbrook.

RISK ASSESSMENT

A risk assessment was completed to identify potential environmental and socio-economic issues associated with this proposed Modification. The primary purpose of the risk assessment process was to prioritise and focus the required environmental and socio-economic impact studies required for the Statement of Environmental Effects.

Each of the potential environmental issues was ranked in accordance with the Bengalla Mining Company Pty Limited - Health, Safety, Environment and Quality Risk Classification Matrix as being of low, moderate, high or critical risk dependent upon the probability of the impact occurring and the potential consequences should the impact materialise.

Due to the nature of this proposed Modification no environmental aspects presented a critical or high risk. Visual, air quality, acoustics impacts along with rehabilitation and final landform were determined to be of moderate risk with all remaining environmental issues deemed to be low risk primarily due to this proposed Modification components all being located within the Approved Disturbance Boundary.

IMPACTS, MANAGEMENT AND MITIGATION

To determine the potential environmental impacts of this proposed Modification, an assessment was undertaken in relation to visual, air quality, acoustics, water resources, ecology, Aboriginal archaeology, non-Aboriginal heritage impacts along with rehabilitation and final landform. The impact assessments undertaken for the environmental issues outlined above have confirmed that the impacts of this proposed Modification will generally be consistent with or will result in a better environmental outcome compared to those currently approved.

A Visual Impact Assessment was undertaken for this proposed Modification by VPA Visual Planning & Assessment. The primary element of this proposed Modification assessed as part of the Visual Impact Assessment is associated with the development of the Visual Relief Areas to change the level appearance of part of the Main Overburden Emplacement Area when viewed from primary viewing locations in and surrounding the township of Muswellbrook and Denman Road.

The visual effect and sensitivity of the landscape was determined by considering the existing landscape settings and how they are seen from the various viewing locations. In order to illustrate the views associated with this proposed Modification, photomontages were developed at primary viewing locations.

The Visual Impact Assessment concluded that this proposed Modification will result in an improved visual outcome due to the Visual Relief Areas creating an undulating natural profile that provides for improved visual integration with the surrounding landscape.

An Air Quality Impact Assessment was completed by Todoroski Air Sciences for this proposed Modification. The assessment focused on the activity required for the alteration to the approved height of the Main Overburden Emplacement Area in comparison to the previous assessment completed in the *Continuation of Bengalla Mine Environmental Impact Statement* (Hansen Bailey, 2013) *Air Quality and Greenhouse Gas Impact Assessment* (Todoroski Air Sciences, 2013).

A comparison of the estimated total annual dust emissions in Year 4 and Year 8 for the approved mining operation and the proposed Modification indicate that emissions would increase by approximately 2.0% and 2.5% respectively relative to the approved operations in those two years of operations.

The dispersion modelling results indicate that the predicted project alone maximum 24-hour average extent of short-term PM_{10} dust impacts for the proposed Modification would largely remain within the existing approved maximum envelope. The results indicate that predicted cumulative annual average PM_{10} dust levels are unlikely to change significantly at any privately-owned receiver as a result of this proposed Modification in comparison with the results presented in the *Air Quality and Greenhouse Gas Impact Assessment* (Todoroski Air Sciences, 2013).

Results for $PM_{2.5}$, annual average total suspended particulates and annual average dust deposition are unlikely to change significantly at any privately-owned receiver as a result of this proposed Modification. No additional privately-owned receivers to those already predicted to be impacted as listed in State Significant Development 5170 (as Modified) are predicted to exceed any of the relevant air quality criterion as a result of this proposed Modification.

An Acoustic Impact Assessment was completed by Bridges Acoustics for this proposed Modification. Specifically the Acoustic Impact Assessment provided a quantitative assessment of the potential change in construction and operational noise associated with this proposed Modification in comparison to those presented in the *Continuation of Bengalla Mine Environmental Impact Statement* (Hansen Bailey, 2013) *Acoustic Impact Assessment* (Bridges Acoustics, 2013).

Under prevailing weather conditions, predicted noise levels from this proposed Modification do not appreciably change from the currently approved noise levels and, in all cases, remain below the predicted noise levels in Year 1 reported in the *Continuation of Bengalla Mine Environmental Impact Statement* (Hansen Bailey, 2013).

This proposed Modification construction and operational noise levels are expected to remain consistent with the noise levels reported in the *Continuation of Bengalla Mine Environmental Impact Statement* (Hansen Bailey, 2013). No additional privately-owned receivers to those already listed in State Significant Development 5170 (as Modified) are predicted to exceed any of the relevant noise criterion as a result of this proposed Modification.

Due to the nature of this proposed Modification along with all components being located within the Approved Disturbance Boundary, assessments completed for this Statement of Environmental Effects have identified that this proposed Modification will not result in any significant impacts to water resources, ecology, Aboriginal archaeology, non-Aboriginal heritage items or traffic.

It is anticipated that should this proposed Modification be approved that the revised conceptual final landform presented in this Statement of Environmental Effects will replace the existing conceptual final landform in Appendix 9 of State Significant Development 5170.

Given the nature of this proposed Modification, Bengalla Mining Company Pty Limited will be capable of conducting the activities proposed under this proposed Modification in accordance with the existing conditions of State Significant Development 5170 (as Modified) and the management plans (as Modified) implemented under this consent. The Bengalla Mining Company Pty Limited Mine Operations Plan will be updated in consultation with the relevant agencies to incorporate this proposed Modification, if approved.

Further to the conditions of State Significant Development 5170 (as Modified), Bengalla Mining Company Pty Limited will undertake all reasonable and feasible management and mitigation measures, as stated in this Statement of Environmental Effects, to ensure that this proposed Modification's environmental impacts are minimised.

CONCLUSION

As part of the stakeholder consultation process undertaken during the assessment of the *Continuation of Bengalla Mine Environmental Impact Statement* (Hansen Bailey, 2013), Bengalla Mining Company Pty Limited committed to investigate further options to improve the level appearance of the top of the Main Overburden Emplacement Area toward primary viewing locations from Muswellbrook and Denman Road.

Bengalla Mining Company Pty Limited acknowledged that if an improved outcome was identified then a Modification Application would be prepared and submitted for assessment.

Bengalla Mining Company Pty Limited has designed improvements to achieve the desired final landform enhancements at Bengalla Mine. This Statement of Environmental Effects has confirmed that the final landform changes proposed and the other minor proposed Modification element sought will not have any material deleterious environmental impacts beyond those which are already approved.

Bengalla Mining Company Pty Limited is now wishing to fulfil this prior commitment to improve the level appearance of the Main Overburden Emplacement Area through this proposed Modification. One other minor additional proposed Modification element is also sought as described and assessed in this Statement of Environmental Effects is to provide a new dedicated access to a former homestead currently being used as the Dry Creek Diversion Project Construction Site Office.

ENVIRONMENTAL ASSESSMENT STATEMENT

Submission of Statement of Environmental Effects (SEE)

Under section 96(2) of the *Environmental Planning and Assessment Act 1979*

Modification SEE Prepared by	
Name:	James Bailey
Qualifications:	B. Natural Resources, MBA
Address:	Hansen Bailey Pty Limited PO Box 473 SINGLETON NSW 2330
In Respect Of:	Bengalla Mine SSD-5170 Modification SEE
Applicant Name:	Bengalla Mining Company Pty Limited
Applicant Address:	LMB 5 MUSWELLBROOK NSW 2333
Proposed modification sought:	Modification to SSD-5170 for activities described in **Section 3** of this SEE.
Environmental Assessment:	An SEE for these Modifications is attached.
Certification:	I certify that I have read and am aware of the terms of the Expert Witness Code of the Land and Environment Court NSW. I further certify that I have prepared the contents of this SEE, and to the best of my knowledge: • It is in accordance with section 96(2) of the *Environmental Planning and Assessment Act 1979*; • Meets the form and content of Part 1 Clauses 2(4) of Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*; • It contains all available information that is relevant to the environmental assessment of the activity to which this Modification SEE relates; and • The information contained in this Modification SEE is neither false nor misleading.
Signature:	
Name:	James Bailey Director
Date:	26 April 2016

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1 OVERVIEW

This section provides an introduction to the Bengalla Continuation of Mining Project, introduces the proponent and outlines the purpose and structure of this Statement of Environmental Effects (SEE).

1.1 BACKGROUND

Bengalla Mining Company Pty Limited (BMC) operates the Bengalla Mine (Bengalla) in the Upper Hunter Valley of New South Wales (NSW). Bengalla is situated approximately 130 kilometres (km) north-west of Newcastle and 4 km west of the township of Muswellbrook (see **Figure 1**). It is generally bounded by Wybong Road to the north, Roxburgh Road to the west, Overton Road to the east and the Bengalla Link Road and Muswellbrook-Ulan Rail Line to the south.

BMC was granted Mining Lease 1397 in 1996 with mining operations subsequently commencing in 1998 with approval (DA 211/93 as Modified) enabling operations to continue until 2017. In 2013, as part of its ongoing commitment to future operations at Bengalla and long term investment in the Upper Hunter region, BMC sought a new Development Consent under Division 4.1 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to enable continued mining operations at Bengalla.

On 3 March 2015, BMC was granted Development Consent (State Significant Development (SSD) 5170) by the Secretary of the Department of Planning and Environment (DP&E). This consent authorised the continued operations at up to 15 Million tonnes per annum (Mtpa) of Run of Mine (ROM) coal until 2039. The application for development consent was supported by the *Continuation of Bengalla Mine Environmental Impact Statement* (Bengalla EIS) (Hansen Bailey, 2013) and as modified by the *Continuation of Bengalla Mine Response to Submissions* (Bengalla EIS RTS) (Hansen Bailey, 2014a). SSD-5170 was modified under section 96 of the EP&A Act on 16 December 2015 (Mod 1).

On 27 May 2015 BMC was granted *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval 2012/6378 from the Federal Department of the Environment (DoE). Further details in regard to Bengalla's approvals history is provided in **Section 2**.

During the stakeholder consultation process undertaken during the assessment of the Bengalla EIS (Hansen Bailey, 2013) BMC committed to investigate further options to improve the level appearance of the top of the Main Overburden Emplacement Area (Main OEA) toward primary viewing locations from Muswellbrook and Denman Road. BMC acknowledged this request would be pursued and that if an improved outcome was identified then a Modification Application would be prepared and submitted for assessment.

BMC has conducted consultation with MSC, additional mine planning and visual analysis with technical input from landscape architects and have determined that an improved landform outcome can be achieved. BMC is now fulfilling this prior commitment to improve the appearance of the Main OEA through this proposed Modification. Minor other additional Modification elements are also sought as described in **Section 1.2** below.

H8 BENGALLA MOD 2 1512 F1 Regional Context 05 02 2016 Rev A

BENGALLA MINE

Regional Locality

FIGURE 1

1.2 DOCUMENT PURPOSE

This Statement of Environmental Effects (Modification SEE) has been prepared to support an application for the proposed Modification of SSD-5170 under section 96(2) of the EP&A Act (this Modification). This Modification is being sought to facilitate:

- Alterations to the approved height of the Main OEA to improve visual amenity from primary viewing locations in and surrounding the township of Muswellbrook and Denman Road, in two selected locations (Visual Relief Areas):
    - The Northern Relief Area constructed to a maximum height of Reduced Level (RL) 300; and
    - The Southern Relief Area constructed to a maximum height of RL 290.
- Establishment of a new gravel access road from Wybong Road to the Dry Creek Diversion Project Construction Site Office being a former homestead (Homestead Access).

A detailed Modification description is provided in **Section 3**.

1.3 PROPONENT

The proponent for this Modification is BMC which is owned by the Bengalla Joint Venture (BJV). The BJV comprises:

- New Hope Corporation Limited 40%;
- Wesfarmers Bengalla Limited (a wholly owned subsidiary of Wesfarmers Limited) 40%;
- Taipower Bengalla Pty Limited (a wholly owned subsidiary of Taiwan Power Company) 10%; and
- Mitsui Bengalla Investment Pty Limited (a wholly owned subsidiary of Mitsui Coal Holdings Pty Limited) 10%.

The contact details for BMC are:

Bengalla Mining Company Pty Limited

LMB 5

MUSWELLBROOK NSW 2333

Phone: 02 6542 9500

Fax: 02 6542 9599

Website: http://www.bengalla.com.au/

1.4 DOCUMENT STRUCTURE

This Modification SEE is structured as follows:

- **Section 2** provides a description of the approved operations at Bengalla;
- **Section 3** provides a description of this Modification for which approval is sought;
- **Section 4** describes the regulatory framework relevant to this Modification;
- **Section 5** describes the stakeholder engagement undertaken for this Modification;
- **Section 6** presents a high level risk assessment completed for this Modification;
- **Section 7** assesses environmental impacts and outlines management and mitigation measures proposed in respect of this Modification;
- **Section 8** presents BMC's Management and Monitoring Summary related to this Modification;
- **Section 9** provides a conclusion to this SEE; and
- **Section 10** and **Section 11** lists the abbreviations and references used in this SEE.

2 APPROVED OPERATIONS

This section includes a description of the approved operations at Bengalla.

2.1 PLANNING APPROVAL FRAMEWORK

2.1.1 NSW Environmental Planning and Assessment Act 1979

State Significant Development 5170

In September 2013, the Bengalla EIS (Hansen Bailey, 2013) and as modified by the Bengalla EIS RTS (Hansen Bailey, 2014) was prepared to support an Application for Development to enable continued mining operations at Bengalla. Subsequently, on 3 March 2015 the Secretary of the DP&E granted SSD-5170 which permits the following activities at Bengalla:

- Continued open cut mining west of the then operations at a rate of up to 15 Mtpa ROM coal for 24 years to a total of not more than 316 Mt;
- Continued use of the existing dragline, truck fleet and excavator fleet (with progressive replacement or substitution with equivalent);
- An out of mining area overburden emplacement area (OEA) to the west of Dry Creek, which may be utilised for excess overburden material until it is intercepted by mining;
- Continued use, extension or relocation of existing and new infrastructure, including administration and parking facilities, in-mining area facilities (including dragline shut down and erection pad), helipad, tyre laydown area, explosives and reload storage facility, core shed workshop, roads, reject bin, ROM hopper, stockpiles, conveyors, water management infrastructure, bioremediation area, supporting power infrastructure, rail and rail loading infrastructure and ancillary infrastructure;
- Construction and use of various items of new infrastructure (including radio tower, extensions to the MIA, additional raw coal stockpile and upgrade to the ROM coal stockpile (along with associated conveyor network) generally as shown on the infrastructure plans and construction of the Mount Pleasant Staged Discharge Dam and associated water reticulation infrastructure;
- Processing, handling and transportation of coal via the (upgraded) Coal Handling and Preparation Plant (CHPP) and rail loop for export and domestic sale;
- Continued rejects and tailings co-disposal in the Main OEA and in the temporary in-mining area reject emplacement;
- Relocation of a 6 km section of Bengalla Link Road at approximately Year 15 near the existing mine access road to facilitate coal extraction;
- The diversion of Dry Creek via dams and pipe work with a later permanent alignment of Dry Creek through rehabilitation areas when emplacement areas are suitably advanced;
- Relocation of water storage infrastructure as mining progresses through existing dams (including the Staged Discharge Dam and Raw Water Dam); and

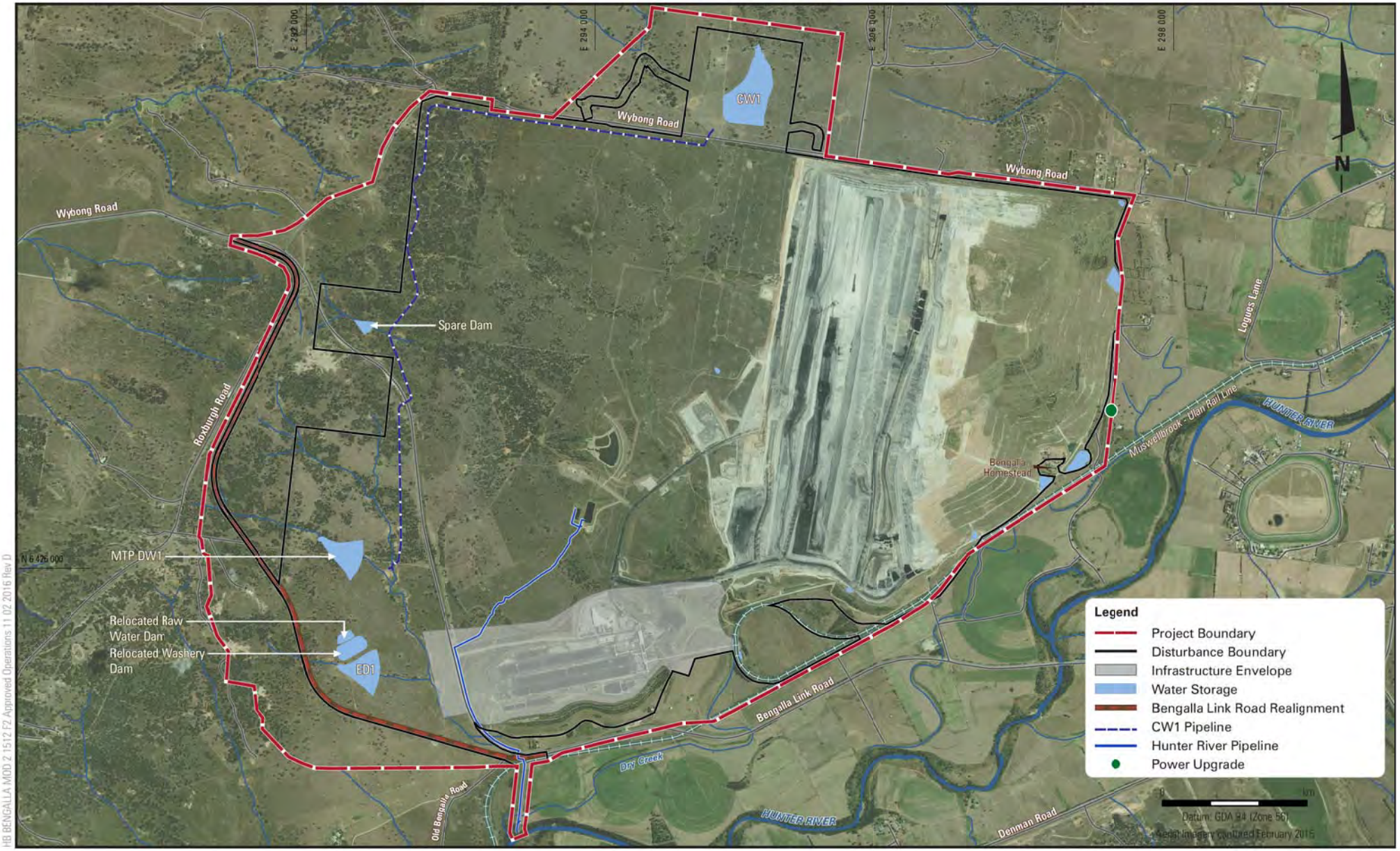
- A workforce of up to 900 full time equivalent personnel (plus contractors) at peak production.

The approved operations layout is presented in **Figure 2**.

Mining operations approved under SSD-5170 occur within a number of mining authorities held by BMC, the status of which is shown in **Table 1**.

Table 1
Licences and Approvals

Approval	Description	Duration	Authority
SSD-5170	State Significant Development Consent	03/03/15 – 28/02/39	DP&E
SSD-5170 (Modification 1)	State Significant Development Consent	16/12/15 – 28/02/39	DP&E
EPBC 2012/6378	EPBC Approval	27/05/15 – 31/12/2050	DoE
DA 211/93	Development Consent	07/08/95 – 07/08/17	DP&E
DA 211/93 (Modification 1)	Development Consent	09/11/06 – 07/08/17	DP&E
DA 211/93 (Modification 2)	Development Consent	06/12/07 – 07/08/17	DP&E
DA 211/93 (Modification 3)	Development Consent	22/07/08 – 07/08/17	DP&E
DA 211/93 (Modification 4)	Development Consent	07/11/11 – 07/08/17	DP&E
DA 211/93 (Modification 5)	Development Consent	11/07/14 – 07/08/17	DP&E
DA 273/2006	Development Consent Explosives Facility	06/09/06 – Perpetuity	MSC
Mining Lease 1397	Mining Lease	27/06/96 – 27/06/17	DTIRIS – DRE
Mining Lease 1450	Mining Lease	11/06/99 – 11/06/20	DTIRIS – DRE
Mining Lease 1469	Mining Lease	05/06/00 – 05/06/21	DTIRIS – DRE
Mining Lease 1728	Mining Lease	10/02/16 – 10/02/37	DTIRIS – DRE
Mining Lease 1729	Mining Lease	10/02/16 – 10/02/37	DTIRIS – DRE
Mining Lease 1711	Mining Lease	30/07/15 – 17/12/31	DTIRIS – DRE
Mining Lease 1645 Sub-lease 1	Sub-lease	08/10/15 – 31/07/20	DTIRIS – DRE
Mining Lease 1645 Sub-lease 2	Sub-lease	24/09/15 – 31/07/20	DTIRIS – DRE
Mining Lease 1645 Sub-lease 3	Sub-lease	08/10/15 – 31/07/20	DTIRIS – DRE
EPL 6538	Environmental Protection Licence	11 September (anniversary)	NSW Office of Environment and Heritage (OEH)
Mine Operations Plan	MOP (2015 – 2021)	01/01/15 – 31/12/21	DTIRIS – DRE



HB BENGALLA MOD 2 1512 F2 Approved Operations 11 02 2016 Rev D

BENGALLA MINE

Approved Operations

FIGURE 2

State Significant Development 5170 – Modification 1

SSD-5170 was modified on 16 December 2015 by the Executive Director – Resource Assessments and Compliance for the DP&E as delegate of the Minister for Planning for the activities described in the *Bengalla Mine Development Consent Modification Statement of Environmental Effects* (Hansen Bailey, 2015a) (Bengalla SEE) including the *Bengalla Mine Development Consent Modification Response to Submissions* (Hansen Bailey, 2015b). The Bengalla SEE provides approval for the following Modifications:

- Alterations to various water management infrastructure components including:
    - Utilisation of the Satellite Pit as a temporary dirty water catchment dam;
    - Relocation of the Staged Discharge Dam and the Hunter River Salinity Trading Scheme (HRSTS) staged discharge release point;
    - Construction of clean water diversion levees in locations other than those already approved; and
    - Revised locations for the proposed relocation of the Hunter River and Washery Dams.
- Additional locations for the siting of the Explosives Storage Facility; and
- The placement of fill from the excavation of CW1 adjacent to it.

2.1.2 Environment Protection and Biodiversity Conservation Act 1999

EPBC Approval 2012/6378

On 27 May 2015 BMC was granted EPBC Approval 2012/6378 from the Acting Assistant Secretary of DoE. EPBC Approval 2012/6378 has effect until 31 December 2050.

2.2 PLANNING APPROVAL HISTORY

2.2.1 Original Approval

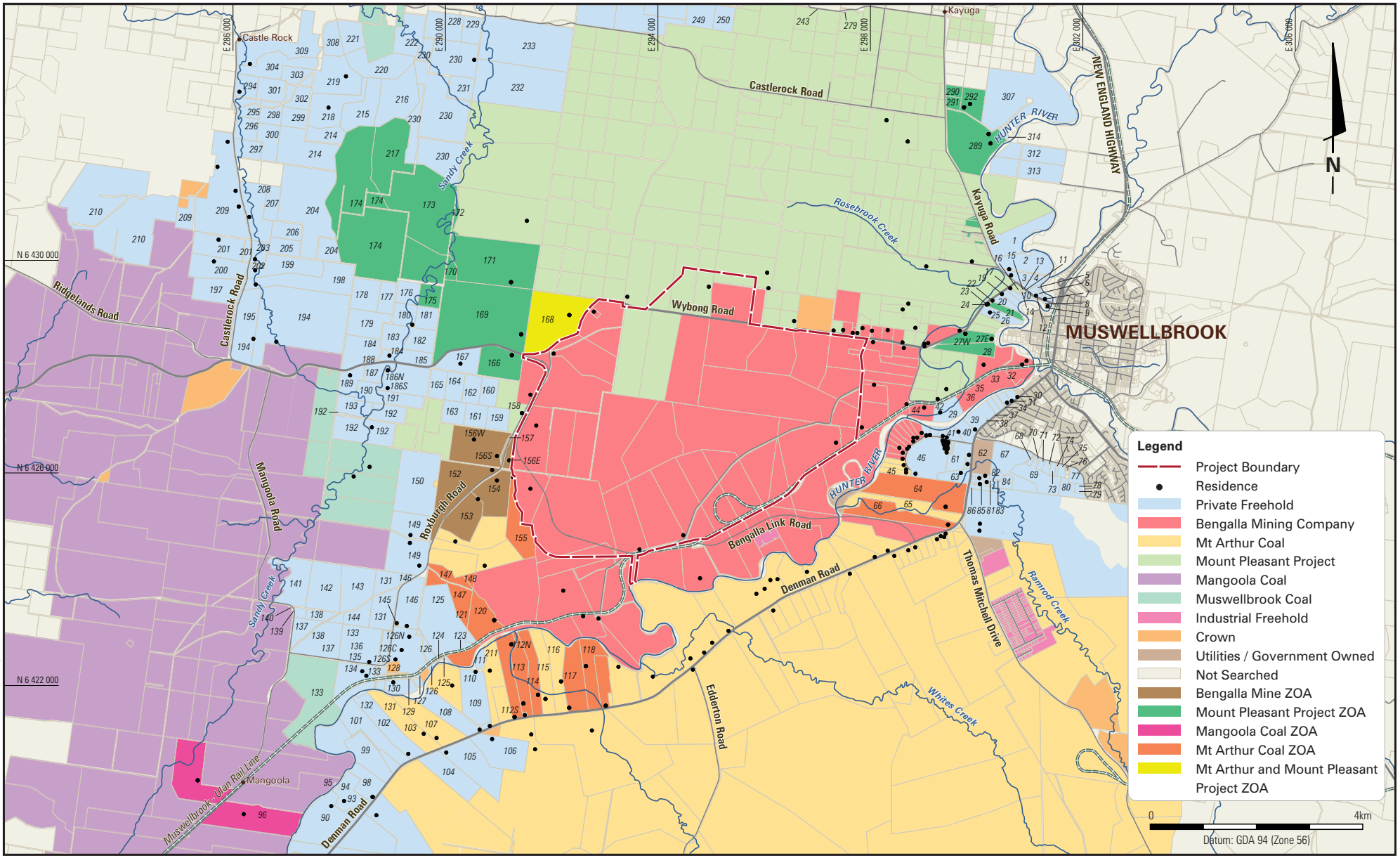
On 7 August 1995, BMC was granted development consent DA 211/93, which allowed for the "*Construction and operation of a surface coal mine, coal preparation plant, rail loop, loading facilities and associated facilities".* The original DA 211/93 was supported by the Bengalla 1993 EIS.

DA 211/93 was subsequently modified five times and has not yet been surrendered.

2.3 LAND OWNERSHIP

The ownership of land within and surrounding the Project Boundary with respect to this Modification is shown in **Figure 3**. The land to which this Modification applies is wholly owned by the BJV and Coal & Allied Operations Pty Limited (Coal & Allied). In January 2016, Rio Tinto Coal Australia reached an agreement for the sale of the Mount Pleasant Project to MACH Energy Australia Pty Ltd (MACH Energy). The agreement of the sale is subject to conditions and is expected to close in the second quarter of 2016.

The land to the south of Bengalla is held by Hunter Valley Energy Coal for the Mt Arthur Coal Mine.



HB BENGALLA MOD 2 1512 F3 Land Ownership 22 02 2016 Rev B

BENGALLA MINE

Land Ownership

FIGURE 3

3 MODIFICATION DESCRIPTION

This section provides a detailed description of this Modification. It also includes a discussion on the need for this Modification along with the alternatives considered.

3.1 MODIFICATION OVERVIEW

BMC is seeking approval from the NSW Minister for Planning or his delegate for a modification to SSD-5170. This Modification is sought under section 96(2) of the EP&A Act for the following:

- Alterations to the approved height of the Main OEA to improve visual amenity from primary viewing locations in and surrounding the township of Muswellbrook and Denman Road, in two selected locations (Visual Relief Areas):
    - The Northern Relief Area constructed to a maximum height of RL 300; and
    - The Southern Relief Area constructed to a maximum height of RL 290.
- Establishment of a new gravel access road from Wybong Road to the Dry Creek Diversion Project Construction Site Office being a former homestead (Homestead Access).

Modification interactions with the approved conceptual Year 4, Year 8 and Year 15 mine plans are presented on **Figure 4** to **Figure 6** respectively. All Modification components are located within the currently approved SSD-5170 (as Modified) Disturbance Boundary. A detailed description of each Modification element is provided below.

No other changes to the currently approved landform or mine scheduling are being sought as part of this Modification and as a result the mine plan as described in the Bengalla EIS (Hansen Bailey, 2013) have been utilised for assessment purposes.

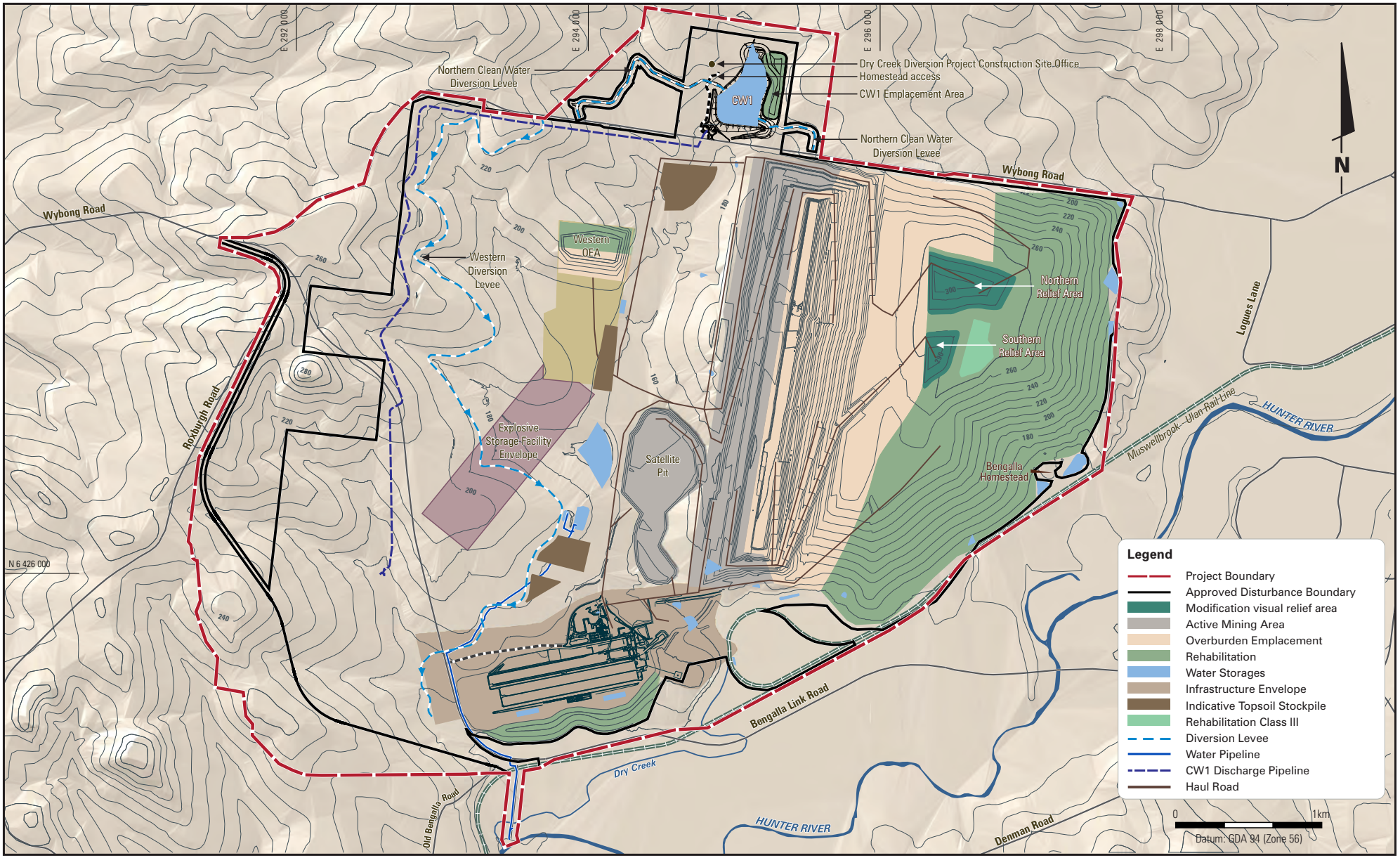
3.2 MODIFICATION NEED

During the stakeholder consultation process associated with the Bengalla EIS, BMC committed to investigate further options to improve the level appearance of the top of the Main OEA toward primary viewing locations from Muswellbrook and Denman Road.

This work was unable to be presented in the additional visual assessment and mitigation completed for the Bengalla EIS RTS (Hansen Bailey 2014). However, BMC acknowledged at the time that investigations into this possibility would be pursued and if an improved outcome was identified a Modification would be prepared and submitted for assessment.

This position was formally reiterated in the Department of Planning and Environment's *State Significant Development Assessment, Bengalla Continuation Project (SSD 5170) Secretary's Environmental Assessment Report* (DP&E 2014 pg. 17) which stated:

> *"On 22 September 2014, the Department met with representatives of Council to discuss its residual concerns with the proposed realignment of Bengalla Link Road and the final landform design.*
>
> *"Following the meeting BMC committed to reshaping the final landform to create a more natural terrain (micro-relief) as part of a future modification."*



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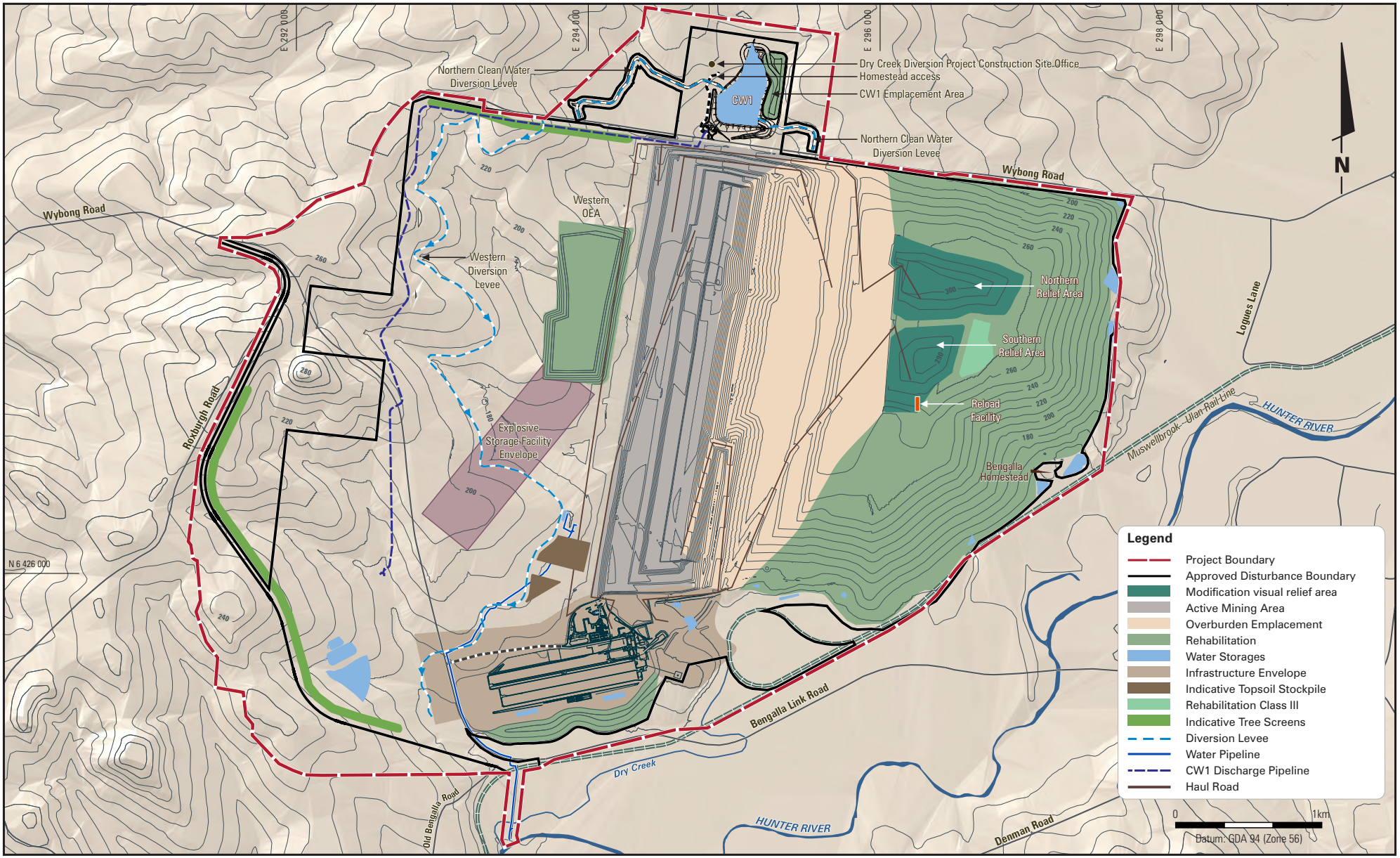
BENGALLA MINE

Modification Overview - Year 4 Mine Plan

FIGURE 4



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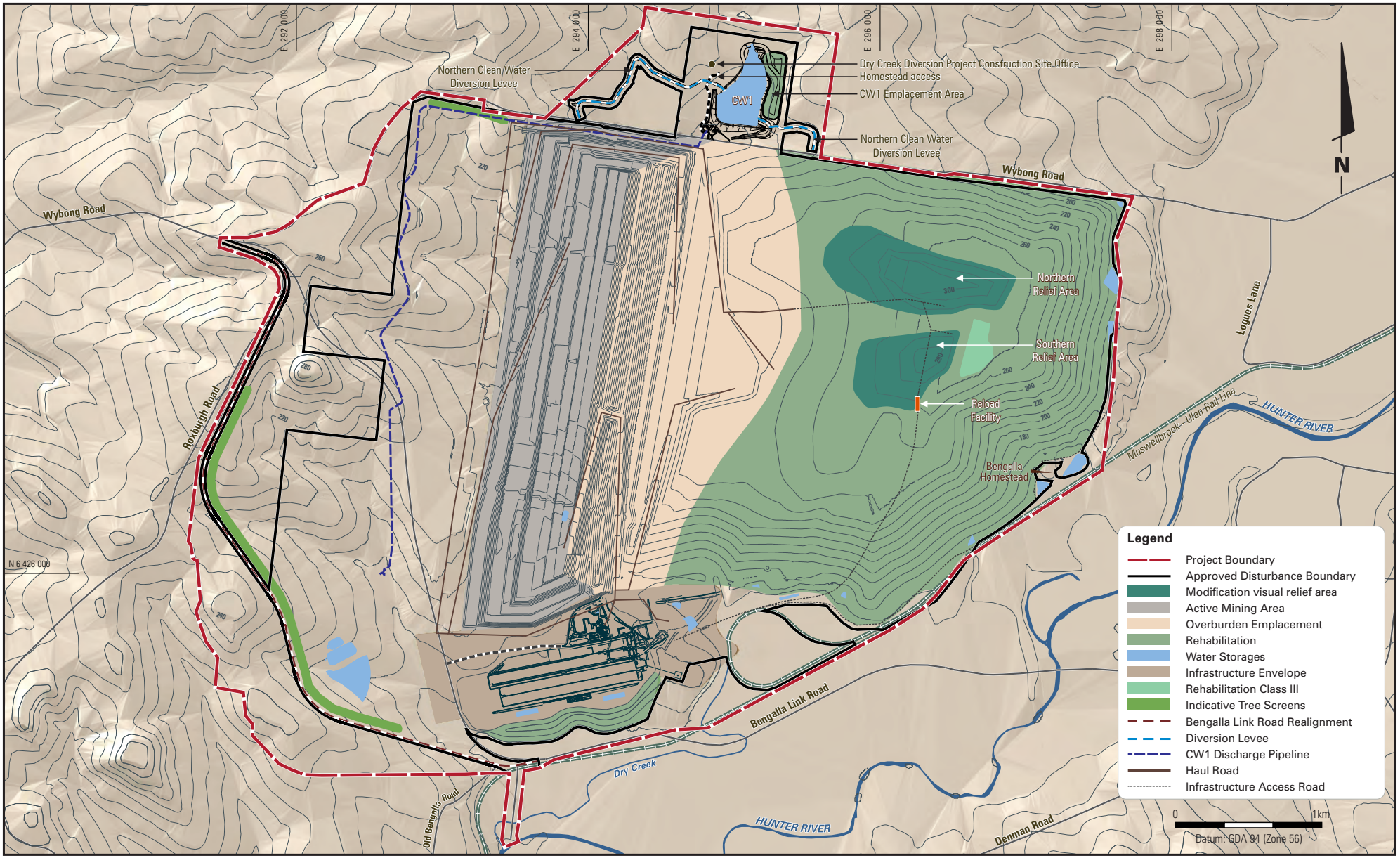
BENGALLA MINE

Modification Overview - Year 8 Mine Plan

FIGURE 5



HB BENGALLA MOD 2 1512 F6 Modification Overview - Year 15 Mine Plan 07 04 2016

BENGALLA MINE

Modification Overview - Year 15 Mine Plan

FIGURE 6

As discussed in **Section 2.1.1**, BMC was granted SSD-5170 on 3 March 2015 and BMC is now fulfilling this prior commitment to improve the level appearance of the Main OEA through this Modification. It is anticipated that should this Modification be approved it will provide an improved final landform that better blends to the surrounding natural landscape.

BMC has conducted consultation with MSC, additional mine planning and visual analysis with technical input from landscape architects and have determined that an improved final landform outcome can be achieved. BMC is now fulfilling this prior commitment to improve the level appearance of the Main OEA through this Modification.

The Homestead Access will ensure a safe dedicated access from the Wybong Road to the Homestead for ongoing use associated with the construction of the Dry Creek Diversion Project and other future requirements.

Discussion regarding the stakeholder consultation completed for this Modification is discussed in **Section 5**.

3.3 VISUAL RELIEF AREAS

Approved Operations

Overburden material is permitted to be emplaced within the Main OEA or in the western out of pit emplacement area (Western OEA). The Bengalla SEE (Hansen Bailey, 2015) enables excavated material associated with the construction of CW1 to be emplaced within the CW1 Emplacement Area.

Approved operations allow for the development of the Main OEA to a maximum height of RL 270. As Bengalla progresses west, the natural topography dips to the west and from approximately Year 8 to Year 24 the landform gradually slopes down from RL 270 to approximately RL 190 facilitating the future reinstatement of Dry Creek.

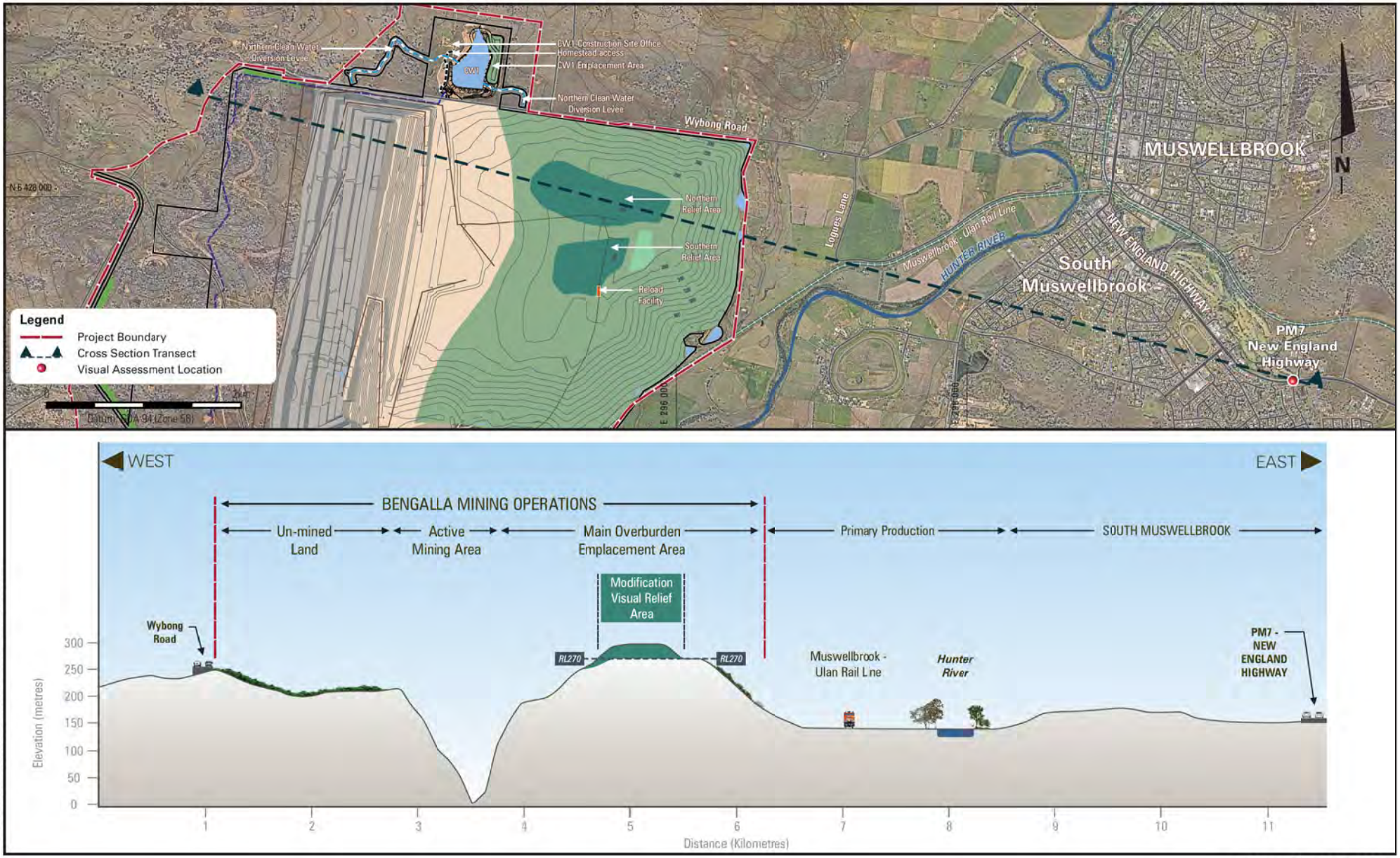
This Modification

This Modification is seeking approval to alter the currently approved final landform to change the level appearance of part of the Main OEA when viewed from primary viewing locations in and surrounding the township of Muswellbrook and Denman Road. The proposed Visual Relief Areas presented in this Modification has been designed to provide a final landform that better integrates with the surrounding natural topography.

Two key Visual Relief Areas, located on the existing Main OEA, are proposed to be constructed to a height greater than previously approved including:

- The Northern Relief Area constructed to a maximum height of RL 300; and
- The Southern Relief Area constructed to a maximum height of RL 290.

The Northern and Southern Relief Area comprise of 51.8 ha and 29.5 ha respectively. Cross sections depicting the Visual Relief Areas have been developed from both east-west and north-south alignments in relation to the Year 15 Mine Plan and are presented on **Figure 7** and **Figure 8** respectively.



H:\BENGALLA MOD 2 1512 F7 Cross Section East - West 08 04 2016

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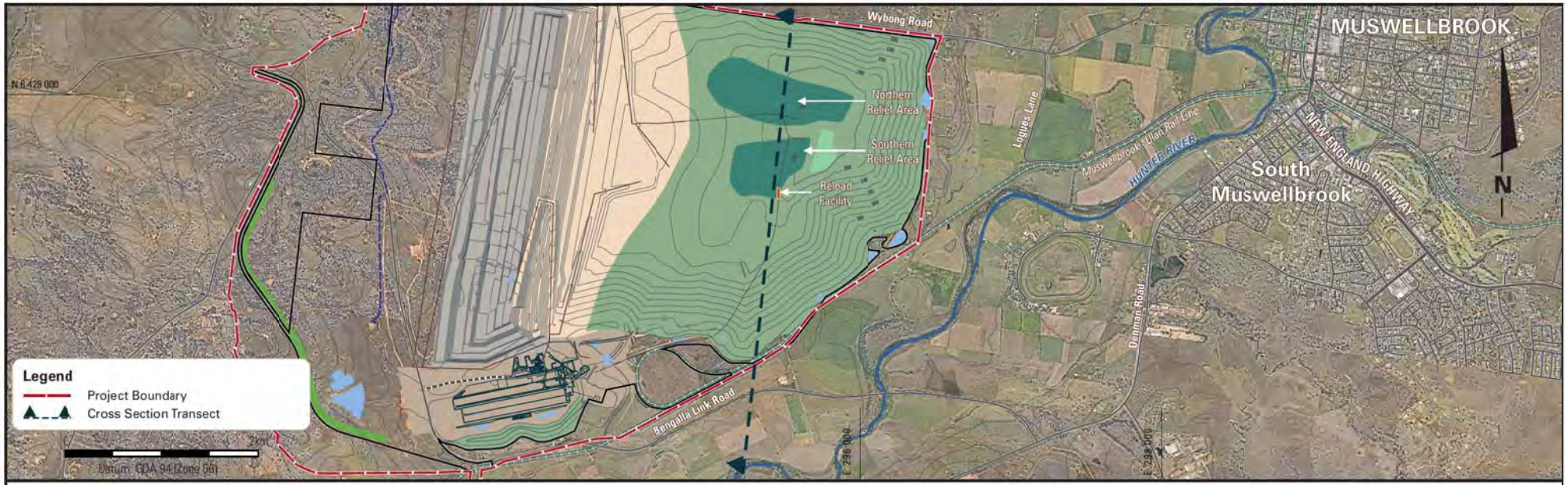
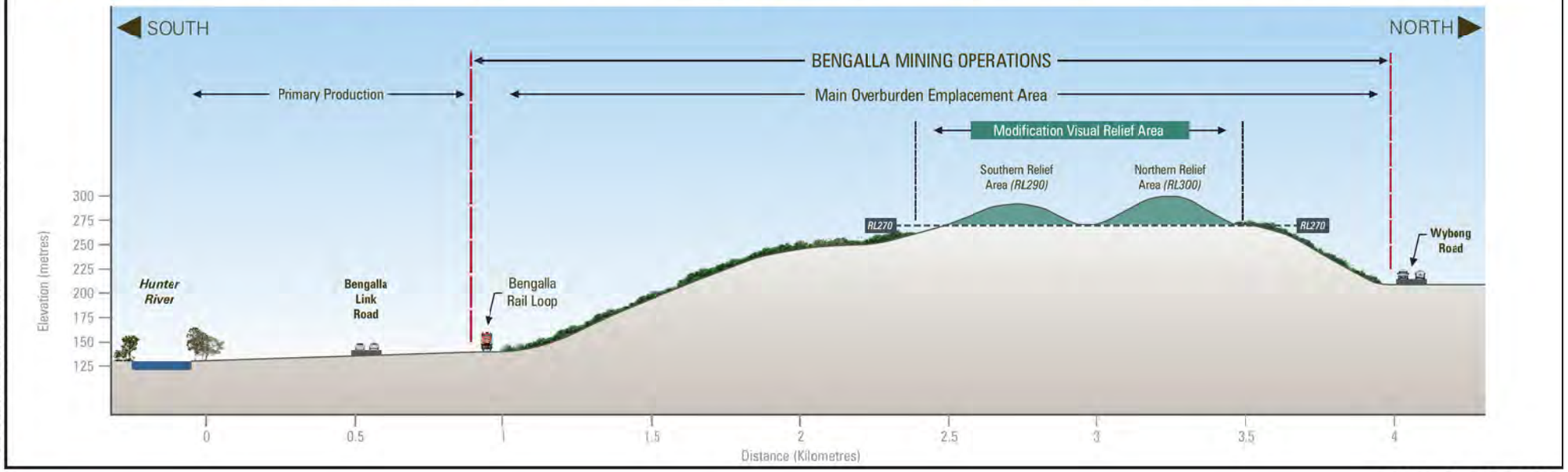
Cross Section East - West

FIGURE 7





H8 BENGALLA MOD 2 1512 F8 Cross Section North - South 08 04 2016

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Cross Section North - South

FIGURE 8

The changes to the height of part of the Main OEA when compared to the currently approved landform (up to RL 270) represent a 30 m and 20 m increase for the Northern and Southern Visual Relief Areas respectively. The revised conceptual final landform is presented on **Figure 9**. It is anticipated that should this Modification be approved that the revised conceptual final landform as presented on **Figure 9** will replace the existing conceptual final landform currently presented in Appendix 9 of SSD-5170.

As stated in the Bengalla EIS (Hansen Bailey, 2013), the northern portion of the Main OEA is required to remain steepened until approximately Year 4 of operations. The northern portion of the Main OEA will be progressively shaped and rehabilitated from approximately Year 4 up to approximately Year 8 parallel to the development of the Visual Relief Areas.

The Northern and Southern Visual Relief Areas have been designed to meet rehabilitation objectives of SSD-5170 Schedule 3, Condition 44 and 46. This Modification will provide a free-draining landform that maintains an overall slope of 10 degrees or less. Additional detail regarding rehabilitation and final landform is presented in **Section 7.9**.

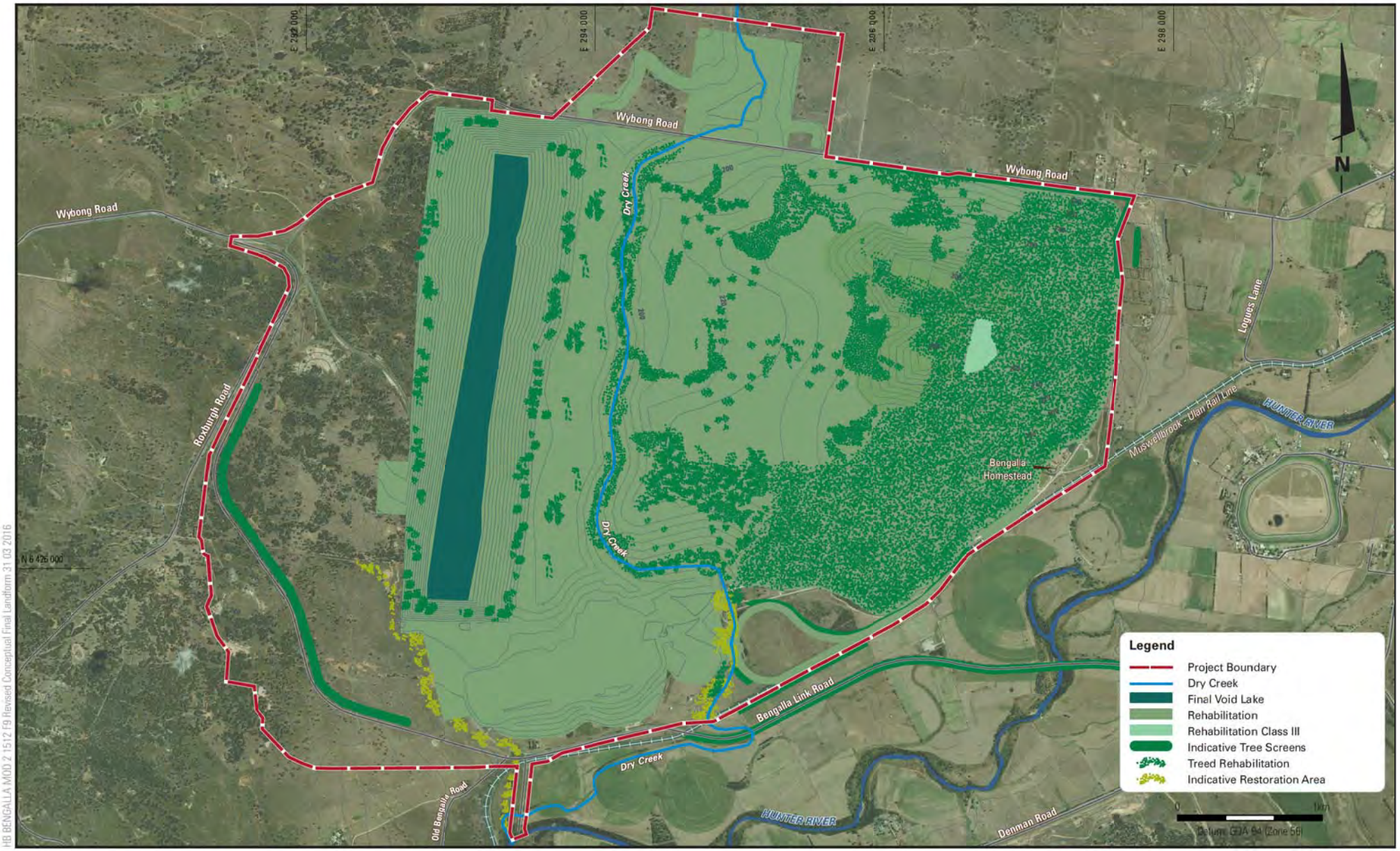
3.4 OVERBURDEN EMPLACEMENT DEVELOPMENT

This Modification has been designed to integrate with the existing operations from approximately Year 4 to approximately Year 9 of operations as approved in SSD-5170. The cumulative volume of the relief areas will be approximately 10 million bank cubic meters (Mbcm). The development of the Visual Relief Areas corresponding to the Year 4, Year 8 and Year 15 mine plans are presented on **Figure 4, Figure 5** and **Figure 6** respectively.

This Modification will not result in the excavation of any additional overburden material. It will simply result in 10 Mbcm of material being placed to create the two proposed Visual Relief Areas. This in turn will result in a decrease in elevation on average of approximately 1.5 m from the currently approved final landform to be created east of the future reinstatement of Dry Creek.

Under Condition 44 of Schedule 3 of SSD-5170, BMC has the requirement to ensure that the final landform *'is designed to incorporate natural micro-relief and natural drainage lines…… to integrate with surrounding landforms'*. The resultant overall lowering of the final landform east of the future reinstatement of Dry Creek may be further altered to incorporate micro relief. Further discussion regarding rehabilitation objectives are discussed in **Section 7.9**.

Consistent with existing overburden emplacement activities at Bengalla, development of the Visual Relief Areas will occur through proactive management of mobile and mining equipment to operate on elevated or exposed sections of the overburden emplacement area (including surface work) during the day/evening periods and on more shielded sections of the overburden emplacement area as required during the night period. The Year 4 and Year 8 staged mine plans have been selected for air quality and noise modelling as these years represent construction of the Visual Relief Areas and potential environmental impacts. Results from the air quality and noise assessments competed for this Modification are provided in **Section 7.2** and **Section 7.3** respectively.



HB BENGALLA MOD 2 1512 F9 Revised Conceptual Final Landform 31 03 2016

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Revised Conceptual Year 24 Mine Plan

FIGURE 9

3.5 HOMESTEAD ACCESS

Prior to the commencement of the Dry Creek Diversion Project, an access from the Wybong Road to the homestead was in situ. The existing access off Wybong Road is currently utilised by BMC to maintain access to the Dry Creek Diversion Project Infrastructure Area. The construction of the Dry Creek Diversion Project has resulted in part of the existing access from the Wybong Road to the homestead being removed.

BMC and Coal & Allied have agreed that an additional dedicated new access from the Wybong Road to the homestead (Homestead Access) would be constructed within the existing approved Disturbance Boundary and Mining lease (ML) 1645 Sub-lease 2 held by BMC (see **Figure 10**). The Homestead Access will then enable Mount Pleasant Project personnel to access the homestead.

Discussion relating to the Homestead Access traffic impacts in relation to the approved operations is provided in **Section 7.8**.

3.6 CONSTRUCTION ACTIVITIES

Development of the Visual Relief Areas will occur as part of the future mine schedule with works anticipated to commence in approximately Year 4 and be completed on both relief areas by approximately Year 9 of mining operations.

It is anticipated that the construction of the Homestead Access will be commenced shortly following approval (should it be granted) and following receipt of any subsequent MSC approvals as required. Construction activities associated with the Homestead Access will be conducted consistent with SSD-5170 (as Modified).

3.7 INTERACTION WITH THE MOUNT PLEASANT PROJECT

The Mount Pleasant Project is located to the immediate north of Bengalla's mining areas and is owned by Coal & Allied. In January 2016, Rio Tinto Coal Australia reached an agreement for the sale of the Mount Pleasant Project to MACH Energy. The agreement of the sale is subject to conditions and is expected to close in the second quarter of 2016. The Mount Pleasant Project holds DA 92/97 (as modified) which is supported by the *Mount Pleasant Mine Environmental Impact Statement* 1997 (MTP EIS) and the *Mount Pleasant Project Modification Environmental Assessment Report 2010* (MTP EA).

The Homestead Access is proposed to be constructed on land owned by Coal & Allied which all falls within Sub-lease 2 of ML 1645. Coal & Allied support the construction of the Homestead Access as proposed in this Modification (see **Section 3.5**).

HB BENGALLA MOD 2 1512 F10 CW1 Access Road 21 04 2016

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Homestead Access

FIGURE 10

3.8 COMPARISON OF THE APPROVED OPERATIONS TO THIS MODIFICATION

Table 2 provides a summary of key Modification components and comparison with the approved Bengalla.

Table 2
Key Modification Components and Comparison with Approved Bengalla

Component	Bengalla Existing (Approved)	Modification
Planning Approval & Supporting Documents	• Development Consent SSD-5170 (as Modified): o Bengalla Development Consent Modification SEE (Hansen Bailey 2015)	• Modification to Development Consent o This SEE
Life of Mine	28 February 2039	No change
Deposit	Up to 316 Mt ROM coal within mining areas	No Change
Mining Method	Open Cut - dragline, truck and excavator (machinery will be progressively upgraded)	No change
Production	Up to 15.0 Mtpa ROM coal	No change
Coal Transport	All product coal is transported by rail, up to 16 laden train movements per day	No Change
Operational Hours	Mining operations and coal processing 24 hours per day, seven days per week	No change
Equipment	Various as listed in the Bengalla EIS	No Change
Workforce	Up to 900 full time personnel (plus contractors)	No change
Disturbance Boundary	See **Figure 2**	No Change
Homestead Access	Access to Homestead via existing point of entry	Additional Homestead Access
Landform	• Maximum RL 270 development of the Main OEA • Emplacement of surplus overburden in the Western OEA • Emplacement of excavated material from CW1 in the Main OEA, Western OEA or in the CW1 Emplacement Area • Conceptual Final Landform as presented in SSD-5170 (as Modified).	• Change to maximum RL of Main OEA landform for Visual Relief Areas: o Northern Relief Area to RL 300; and o Southern Relief Area to RL 290. • No change to other approved emplacement areas • Revised Conceptual Final Landform (see **Figure 9**).

3.9 MODIFICATION JUSTIFICATION AND ALTERNATIVES CONSIDERED

The first task for the visual specialists engaged to develop an improved final landform outcome at Bengalla was to determine the minimum height variation that would be discernible at distance to provide for a noticeable alteration to the level appearance of the existing Main OEA. The key viewing locations included vantage points within the elevated areas of the township of Muswellbrook at distances of up to 6 km away. To improve the vista at these locations differences in elevation would need to be discernible.

The visual specialists review determined that increases to the current maximum height of the landform would be required to be greater than 20 m in order to provide for a noticeable alternation in terms of form, shape and line to more closely resemble the surrounding topography from this distance. The review also determined that it was necessary to develop two or more visual relief areas of varying heights to further enhance the resemblance of a natural landform and to avoid the obstruction of the distant skyline from some locations.

Following the preliminary planning and in order to determine the final design of the Visual Relief Areas the existing physical, environmental and economic constraints were then required to be considered. The consultation process undertaken with key stakeholders during the development of the Visual Relief Areas (see **Section 5**) further assisted in ensuring that the landform proposed by this Modification better meets current community and regulatory expectations.

Constraints that were considered when developing this Modification Visual Relief Areas include:

- Area of land currently situated at the approved height of RL 270 available to apply visual relief;
- Existing areas of established rehabilitation including areas of Class III land capability; and
- Nosie and air quality implications associated with the construction works.

A discussion regarding each of the above considerations along with an alternate option is provided below.

3.9.1 Area of Land Available Above RL 270

To create a landform that offers improved visual relief it was determined that increases to the current maximum height of the landform would be required to be greater than 20 m and consist of at least two separate relief areas. Having established the minimum height increase necessary and the number of visual relief areas, design plans incorporating these elements into the existing operation were developed. It was identified that the Main OEA at the currently approved maximum RL 270 would be required to be increased.

Due to the westerly progression of mining and nature of the existing topography the area of the Main OEA that will be available to house the Visual Relief Areas will not be fully developed until approximately Year 4 of operations. For optimum effect the Visual Relief Areas are proposed to be primarily positioned on that part of the Main OEA currently at or scheduled to be developed at RL 270 m. The total area of Main OEA available based on the existing approved mine plan is approximately 55 ha.

The establishment of an overall rehabilitation slope of less than 10 degrees has been the landform objective of BMC and is reflected in approval documents including the Bengalla EIS (Hansen Bailey, 2013) and existing Bengalla MOP (BMC, 2015). Due to the layout and small area of the Main OEA available it was then established that two relief areas would be effective within that footprint.

It was then confirmed that Visual Relief Areas with a 30 m and 20 m height increase above the RL 270 would be suitable to meet rehabilitation objectives and could be achieved which then formed the Northern and Southern Visual Relief Areas respectively. The Northern Relief Area was designed slightly larger (both higher and wider) to further provide for an irregular landform.

In order to determine the appropriateness of the Visual Relief Areas a view shed analysis was completed (see **Figure 11**). The view shed analysis was centred on the Visual Relief Areas and extended in a 6 km radius in all directions. The view shed analysis was designed to identify those locations where views to the Visual Relief Areas could be observed (excluding trees or man-made objects such as buildings and houses). The view shed analysis indicates that either all or part of the Visual Relief Areas are visible from a significant area of Muswellbrook and a section of Denman Road from Muswellbrook to approximately Edderton Road.

3.9.2 Existing Rehabilitation Including Areas of Class III Land Capability

A significant component of the established rehabilitation area is the 5.7 ha of Class III land located at the currently approved RL 270 (see **Figure 4**). This Class III land is covered in high quality pasture and was created from soils recovered from the construction of the Southern Overburden Emplacement Area (SOEA) following approval of, and commitments associated with, the *Bengalla Development Consent Modification Environmental Assessment* (Hansen Bailey, 2010) of the former DA 211/93.

The location of the Visual Relief Areas ensures all 5.7 ha of the Class III land rehabilitation could be maintained and that other areas of established rehabilitation would be avoided where practicable. This consideration resulted in the Southern Visual Relief Area not extending further to the east. This also results in a visual benefit by providing an irregular landform that varies in line and shape compared to the Northern Relief Area.

In addition, as the area of Class III land is located on the RL 270 and is associated with improved agricultural land high density woody vegetation will not be established in this area. Further discussion in regard to the requirement to achieve high density woody vegetation is included in **Section 7.9**.

Given the land area constraints identified above it is calculated that the Visual Relief Areas represent the use of approximately 47% of the total land currently approved at RL 270 (see **Table 3**). This is further increased to approximately 53% effective use when the existing 5.7 ha of Class III land is removed.

The constraints that exist at the RL 270 area result in the configuration of two relief areas being the Northern and Southern Relief Areas.

HB BENGALLA MOD 2 1512 F11 Visual Relief Area Viewshed Analysis 05 04 2016

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Visual Relief Area Visual Envelope Map

FIGURE 11

Table 3
Visual Relief Areas Area Analysis

Component	Area (ha)
Land currently at currently at RL 270	55
Class III Land Capability	5.7
Northern Relief Area above currently approved RL 270	20.6
Southern Relief Area above currently approved RL 270	5.3

3.9.3 Air Quality and Noise Implications Associated with Construction of the Visual Relief Areas

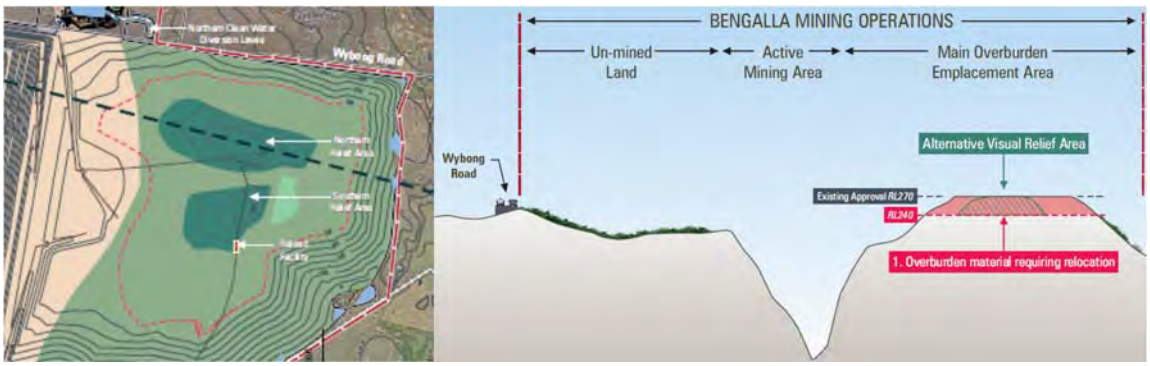
SSD-5170 Schedule 3, Condition 1 to 4 includes listed private receptors predicted to be impacted above applicable air quality and noise criterion. BMC would develop a landform that would, where possible, not result in any additional privately owned receptors requiring acquisition and or mitigation as a result of this Modification.

To achieve this goal construction of the Visual Relief Areas is scheduled to commence from approximately Year 4 onwards with emplacement commencing at a point as far west as practical (away from the majority of private receptors) whilst still achieving visual benefits.

3.9.4 Alternate Option

An alternative to the option of increasing the height of the Main OEA was to create a landform where, in places, was lower than the currently approved RL 270 in order to provide for visual relief. In order to create a similar level of visible undulation from up to 6 km the same principles were applied i.e. creation of a landform with two knolls at 30 m and 20 m respectively. However to be visible the lowering of the Main OEA would be required to commence on the eastern face at RL 240 and then extend west to the corresponding RL on the opposite face of the existing Main OEA over an area of approximately 314 ha (see **Plate 1**). The volume of material required to be either removed from the Main OEA or not emplaced results in the generation of a greater amount of material movement than sought for this Modification.

Plate 1
Alternate Landform Option



It was determined that this alternate option (lowering the height of the Main OEA) would result in additional air quality and noise impacts to private receptors due to the following:

- Requirement to rehandle material in addition to existing approved mining operations;
- Alterations to the location and duration of mining operations e.g. additional haul roads;
- Loss of part of the 'bunding' effect provided by the already established Main OEA.

3.9.5 Additional Implications of the Alternate Option

In addition to the likely increased air quality and noise impacts to private receptors this option would also result in the following implications to existing operations:

- Disturbance to in-situ reject emplacement cells within the existing Main OEA;
- Requirement for a significant amendment of future mine planning to accommodate the lowering of the existing Main OEA and associated material re-emplacement;
- Likely implications for the final landform and design developed for the future re-instatement of Dry Creek;
- Requirement to remove a significant area of existing established rehabilitation including impacts to areas of Class III land; and
- Significant cost associated with the rehandle and rehabilitation of material.

Based on the assessment of the above this alternate option was not considered further. Further discussion in relation to the air quality and noise impacts arising from this Modification is provided in **Section 7.2** and **Section 7.3** respectively.

3.9.6 Improved Amended Final Landform

It has been determined that the Visual Relief Areas sought in this Modification provides an improved final landform with minimal additional environmental impacts. Should this Modification be approved it will ensure:

- The development of an improved final landform that provides for a noticeable alteration at distance (4 km to 6 km) to the level appearance of the existing Main OEA that better blends to the surrounding natural landscape;
- No significant additional air quality or noise impacts at private receptors;
- An achievable landform that will not significantly impede Bengalla's existing or future mining operation; and
- Achieve commitments previously made by BMC in developing an improved final landform outcome.

4 REGULATORY FRAMEWORK

This section briefly describes the regulatory framework under which Bengalla Mine is approved to operate as relevant to this Modification. It discusses the ability of the Minister for Planning and Infrastructure to modify SSD-5170 under section 96(2) of the EP&A Act and the approvals process.

4.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

4.1.1 Existing Development Consent

On 3 March 2015, the Secretary of the DP&E as delegate of the Minister for Planning granted SSD-5170 for the Bengalla Continuation Project under section 89E of the EP&A Act. The supporting documents for SSD-5170 is the Bengalla EIS (Hansen Bailey, 2013) and as modified by the Bengalla EIS RTS (Hansen Bailey, 2014).

SSD-5170 was modified on 16 December 2015 by the Executive Director – Resource Assessments and Compliance for the DP&E as delegate of the Minister for Planning for the Bengalla SEE (Hansen Bailey, 2015).

4.1.2 Power to Modify

Section 96 of the EP&A Act allows for a Development Consent to be modified by the consent authority to which the original application was made. In this instance the Minister for Planning. Section 96(2) (a) of the EP&A Act states:

> *96 (2) "A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*
>
> > *(a) It is satisfied that the development to which the consent as modified relates is substantially the same as the development for which consent was originally granted and before that consent was originally granted was modified (if at all)".*

Under Section 96(2) the consent authority must be satisfied that what is proposed is no more than to "modify" (i.e. alter without radical transformation) the proposed development (including this Modification and any previous modifications) such that it remains '*substantially the same development*' as the originally approved development.

Bengalla as Originally Approved

Bengalla as originally approved in SSD-5170 includes the following features:

- Continued open cut mining west of the then operations at a rate of up to 15 Mtpa ROM coal for 24 years to a total of not more than 316 Mt;
- Continued use of the existing dragline, truck fleet and excavator fleet (with progressive replacement or substitution with equivalent);
- An out of mining area OEA to the west of Dry Creek, which may be utilised to store excess overburden material until it is intercepted by mining;

- Continued use, extension or relocation of existing infrastructure, including administration and parking facilities, in-mining area facilities (including dragline shut down and erection pad), helipad, tyre laydown area, explosives and reload storage facility, core shed, workshop, roads, reject bin, ROM hopper, stockpiles, conveyors, water management infrastructure, bioremediation area, supporting power infrastructure, rail and rail loading infrastructure and ancillary infrastructure;
- Construction and use of various items of new infrastructure (including radio tower, extensions to the MIA, additional raw coal stockpile and upgrade to the ROM coal stockpile (along with associated conveyor network) generally as shown on the infrastructure plans and construction of the Mount Pleasant Staged Discharge Dam and associated water reticulation infrastructure;
- Processing, handling and transportation of coal via the (upgraded) CHPP and rail loop for export and domestic sale;
- Continued rejects and tailings co-disposal in the Main OEA and in a temporary in-mine reject emplacement area;
- Relocation of a 6 km section of Bengalla Link Road at approximately Year 15 near the existing mine access road to facilitate coal extraction;
- The diversion of Dry Creek via dams and pipe work with a later permanent realignment of Dry Creek through rehabilitated areas when emplacement areas are suitably advanced;
- Relocation of water storage infrastructure as mining progresses through existing dams (including the Staged Discharge Dam and raw water dam); and
- A workforce of up to 900 full time equivalent personnel (plus contractors) at peak production.

Bengalla as Modified

SSD-5170 was modified under section 96 of the EP&A Act generally in accordance with the description the Bengalla SEE (Hansen Bailey, 2015) on 16 December 2015 (Mod 1). Mod 1 authorises:

- Alterations to various water management infrastructure components including:
    - Utilisation of the Satellite Pit as a temporary dirty water catchment dam;
    - Relocation of the Staged Discharge Dam and the Hunter River Salinity Trading Scheme (HRSTS) staged discharge release point;
    - Construction of clean water diversion levees in locations other than those already approved; and
    - Revised locations for the proposed relocation of the Hunter River and Washery Dams.
- Additional locations for the siting of the Explosives Storage Facility; and
- The placement of fill from the excavation of CW1 adjacent to it.

This Modification

If this Modification is approved, SSD-5170 (as Modified) will have the following additional features as compared to the originally approved development:

- Alterations to the approved height of the Main OEA to improve visual amenity from primary viewing locations in and surrounding the township of Muswellbrook and Denman Road, in two selected locations (Visual Relief Areas):
    - The Northern Relief Area constructed to a maximum height of RL 300; and
    - The Southern Relief Area constructed to a maximum height of RL 290.
- Establishment of a new gravel access road from Wybong Road to the Dry Creek Diversion Project Construction Site Office being a former homestead (Homestead Access).

A description of this Modification is provided in **Section 3.1**.

Substantially the Same Development

The proposed changes to the Main OEA in comparison to the elements approved under SSD-5170 (as Modified) will not result in any substantial changes to the development as originally approved. Assessment of this Modification (discussed further in **Section 7**) has shown that environmental impacts are minimal.

This Modification will be wholly contained within an approved Disturbance Boundary (impacts from activities within which have already been the subject of a biodiversity offsets package). As a result, the alterations to the development will not impact on areas containing listed species or communities of flora or fauna under the *Threatened Species Conservation Act 1995* (TSC Act) or EPBC Act beyond the areas already approved for disturbance and subject to the very large existing biodiversity offsets package.

This Modification will not result in any change to the core elements of SSD-5170 (as Modified) such as:

- Total coal production quantities and rates, overburden generation or duration of mining;
- Existing method of mining or destination of ROM and product coal;
- The character and location of the currently approved infrastructure components; and
- Existing manning levels.

Mining operations associated with this Modification will occur within the existing Mining Leases utilising the approved open-cut coal mining methods and the same equipment as that proposed in the Bengalla EIS. Additional discussion comparing the approved operations with this Modification is provided in **Section 3.8** and summarised in **Table 2**.

It is open to the Minister to be satisfied that the proposed modified development is substantially the same development for which SSD-5170 was originally granted and that the Minister (or his delegate) can determine this application for Modification to the Development Consent.

4.1.3 Need for a Statement of Environmental Effects

Clause 115 of the *Environmental Planning and Assessment Regulation 2000* NSW (EP&A Reg) sets out the information which is required to accompany any application for modification of a development consent. That information is set out in **Table 4**, with reference made to where each requirement is addressed in this SEE.

Table 4
Statement of Environmental Effects Requirements

Clause of Regulation	Information Required	Where it is provided in this SEE
115(1) An application for modification of a development consent under section 96 (1), (1A) or (2) or 96AA (1) of the Act must contain the following information:		
(a)	the name and address of the applicant,	**Section 1.3**
(b)	a description of the development to be carried out under the consent (as previously modified),	**Section 2.1**
(c)	the address, and formal particulars of title, of the land on which the development is to be carried out,	No Change to the land set out in the existing development consent (see SSD-5170, Appendix 1)
(d)	a description of the proposed modification to the development consent,	**Section 3**
(e)	a statement that indicates either: (i) that the modification is merely intended to correct a minor error, mis-description or miscalculation, or	N/A
	(ii) that the modification is intended to have some other effect, as specified in the statement	**Section 4.1.2**
(f)	a description of the expected impacts of the modification,	**Section 7**
(g)	an undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved,	**Section 4.1.2**
(h)	if the applicant is not the owner of the land, a statement signed by the owner of the land to the effect that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner),	No land is owned by an Aboriginal Land Council. Accordingly landowner consent not required for this application.
(i)	a statement as to whether the application is being made to the Court (under section 96) or to the consent authority (under section 96AA), and, if the consent authority so requires, must be in the form approved by that authority.	**Section 4.1.2**

4.1.4 Matters for Consideration in Determining Modification Applications

Section 96(3) of the EP&A Act provides:

> *(b) "In determining an application for modification of a consent under this section, the consent authority must take into consideration such of the matters referred to in section 79C (1) as are of relevance to the development the subject of the application."*

The matters referred to in section 79C (1) relevant to the application for Modification to SSD-5170 include:

- The provisions of any environmental planning instrument that applies to the land the subject of the Modification, being:
  - *Muswellbrook Local Environmental Plan* (LEP) 2009 (Muswellbrook LEP);
  - *Hunter Regional Environmental Plan* (REP) 1989 (Hunter REP); and
  - SEPP Mining.
- Any Development Control Plan;
- Any planning agreement that has been entered into under Section 93F, or any draft planning agreement that a developer has offered to enter into under Section 93F;
- The regulations that apply to the land to which the development application relates;
- The likely impacts of the development including environmental impacts on both the natural and built environments, and social environmental impacts on the locality;
- The suitability of the site for the development;
- Any submissions made in accordance with the EP&A Act or the regulations; and
- The public interest.

4.2 RELEVANT PLANNING INSTRUMENTS

4.2.1 Muswellbrook LEP (2009)

All of the elements of this Modification are located entirely within the Muswellbrook LGA on land zoned as "RU1 Primary Production" and as "E3 Environmental Management" under the Muswellbrook LEP.

The land use table in the Muswellbrook LEP renders mining:

a) Permissible with development consent on land zones RU1; and

b) Is prohibited within Zone E3.

However, the permissibility of mining developments is also governed by the Mining SEPP. Clause 7(1) of the Mining SEPP provides:

> ***"7 Development permissible with consent***
>
> *(1)* ***Mining***
> *Development for any of the following purposes may be carried out only with development consent: …*
>
> *(b) mining carried out:*
>
> *(i) on land where development for the purposes of agriculture or industry may be carried out (with or without development consent), or*
>
> *(ii) on land that is, immediately before the commencement of this clause, the subject of a mining lease under the Mining Act 1992 or a mining licence under the Offshore Minerals Act 1999."*

The Muswellbrook LEP provides that development for the purposes of 'extensive agriculture' is permissible within Zone E3. By virtue of clause 7(1)(b)(i) of the Mining SEPP, mining is also permissible within Zone E3. This is inconsistent with the land use table in the Muswellbrook LEP. Clause 5 of the Mining SEPP states that where there is an inconsistency between the SEPP and another Environmental Planning Instrument (EPI), the SEPP will prevail to the extent of the inconsistency. Clause 1.9 of the *Muswellbrook Local Environmental Plan 2009* says "*This Plan is subject to the provisions of any state environmental planning policy that prevails over this plan as provided by section 36 of the Act*." Therefore, the Mining SEPP overrides the Muswellbrook LEP, resulting in mining being permissible in Zone E3 with Development Consent.

4.2.2 Hunter Regional Environment Plan 1989 (heritage) (Hunter REP)

Hunter REP applies to all land within the Muswellbrook local government area (amongst others). Hunter REP aims to conserve the environmental heritage of the Hunter Region and encourage historical and cultural conservation. Items of state, regional and local heritage significance are listed under schedules 1, 2 and 3 of the Hunter REP. None of these heritage items are located in proximity to any element of this Modification.

There are no heritage items listed in the Hunter REP within the area affected by this Modification Application.

4.2.3 SEPP (Mining, Petroleum Production and Extractive Industries) 2007 (SEPP Mining)

Under Clause 7 of SEPP Mining, the proposed development modification is permissible with consent under the EP&A Act.

The matters for consideration in development applications (and modifications) are set out in Part 3 of SEPP Mining. The matters for consideration and an overview statement of how the works/activities proposed by this modification interact with those matters is set out in **Table 5** below.

Table 5
SEPP Mining Considerations

Clause No.	Matter	Modification
12AB (3)	Non Discretionary Development Standards for Mining – Cumulative Noise Level	The development does not result in any additional cumulative amenity noise levels greater than those set out in Table 2.1 of the INP for any private dwellings.
12AB(4)	– Cumulative Air Quality Level	The development does not result in any additional cumulative annual average levels greater than 30 micrograms per cubic metre of PM_{10} for any private dwellings.
12AB(5)	– Air blast overpressure	Works or activities the subject of this Modification will not involve any blasting.
12AB(6)	– Ground Vibration	Ground vibration caused by the works/activities the subject of this Modification will not exceed 10 mm/sec (peak particle velocity) at any time and will not exceed 5 mm/sec (peak particle velocity) for more than 5% of the time.
12AB(7)	– Aquifer interference	This Modification works/activities will not exceed the respective water table, water pressure and water quality requirements specified in Table 1 of the Aquifer Interference Policy.
12	Compatibility with other Land Uses	The works/activities are not expected to have any impact on “preferred uses of land in the vicinity of the development” and are not considered to be incompatible with those existing approved or likely preferred uses.
13	Compatibility with mining industry	The works/activities the subject of this Modification are not considered to be inconsistent with or to have any impact on current or future extraction or recovery of minerals.
14	Natural Resource Management	The works/activities the subject of this Modification do not include any mineral extractions.
15	Resource Recovery	The works/activities the subject of this Modification will not impact on resource recovery as they relate to areas outside of future identified coal resource (and in the case of the new access road will not prevent any future extraction).
16	Transport	The works/activities the subject of this Modification will not result in any additional traffic impacts.
17	Rehabilitation	The works/activities the subject of this Modification are primarily rehabilitation of areas previously mined. The relevant aspects are assessed in **Section 7.9** of the SEE.

4.2.4 Gateway Process

Clause 119A of the EP&A Reg requires that a modification application that relates to *"mining or petroleum development"* on certain land is required to be accompanied by either a Gateway Certificate or a Site Verification Certificate.

'*mining or petroleum, development*' is defined for the purposes of the gateway requirements in clause 17A of SEPP Mining. That definition excludes areas where a mining lease is not required to be issued to enable the development to be carried out because there is a current mining lease.

All Modification elements are *"proposed to be carried out"* within existing mining leases (ML 1397, and Sub-lease 2 of ML 1645). Accordingly, there is no requirement for a Gateway Certificate or a Site Verification Certificate to be issued in order to make this application.

4.3 APPROVALS UNDER OTHER NSW LEGISLATION

4.3.1 Protection of the Environment Operations Act 1997

Section 48 of the *Protection of the Environment Operations Act 1997* (POEO Act) provides that an Environment Protection Licence (EPL) is required in respect of premises at which any "… s*cheduled activity is carried on* …". Coal works and coal mining are scheduled activities.

BMC holds EPL 6538 in respect to its currently approved mining operations for DA 211/93 (as Modified) and SSD-5170 (as Modified).

The POEO Act provides for licensing of pollution by the NSW Environment Protection Authority (EPA) which administers the POEO Act. Should the Minister for Planning consider it appropriate to grant approval for this Modification, a variation to EPL 6538 will be sought if required such that the existing EPL encapsulates this Modification activities.

4.3.2 Mining Act 1992

This Modification Application does not relate to any new mining or material changes to mining operations. No new mining leases will be required to authorise the activities proposed by this application.

4.3.3 Native Vegetation Act 2003

Section 89J of the EP&A Act lists the approvals that are not required for approved developments under Division 4.1 of Part 4. Section 89J (1)(e) provides that an authorisation under section 12 of the Native Vegetation Act is "*… not required for State significant development that is authorised by a development consent …*".

In any event, no native vegetation will be removed as a result of this Modification other than that for which SSD 5170 (as Modified), as presently in force, authorises.

4.3.4 National Parks and Wildlife Act 1974

Relevantly Section 89J also provides that an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the *National Parks and Wildlife Act 1974* (NPW Act) is not required for any SSD that has been granted Development Consent. Therefore, an AHIP will not be required in connection with the activities authorised by the development consent if this Modification is approved.

This proposed Modification is located entirely within the Disturbance Boundary of SSD-5170 (as Modified). Aboriginal archaeological surveys and salvage programs have previously collected all Aboriginal artefacts identified in this area. This Modification is therefore not predicted to impact on Aboriginal heritage (see **Section 7.6**).

Aboriginal heritage will continue to be managed in accordance with the relevant conditions stipulated as part of SSD-5170 (as Modified) and the approved Bengalla *Aboriginal Archaeological and Cultural Heritage Management Plan* (as Modified) (ACHMP) (Hansen Bailey, 2015).

4.3.5 Water Management Act 2000 and Water Act 1912

The licensing and approvals provisions of the *Water Management Act 2000* (WM Act) apply (in general terms) to water sources that are subject to a Water Sharing Plan (WSP). Parts 2 and 5 of the *Water Act 1912* (Water Act) continue to apply to water sources that are not subject to a WSP.

No water sources regulated under the Water Act will be affected by the proposed activities.

This Modification will not result in an increase of the maximum approved water take from water sources regulated under the WM Act and therefore no additional water access licences will be required. BMC will continue to hold all relevant licences, share component and allocation required to comply with the WM Act and Water Act at all times water is taken, whether during or after the life of the Project.

4.3.6 Dams Safety Act 1978

The *Dams Safety Act 1978* (Dams Safety Act) requires the NSW Dams Safety Committee (DSC) to "*formulate measures to ensure the safety of dams*" and to "*maintain a surveillance of prescribed dams*". A "prescribed dam" is any dam listed under Schedule 1 of the Dams Safety Act.

BMC's existing Staged Discharge Dam and CW1 (currently being constructed) are listed as a Prescribed Dam under the Dams Safety Act. All prescribed dams at Bengalla will be operated under a safety management system which complies with the requirements of the DSC.

This Modification will not result in the construction of or changes to any other dams that are subject to regulation under the Dams Safety Act by the DSC.

4.3.7 Roads Act 1993

Under section 138 of the *Roads Act 1993* (Roads Act), work cannot be carried out in, on or over a public road unless the appropriate roads authority has given consent. Consent under section 138 may be required to facilitate the construction of the Homestead Access of Wybong Road. Since Wybong Road is a council road, this work will require the consent of MSC.

Pursuant to section 89K(1)(f) of the EP&A Act, the necessary consents under section 138 of the Roads Act cannot be refused if they are required for the carrying out of a project that has been granted Development Consent under the EP&A Act.

4.4 COMMONWEALTH LEGISLATION

4.4.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

If a proposed action is likely to have a significant effect on one or more '*Matters of National Environmental Significance'* (MNES), the action is deemed to be a '*controlled action'*. The approval of the Commonwealth Minister for the Environment must be obtained before a controlled action can be carried out.

The Project was referred to the Minister for the Environment on 30 April 2012 and was subsequently determined to be a controlled action on 7 June 2012 as it was considered that it was likely to have a significant effect on "*Listed threatened species and communities"* (sections 18 & 18A). On 24 September 2013, BMC was further notified by the Minister for the Environment that the additional controlling provisions in accordance with section 24D and 24E associated with significant impacts to a water resource would also apply to Bengalla.

On 27 May 2015, BMC was granted EPBC Act Approval 2012/6378 for the proposed action to:

> *(c) "To continue open cut coal mining operations at the Bengalla Mine, approximately 4 km west of Muswellbrook in the Upper Hunter Valley, NSW for a further 24 years (See EPBC Act Referral 2012/6378), including the variation to the action as approved on 18 January 2013 to realign the southern section of the project boundary and expand a portion of the disturbance boundary".*

This Modification will not result in the disturbance of additional vegetation located outside of the Disturbance Boundary approved under SSD-5170 (as Modified). As such, this proposed Modification will not result in significant impacts to EPBC listed species and vegetation communities.

This Modification has also considered the potential impacts on water resources in relation to the Federal Guidelines: *Matters of National Environmental Significance Significant Impact Guidelines 1.1* and the *Significant Impact Guidelines 1.3; Coal seam gas and large coal mining developments – impacts on water resources* (EPBC Water Guidelines). Section 1.1.2 of the EPBC Water Guidelines state:

> *"The core purpose of these guidelines is to assist any person who proposes to take an action which involves a … large coal mining development to decide whether the action has or is likely to have a significant impact on a water resource."*

A *"large coal mining development"* is defined under the EPBC Act (section 528) as:

> *"any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):*
>
> *(a) in its own right; or*
>
> *(b) when considered with other developments, whether past, present or reasonably foreseeable developments."*

The following extracts from the EPBC Water Guidelines are also relevant to this Modification:

> *"3.6 An expansion or modification to existing facilities may be within the definition of'… 'large coal mining development' if the expansion or modification involves extractive … coal mining activities which are likely to have a significant impact on a water resource."*

And

> *"4.2.1 If a referral for a proposed expansion or modification to a project does not involve extraction of … coal, then it will not be within the definition of … 'large coal mining development', and the water trigger will not apply …."*

And

> *"3.4. Extraction of CSG or coal*
>
> *The definitions of '… 'large coal mining development' relate to impacts on a water resource of activities that form part of the process of extracting coal …. The development of associated infrastructure that is not part of the extraction process is not included in the definitions of … large coal mining development.*
>
> *Extraction of … coal must form part of the activity and not merely be associated with it. Where referred along with new or modified extraction of … coal, the following activities will form part of the extractive process:*
>
> - *water supply for use in the extraction of … coal*
> - *management of water generated as a result of extraction of … coal, such as holding dams or water treatment facilities*
> - *management of waste generated as a result of extraction of … coal, such as spoil heaps.*
>
> *However, these activities will not independently be … coal mining development where there is no new or modified extraction of … coal…."*
>
> *"3.5. Associated infrastructure*
>
> *The development of associated infrastructure that is not part of the extraction process is not included in the definitions of'… 'large coal mining development'. This may include:*
>
> - *transport infrastructure, such as pipelines, road or rail infrastructure*
> - *office/housing and amenity construction*
> - *environment protection, monitoring and associated land management activities…*"

The activities, the subject of this Modification, do not include any *"new or modified extraction of … coal…."*. They relate purely to the "*management of waste generated as a result of extraction of … coal* " and to "*associated infrastructure that is not part of the extraction process*" (the extraction process itself was all assessed and approved under EPBC 2012/6378) and is not proposed to change under this Modification.

Further, the area to be cleared in association with this Modification activities will not result in additional impacts to MNES as assessed and approved under EPBC 2012/6378.

This Modification will not constitute a '*controlled action'* for any impacts to MNES and there is no requirement to refer the Action under Section 68 of the EPBC Act to the Federal Minister for the Environment for an approval under Part 9 of the EPBC Act.

5 STAKEHOLDER ENGAGEMENT

This section provides a summary of the stakeholder engagement undertaken for this Modification by BMC.

5.1 STAKEHOLDER ENGAGEMENT

Table 6 outlines the consultation activities undertaken for this Modification. The stakeholder engagement program over this Modification included consultation with Local and State government agencies and meetings with the BMC Community Consultative Committee.

An important element of the stakeholder engagement program completed for this Modification included consultation with the MSC. Environmental outcomes were presented to MSC to demonstrate the benefits of this Modification particularly associated with the development of the improved final landform.

Table 6
Stakeholder Engagement and Consultation

Stakeholder	Consultation
DP&E	• SEE Modification briefing (25 February 2016)
MSC	• SEE Modification briefing (17 February 2016) • SEE Modification briefing to MSC Councilor Working Group (22 February 2016)
DRE	• SEE Modification briefing (2 March 2016)
BMC Community Consultative Committee	• SEE Modification briefing (25 November 2015) • SEE Modification update (24 February 2016)
Bengalla Dry Creek Project Community Reference Group	• SEE Modification briefing (24 March 2016)
Mt Arthur Coal	• SEE Modification briefing, landform and rehabilitation objectives discussion (March 2016)
Local Community	• Local community newsletter & invitation to visual display showing (5 April 2016)

5.2 ONGOING STAKEHOLDER ENGAGEMENT

Various communication and engagement mechanisms, as required, will continue to be implemented to ensure the effective ongoing engagement with key stakeholders. Key stakeholder consultation avenues that are maintained by BMC include:

- Consultation with the Muswellbrook community as required;
- Updates to the BMC Community Consultative Committee;
- Community Open Day (as required by BMC management every two years); and
- Preparation and distribution of the Bengalla Annual Review.

6 RISK ASSESSMENT

This section provides a discussion as to the development of the risk assessment utilised for assessment in this SEE.

6.1 BACKGROUND

A risk assessment was completed to identify potential environmental and socio-economic issues associated with this Modification. The primary purpose of the risk assessment process was to prioritise and focus the required environmental and socio-economic impact studies required for the SEE.

Each of the potential environmental issues was ranked in accordance with the BMC HSEQ Risk Classification Matrix (see **Appendix A**) as being of low, moderate, significant, high or critical risk. The risk rating allocated to an impact is dependent upon the probability of the impact occurring and the potential consequences should the impact materialise.

Each of the environmental and social-economic issues has been assessed and where appropriate, management and mitigation options developed.

Due to the nature of this Modification no environmental aspects provided a critical or high risk. Visual, air quality, acoustics impacts along with rehabilitation and final landform were determined to be of moderate risk with all remaining environmental issues deemed to be low risk primarily due to the Modification components all being located entirely within the Disturbance Boundary of SSD-5170 (as Modified). **Table 7** summarises findings from the risk assessment.

Table 7
Environmental and Socio-Economic Risk Rating

Critical	High	Moderate	Low
None	None	Visual	Water Resources
		Air Quality	Ecology
		Acoustics	Aboriginal Archaeology
		Rehabilitation and Final Landform	Non-Aboriginal Heritage
			Traffic