

## 1.0 INTRODUCTION

### 1.1 Overview

This Environmental Assessment (EA) has been prepared to support an application by Whitehaven Coal Limited (“the Proponent”) for a new Project Approval under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to expand operations at the company’s Rocglen Coal Mine in the Gunnedah Basin of northern New South Wales (NSW) (see **Figure 1**). A copy of the project application form is contained within **Appendix A**.

The Rocglen Coal Mine (formally known as Belmont Coal Project) was originally approved by the Minister on the 15 April 2008 under Project Approval PA 06\_0198. It was classified as a Major Project in accordance with the former *State Environmental Planning Policy (Major Projects) 2005* and, subsequently, was determined under Part 3A of the EP&A Act. A copy of the original Project Approval is contained within **Appendix B**. The mining lease (ML 1620) was issued for the Rocglen operation in June 2008 and coal production subsequently commenced in late 2008.

Following further drilling and definition of the local geological features, as well as additional reviews of the mine plan, Whitehaven now propose to expand operations at Rocglen in order to maximise resource recovery and allow for improved mine progression. The Project, if approved, would permit up to 5 Mt of coal, not previously considered in the life of mine plan, to be extracted. This represents an increase in coal recovery from Rocglen by close to 30 percent. At a maximum recovery rate of 1.5 Mt run-of-mine (ROM) coal annually, this will increase the projected life of the operation for coal extraction by up to four years.

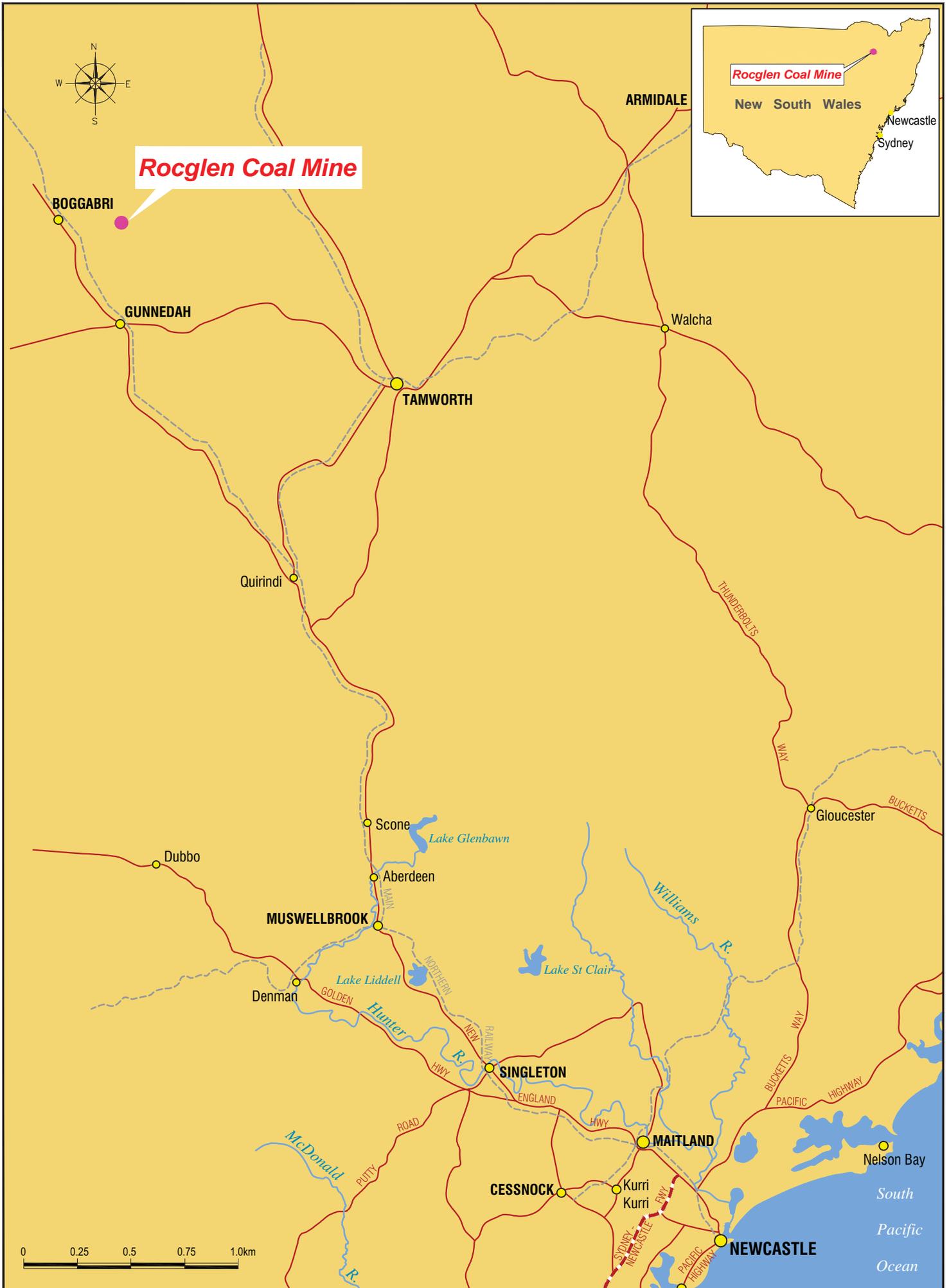
A Preliminary Environmental Assessment (PEA) for the Rocglen Coal Mine Extension Project was submitted to the NSW Department of Planning (DoP) in December 2009, with the Director-General’s Requirements (DGRs) issued in March 2010. Consultation has also been undertaken with other relevant local and state government agencies, local Aboriginal groups and surrounding residents. The methods and outcomes of this consultation are outlined below in **Section 2.0**.

In addition to describing the Project, this EA contains relevant background information and a description of the existing environment and current approved mining operations at Rocglen. It includes a comprehensive and relevant assessment of the planning, development, operation, rehabilitation and environmental management and monitoring matters to a level of detail commensurate with the scale of the Project, industry standards and the legislative framework under which the Project is permitted.

### 1.2 Project Site

The Rocglen Coal Mine is located in the Gunnedah Basin of northern NSW, approximately 320 kilometres (km) north-west of Newcastle. **Figure 2** positions the mine in its regional setting on Wean Road approximately 25 km north of Gunnedah and 23 km south-east of Boggabri.

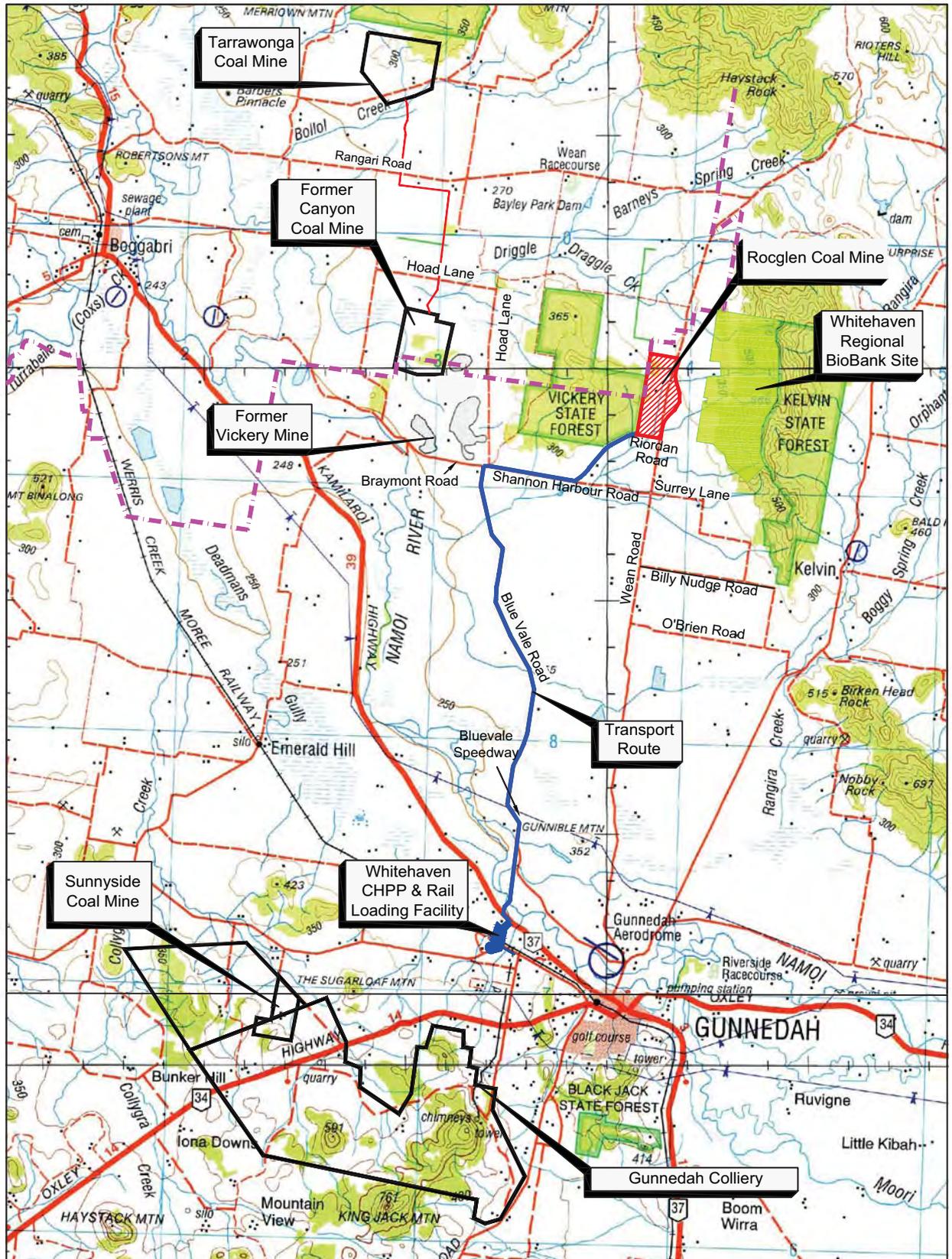
The Project Site is defined on **Figure 3** and encompasses the areas within which mining and mining-related activities are currently approved under PA 06\_0198 (see **Section 1.6**) and those additional areas that are subject to the new Part 3A Project Application (see **Section 1.7**). As evident, the Project Site extends beyond the bounds of the existing mining lease identified as ML 1620.



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Rocglen Coal Mine Extension Project  
 Locality Plan

**FIGURE 1**



**LEGEND**

- Current Mine Lease Boundary
- Approved Transport Route
- - - Gunnedah / Narrabri Shire Boundary



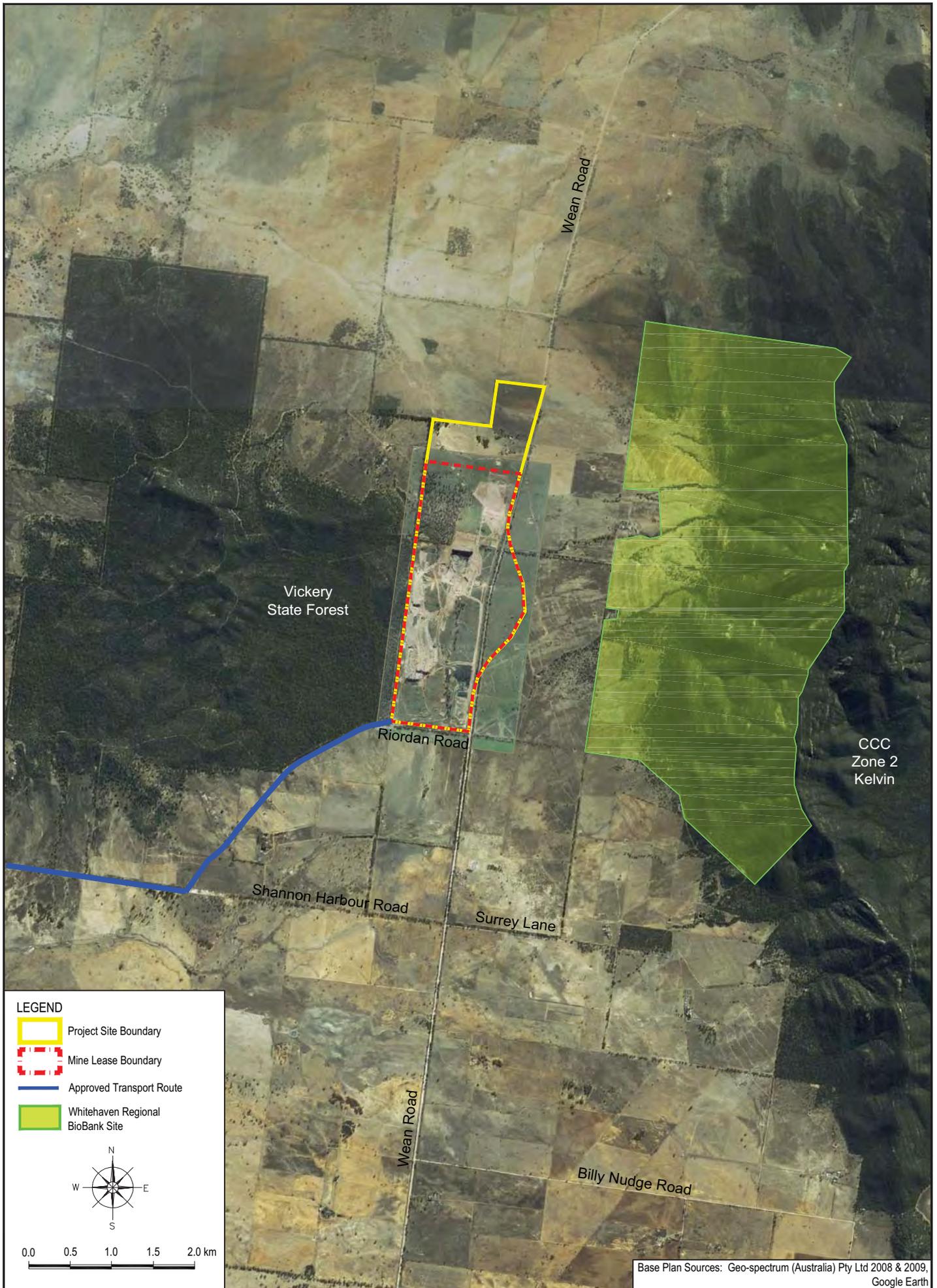
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**Rocglen Coal Mine Extension Project  
Regional Setting**

**FIGURE 2**



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### 1.3 The Proponent

Whitehaven Coal Limited (Whitehaven) is a publicly listed mining company formed to explore and develop the coal resources within the Gunnedah Region of NSW. The company is now the leading coal producer in the Gunnedah Basin, employing over 250 people, and is listed on the Australian Securities Exchange (ASX:WHC).

Whitehaven has an interest in tenements covering approximately 427 square kilometres (km<sup>2</sup>) within northwest NSW. In addition to the Rocglen Coal Mine, the Whitehaven Group operates three open cut mines, being Tarrawonga, Werris Creek and Sunnyside, and is developing the Narrabri North underground mine. The company's Canyon Coal Mine (open cut) is currently undergoing final rehabilitation.

The company also operates the Whitehaven Coal Handling and Preparation Plant (CHPP) and rail loading facility, located approximately 6 km west of Gunnedah.

### 1.4 Project Team

GSS Environmental (GSSE) has prepared this EA on behalf of Whitehaven including the completion of a number of detailed assessments. The following external consultants undertook specialist studies to assist in the assessment of the Project:

- PAEHolmes – Air Quality Impact Assessment;
- Spectrum Acoustics – Noise and Vibration Impact Assessment;
- Douglas Partners – Hydrogeological Assessment;
- RPS – Flora and Fauna Assessment and Cultural Heritage Survey and Assessment; and
- Eco Logical Australia (ELA) – Biodiversity Offset Strategy.

The assessment of surface water, soils and land resources, visual amenity, and rehabilitation and mine closure were undertaken by GSSE's in-house consultants.

Mine design and annual sequencing information has been provided by Whitehaven's contracted mining engineering company MMG Civil, and preliminary geotechnical assessment of the proposed final highwall stability has been undertaken by Whitehaven's contracted geotechnical engineering company GE Holt and Associates (GHA).

Whitehaven's Mr Brian Cullen (General Manager – Technical Services) and Mr Danny Young (Group Environmental Manager) provided direction in terms of project scope, technical input and assisted in finalising the EA.

### 1.5 Environmental Assessment Structure

The purpose of this EA is to enable consideration of the implications of proceeding with the Rocglen Coal Mine Extension Project. The EA has been prepared in accordance with the EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). The matters addressed within the EA are presented in a manner that clearly addresses the specific requirements of the Director-General (DGRs), as well as the requirements of other consulted government agencies.

The EA is presented in two volumes, with Volume 1 containing the main text and Volume 2 containing additional supporting information including the specialist assessment reports.

In summary, Volume 1 of the EA is structured as follows:

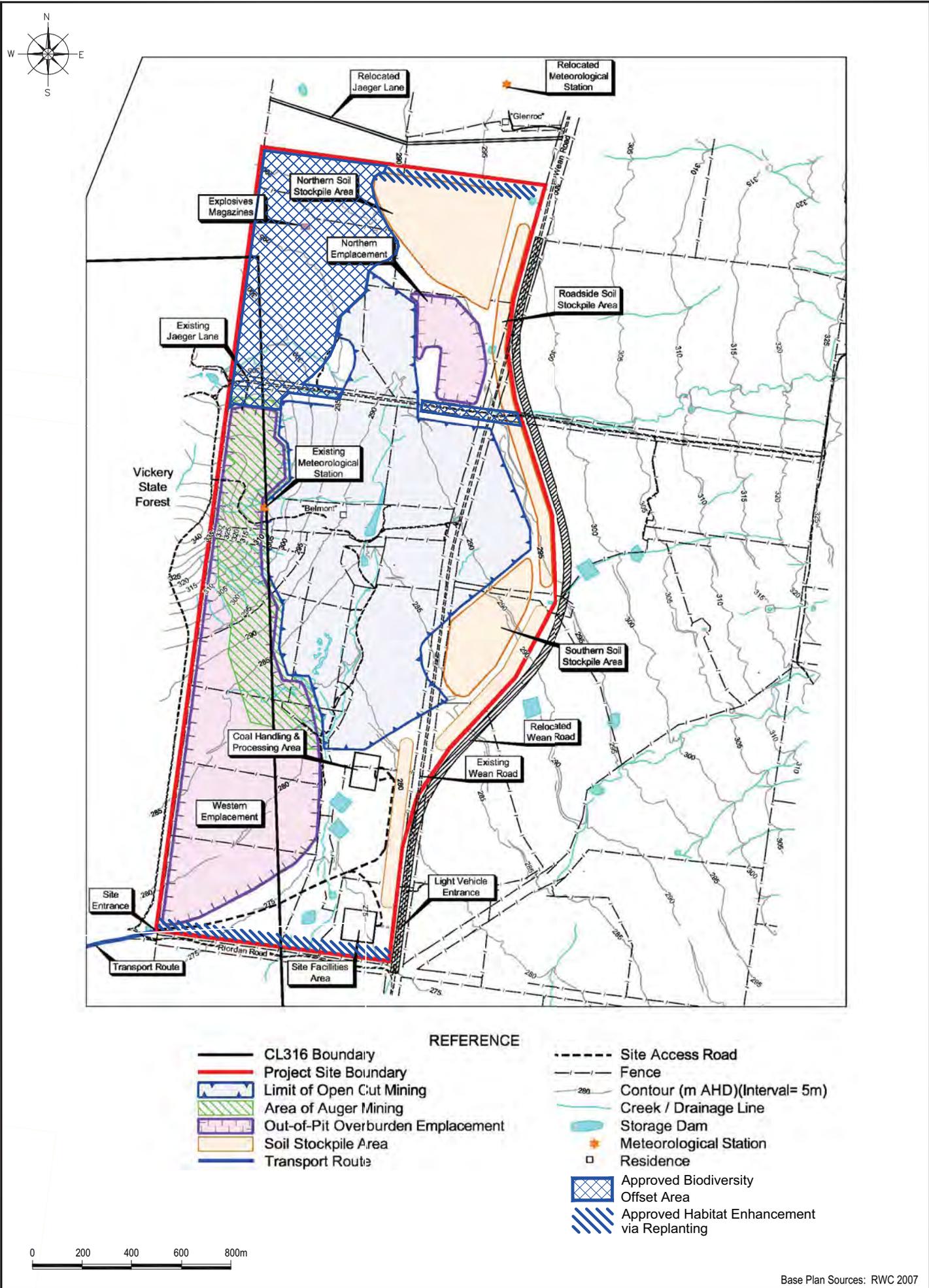
- Section 1:** introduces the Proponent and the Project team involved in producing the EA, outlines the Project background, provides a summary of the primary Project components, and nominates the approval pathway.
- Section 2:** outlines the process used to identify and prioritise the issues to be addressed within the EA, including stakeholder consultation activities and project risk assessment.
- Section 3:** provides an overview of the Project Site in terms of locality, land ownership, surrounding land uses, climate, topography, geology and soils.
- Section 4:** provides a description of the existing approved operations.
- Section 5:** provides a detailed description of the proposed Project.
- Section 6:** describes the planning approval and environmental legislative framework for the Project, including the applicability of Commonwealth and State legislation, as well as local planning instruments.
- Section 7:** contains a description of the existing environment and an assessment of the potential environmental issues/impacts relevant to the Project, including cumulative impacts.
- Section 8:** lists the Statement of Commitments proposed to be adopted throughout the life of the Project in order to mitigate potential adverse impacts and ensure appropriate management and monitoring.
- Section 9:** outlines the justification for the Project and contains the conclusion to the EA.
- Section 10:** lists the reference documents referred to within the EA.
- Section 11:** lists abbreviations used within the EA.

## 1.6 Approved Mine Operations

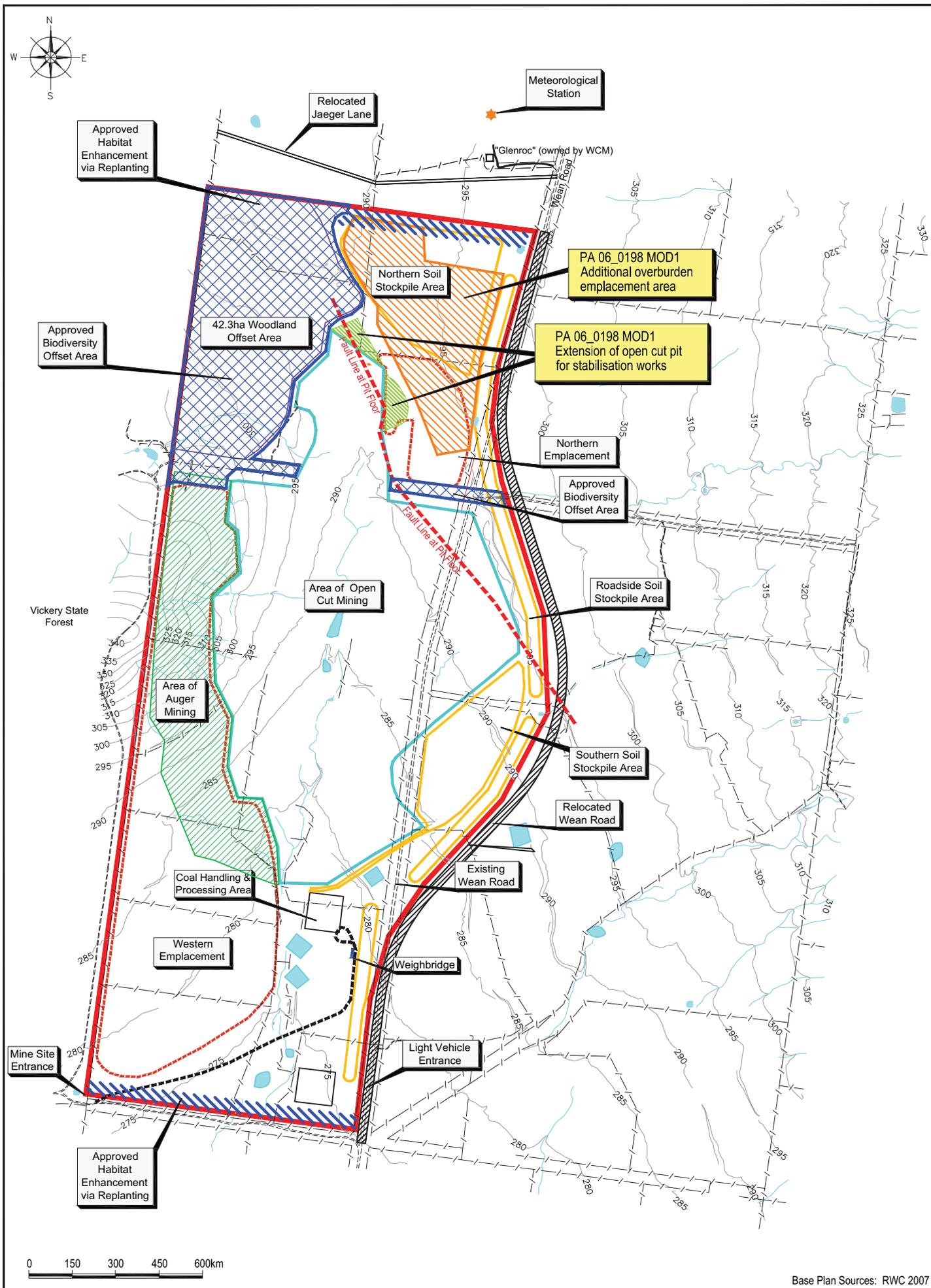
The Rocglen Coal Mine (formally known as Belmont Coal Project) was originally approved by the Minister on the 15 April 2008 under Project Approval PA 06\_0198. It was classified as a Major Project in accordance with the former SEPP (Major Projects) 2005 and, subsequently, was determined under Part 3A of the EP&A Act. A copy of the original Project Approval is contained within **Appendix B** and the approved mine layout is shown on **Figure 4**.

The mining lease (ML 1620) was issued for the Rocglen operation in June 2008 and coal production subsequently commenced in late 2008. Approximately 1.5 million tonnes of coal per annum (Mtpa) is mined using truck and excavator method. The coal is transported approximately 30 km by road to the Whitehaven CHPP for selective washing and subsequent transport by rail to the Port of Newcastle or by road to domestic customers.

On the 27 May 2010, the Minister issued an approval under Section 75W of the EP&A Act to modify Project Approval PA 06\_0198 (06\_0198 MOD 1). This modification permitted Whitehaven to undertake unplanned emergency earthworks to stabilise the eastern highwall following slipping adjacent to a fault structure in the north eastern portion of the approved open cut pit. The areas required to be worked to achieve a stable highwall were partially outside of the open cut limit approved under PA 06\_0198. A copy of the Notice of Modification is contained within **Appendix C** and the works approved under the modification are shown on **Figure 5**.



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Base Plan Sources: RWC 2007

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Rocglen Coal Mine Extension Project  
Approved Modified Mine Layout (PA 06\_0198 MOD1)

FIGURE 5



In summary, the activities approved at Rocglen under Project Approval PA 06\_0198 (and subsequent modification, PA 06\_0198 MOD 1) are:

- **Coal Mining by Open Cut Mining Methods** – extraction of coal by open cut mining methods within an area of approximately 114 hectares. This involves the extraction of three separate coal seams, being the Upper Glenroc, Lower Glenroc and Belmont Seams, at a production rate of 1.5 Mtpa. The pit extensions approved for stabilisation works under PA 06\_0198 MOD 1 have a combined area of approximately 2.05 hectares, giving a total approved open cut area of approximately 116.05 hectares.
- **Auger Mining** – extraction of additional coal reserves that are uneconomical to extract by open cut mining methods using auger mining techniques.
- **On-Site Coal Processing** – transfer of mined coal by haul truck to a coal handling and processing area located immediately south of the limit of the open cut pit for crushing, screening and loading into trucks for transport off-site.
- **Transportation** – transportation of crushed and screened coal approximately 30 km to the Whitehaven CHPP, via a purpose built section of road between Rocglen and Hoad Lane, and from Hoad Lane via an established coal haulage route for selective washing, stockpiling and dispatch by both rail and road. A proportion of the coarse and fine reject material from the CHPP is approved to be backloaded to Rocglen for placement in the mined-out areas of the open cut.
- **Relocation of Public Roads** – relocation of sections of Wean Road (not yet undertaken) and Jaeger Lane (completed) to allow for open-cut mining activities and infrastructure within these areas.
- **Rehabilitation** – progressive use of out-of-pit and in-pit overburden emplacements to shape and recreate the landform comparable to that of the pre-mining environment. Approximately 84.4 hectares of the disturbed area is to be restored as rehabilitated native vegetation with the remaining 152.6 hectares to be restored to rehabilitated agricultural land.
- **Biodiversity Offset Strategy** – offsetting the disturbance to remnant native vegetation through the protection and rehabilitation of approximately 195.3 hectares of land, comprising the protection of 44.9 hectares of remnant woodland, enhancement planting and rehabilitation to 90.4 hectares and an additional 60 hectares within the Whitehaven Regional BioBank Site.

Based on the open cut reserves at the time of approval and a maximum production rate of 1.5 Mtpa, the Rocglen Coal Mine was anticipated to have a production life for coal extraction of between seven to ten years.

## 1.7 Project Overview

Following further drilling and definition of local geological features, as well as additional reviews of the mine plan, Whitehaven proposes to expand operations at the Rocglen Coal Mine in order to maximise resource recovery and allow for improved mine progression.

The objectives of the Rocglen Coal Mine Extension Project are to:

- Develop the on-going open cut operations with a focus on:
  - maximising resource recovery and maintaining continuity of coal production from the existing Rocglen Coal Mine beyond the currently projected life of mine;

- maximising the use of existing infrastructure; and
- securing on-going employment opportunities and socio-economic flow-on benefits;
- Provide additional out-of-pit emplacement area to accommodate overburden material from the existing operations and proposed pit expansion; and
- Continue to conduct mining at Rocglen in an environmentally responsible manner to ensure the potential for adverse impact is minimised.

The primary components of the Project, over and above the current operations, to be assessed and determined under Part 3A are summarised in the below dot-points. It is intended that the Rocglen Extension Project will be fully integrated with the remaining operational life of the current approved Rocglen mine, which will enable Whitehaven to operate under a single Project Approval over the life of the Project. **Figure 6** illustrates the layout of the Project Site as proposed under the Rocglen Extension Project.

- **Expansion of Open Cut Pit** – expansion of the open cut pit design limit in order to access up to an additional 5 Mt of coal not previously considered in the life of mine plan. This will increase coal recovery at Rocglen by close to 30 percent. The footprint of the open cut pit will increase by approximately 50 hectares to a total open cut mined area of approximately 164 hectares. Coal will continue to be extracted from the expanded pit at the approved production rate of 1.5 Mtpa and using the open cut mining methods approved at Rocglen.
- **Extension to Life of Mine** – it is anticipated that coal extraction activities will occur for approximately 11 years following the issue of Project Approval and the subsequent issue of a new or amended mining lease. This represents an increase to the projected life of mine, for coal extraction, of up to four years.
- **Expansion of Northern Emplacement Area** - expansion in the footprint and height of the out-of-pit Northern Emplacement Area in order to accommodate a maximum of 12 million bank cubic meters (Mbcm), or 15 million loose cubic metres (Mlcm) accounting for swell, of overburden from the current operations and proposed pit expansion. The maximum design height of the expanded Northern Emplacement Area will be 50 metres above pre-mining landform, which is the approximate height of the adjacent ridge to the west of the Project Site at 340 metres Australian Height Datum (AHD). Early re-profiling and revegetation of the external batter slopes of the emplacement area will be undertaken to minimise visual impacts and limit erosion and downstream sedimentation.
- **Replacement of Soil Stockpile Areas** – the soil stockpiling areas identified as the Northern and Southern Soil Stockpile Areas will be replaced by the proposed Eastern and Western Soil Stockpile Areas to cater for the expanded open cut pit and Northern Emplacement Area. While all of the topsoil currently in the Northern Stockpile Area will be relocated, the majority of subsoil in this area will remain and will be covered with overburden due to sufficient soil material being available for rehabilitation from the expanded operation. The material to be relocated will be placed in either proposed new designated soil stockpile areas or placed directly onto areas available for rehabilitation.
- **Revised Rehabilitation and Mine Closure** - Whitehaven will continue to adopt a progressive approach to rehabilitation throughout the life of the mine. The rehabilitation and mine closure methodologies will essentially remain as currently approved under PA 06\_0198, with the primary differences being the configuration of the final landform and final land use. Of the total anticipated disturbance area of approximately 358 hectares, it is proposed to restore approximately 206 hectares as rehabilitated bushland (58 percent), 147 hectares as rehabilitated pasture (41 percent), with the remaining 5 hectares comprising the retained highwall of the final void (1 percent).



- **Revised Biodiversity Offset Strategy** – a revised *Biodiversity Offset Strategy* has been prepared to compensate for the Project impacts and the impacts to the previously approved offset areas (i.e. cumulative impacts) on a 'like for like' basis with the equivalent of over 525 hectares of vegetation to be offset within the Whitehaven Regional BioBank Site. The *Strategy* will provide an offset to impact ratio of 4.75:1. The Whitehaven Regional BioBank Site is in the final stages of registration by the DECCW as a BioBank Site under Part 7A of the Threatened Species Conservation Act 1995 (TSC Act). It will be actively managed via a BioBanking Management Plan with in-perpetuity management funding, and will have the highest level of conservation status outside of National Parks (via a BioBanking Agreement registered on the land title in-perpetuity).
  
- **Other Minor Project Related Works:**
  - Altered surface water management to effectively cater for the expanded operations;
  - Relocation of the Mine Water Dam to cater for the expanded open cut pit;
  - Relocation of a section of Jaeger Lane (that has already been relocated under PA 06\_0198) to cater for the expanded Northern Emplacement Area;
  - Removal of the building improvements within the "Glenroc" property, which is owned by Whitehaven, to cater for the expanded Northern Emplacement Area;
  - Relocation of the meteorological station and high volume air sampler (HVAS) used to monitor the concentration of particulate matter less than 10 micrometres (PM<sub>10</sub>) located within the "Glenroc" property to elsewhere within or adjacent to the Project Site to ensure adequate separation from the expanded Northern Emplacement Area and optimal operation; and
  - Realignment of an existing overhead powerline, owned by Country Energy, to ensure adequate separation distances from the expanded Northern Emplacement Area and Eastern Soil Stockpile Area.

The Project does not involve any change to the coal production rate, methods of coal extraction, hours of operation, coal handling and processing techniques, site servicing, general waste management or employment. The only change to the current mine fleet will be the addition of one 1250 excavator in the pit to enable cleaner and more efficient mining of coal (smaller machine).

## 1.8 Project Approval Process

Coal mining is a class of development listed in Schedule 1 of the SEPP (Major Development) 2005 as requiring approval under Part 3A of the EP&A Act and determination by the Minister for Planning.

While the Rocglen Coal Mine operates under the provisions of an existing Part 3A Project Approval, consultation with the DoP has confirmed that the Rocglen Extension Project is outside the bounds of a Section 75W modification. On this basis, this EA has been prepared to accompany an application to the Minister for Planning seeking a new Project Approval under Part 3A of the EP&A Act. A copy of the project application form is contained within **Appendix A**.

Refer to **Section 6.2.1** for further details regarding the approval process under Part 3A of the EP&A Act.