

Vickery Extension Project

Project Description and Preliminary Environmental Assessment

January 2016

VICKERY EXTENSION PROJECT
PROJECT SUMMARY AND PRELIMINARY ENVIRONMENTAL ASSESSMENT



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1 INTRODUCTION

1.1 PURPOSE AND STRUCTURE OF THIS DOCUMENT

The Vickery Coal Project, owned by Whitehaven Coal Limited (Whitehaven) is an approved, but yet to be developed, open cut coal mining operation situated in the Gunnedah Coalfield approximately 25 kilometres (km) north of Gunnedah, within the Gunnedah Shire Council and the Narrabri Shire Council Local Government Areas (LGA), in north-eastern New South Wales (NSW) (Figure 1).

The Vickery Coal Project will produce up to 4.5 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal. The ROM coal will be transported by road to the Whitehaven coal handling and preparation plant (CHPP) located in Gunnedah where it will be processed and loaded onto trains for rail transport to the Port of Newcastle via the Werris Creek Mungindi Railway.

Whitehaven is seeking a new Development Consent for extension of open cut mining operations at the Vickery Coal Project. This would include a physical extension to the approved mine footprint to gain access to additional ROM coal reserves, an increase in the footprint of waste rock emplacement areas, an increase in the approved ROM coal mining rate and construction and operation of an on-site CHPP, train load-out facility and rail spur. The proposal is herein referred to as the Vickery Extension Project (the Project).

This document has been prepared to provide a description of the Project to key State regulatory agencies to initiate the preparation of the Secretary's Environmental Assessment Requirements (SEARs) in accordance with Clause 3 of Schedule 2 of the NSW *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation). The SEARs will identify any further matters that will need to be addressed in the Environmental Impact Statement (EIS).

The Vickery Coal Project was referred to the Commonwealth Minister for the Environment in 2012 (EPBC 2012/6263) and was subsequently determined to be 'Not a controlled action if undertaken in a particular manner'. The 'particular manner' in which the Project was required to be undertaken was specified in the notification issued to Whitehaven by the Commonwealth Department of the Environment (then known as the Department of Sustainability, Environment, Water, Population and Communities) on 17 May 2012.

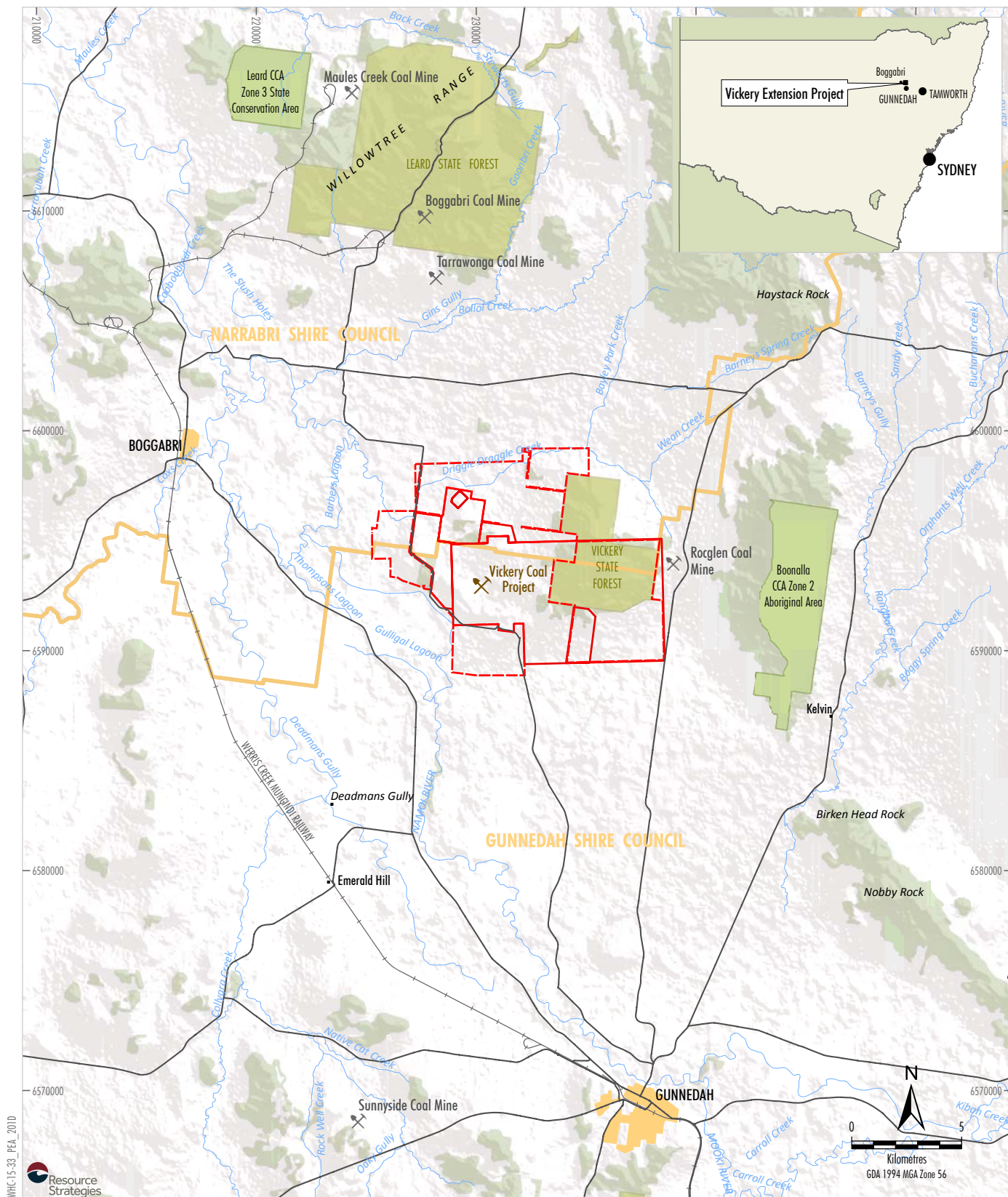
The Project will be referred to the Commonwealth Minister for the Environment for consideration as to whether the Project is a 'Controlled Action' and requires approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act).

The SEARs will be prepared by the NSW Department of Planning & Environment (DP&E) in consideration of:

- this document;
- key issues raised by relevant regulatory agencies;
- the decision of the Commonwealth Minister for the Environment regarding the referral of the relevant 'action' under the EPBC Act; and
- applicable guidelines and statutory considerations.

This document is structured as follows:

- | | |
|-----------|---|
| Section 1 | Introduction – provides background to the approved Vickery Coal Project and an overview of the Project. |
| Section 2 | Local and Regional Context – summarises the local and regional context of the Project (including surrounding development and potential interactions). |
| Section 3 | Project Summary and Justification – provides a concise description of the Project, indicates the types of activities that would be undertaken, includes a justification for the Project and summarises alternatives to the Project that have been considered. |
| Section 4 | Planning Considerations – describes the permissibility of the Project and potential applicable statutory planning instruments and strategic planning documents. |
| Section 5 | Preliminary Environmental Assessment – identifies key environmental issues of particular relevance to the Project based on a preliminary risk assessment, provides an analysis of the likely nature and extent of potential impacts, and identifies strategies to address the impacts identified. |



Source: LPMA - Topographic Base (2010); NSW Department of Industry (2015)

Figure 1

Section 6 Stakeholder Consultation – outlines consultation (with the community, local council and Government agencies) already undertaken and proposed to be carried out for the Project.

Section 7 References.

1.2 BACKGROUND

Overview of the Vickery Coal Project

On 24 April 1986, Namoi Valley Coal Pty Ltd (a subsidiary of Conzinc Riotinto of Australia [to later become Rio Tinto Limited]) submitted dual applications to the Gunnedah Shire Council (DA 23/86) and the Narrabri Shire Council (DA 18/86) to construct and operate the Vickery Coal Mine (then known as the Namoi Valley Coal Project). Development Consent for the mine was originally granted in October 1986 by the NSW Minister for Planning and Environment pursuant to section 101 of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act) (at that time).

Mining commenced in 1986 with a small underground operation which continued until March 1991. Three minor modifications to the Development Consent were approved between 1987 and 1990. From 1991 to 1998 approximately 4 million tonnes of coal was extracted using open cut mining methods.

Mining operations at the Vickery Coal Mine ceased in May 1998, when approval from the NSW Department of Primary Industries was granted to suspend operations and complete rehabilitation works on-site.

Whitehaven acquired 100% of Coal Lease (CL) 316 and Authorisation (AUTH) 406 from Rio Tinto Limited in February 2010.

Whitehaven prepared and submitted a Development Application (including an EIS) for the Vickery Coal Project in 2013 for which the NSW Minister for Planning granted Development Consent under Part 4 of the EP&A Act (SSD-5000) on 19 September 2014. The approved Vickery Coal Project will involve open cut mining with annual ROM coal production of 4.5 Mtpa over a 30 year mine life. Construction and operation of the Vickery Coal Project has not yet commenced.

The extent of the approved open cut, waste rock emplacements and infrastructure area is shown on Figure 2. Figure 2 also shows the approximate extent of Project components, in respect to the approved Vickery Coal Project components.

Overview of the Vickery South Project

Exploration Licence (EL) 7407, located to the immediate south of the Vickery Coal Project was owned by Coalworks Limited and Itochu Corporation until 2012.

Coalworks Limited proposed the development of a small open cut coal mine within EL 7407, known as the Vickery South Project, however a mine plan and Development Application for the proposal was never completed.

Whitehaven acquired 100% of EL 7407 through its acquisition of Coalworks Limited in 2012 and through its acquisition of Itochu Corporation's remaining interest in EL 7407 in 2013. A large proportion of the additional ROM coal reserves included in the Project are associated with the Vickery South Project.

Mining Tenements

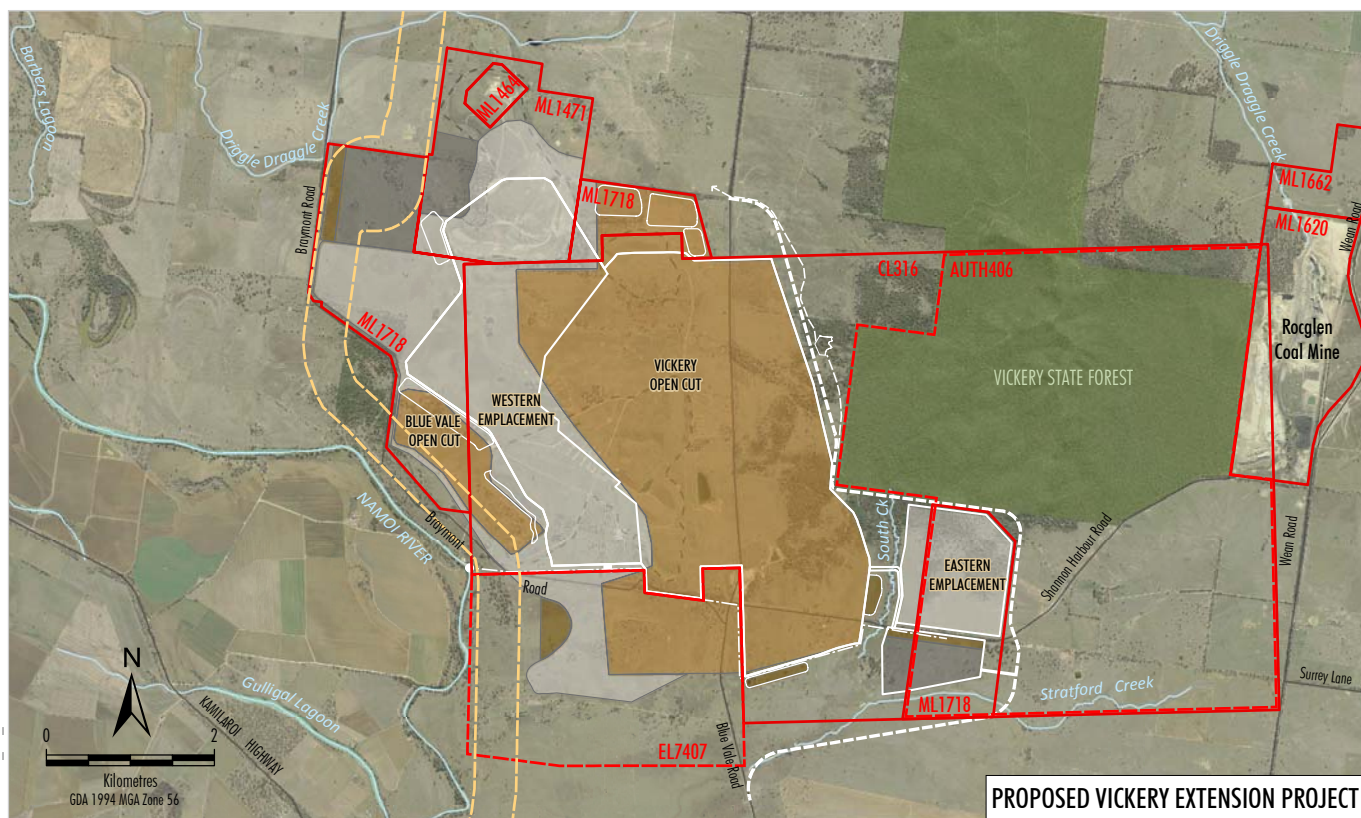
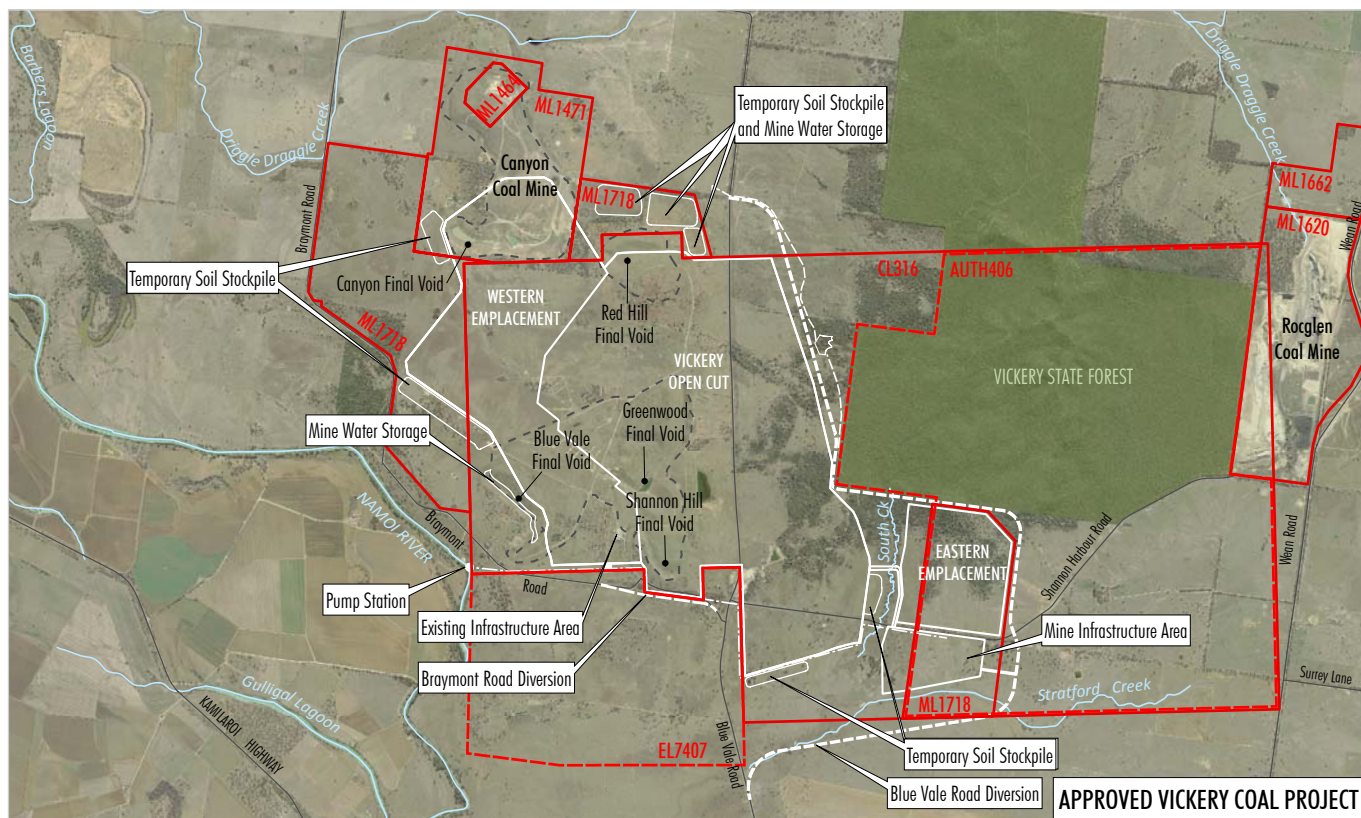
The Project mining area is located within CL 316, Mining Lease (ML) 1718, ML 1471 and EL 7407 (Figure 3). Whitehaven Coal also holds AUTH 406, EL 4699, EL 5831, EL 5967 and EL 8224, surrounding the Project, as well as ML 1620 and ML 1662 associated with Whitehaven's Rocglen Mine. Whitehaven-owned tenements continue to the north of the Project, associated with the Tarrawonga Mine and the Maules Creek Mine (Figure 1).

1.3 PROJECT OVERVIEW

Whitehaven is seeking approval from the NSW Minister for Planning for a new Development Consent under Division 4.1 of Part 4 of the EP&A Act for the Project. The application also includes the approved Vickery Coal Project.

The Project would include the following activities (Figures 3 and 4):

- Use of conventional mining equipment, haul trucks and excavators to remove waste rock and coal from the Vickery and Blue Vale Extended open cuts over a mine life of approximately 25 years.
- Approximately 970 hectares (ha) of extensions to open cut mining operations.



LEGEND

- Mining Tenement Boundary (ML & CL)
- Exploration Tenement Boundary (EL & AUTH)
- State Forest
- Historic Mining Area
- Road Diversion
- Upslope Diversion Drain and Dam
- Pipeline and ETL Corridor
- Rail Spur Investigation Corridor

Extension Project Components

- Extent of Open Cut
- Extent of Out of Pit Waste Rock Emplacement
- Infrastructure Area
- Topsoil Stockpile

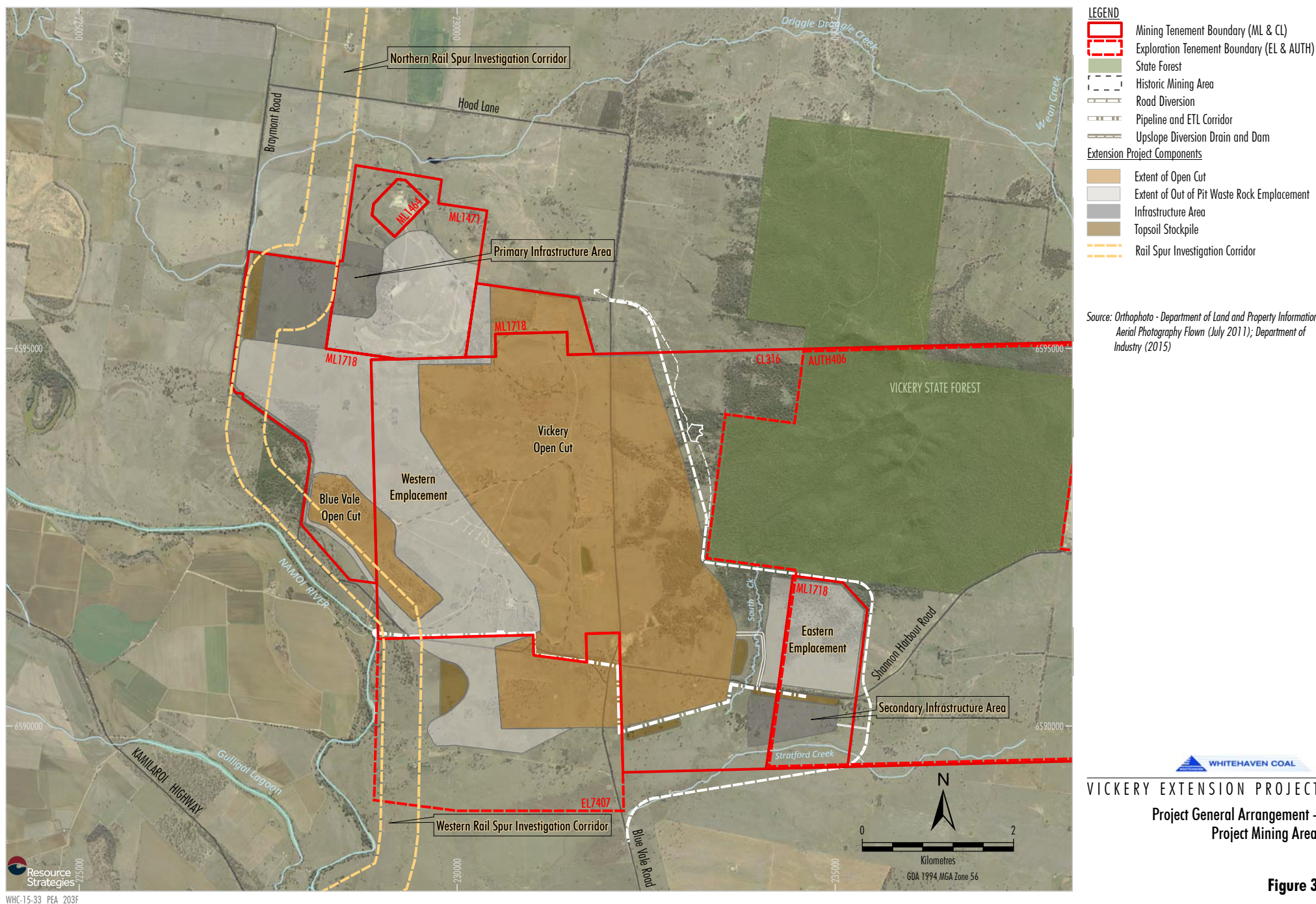


VICKERY EXTENSION PROJECT

Approved Vickers Coal Project and
Proposed Vickers Extension Project
General Arrangements

Source: LPMA - Topographic Base (2010) and Orthophoto (Bogabri 2011);
Department of Industry (2015)

Figure 2



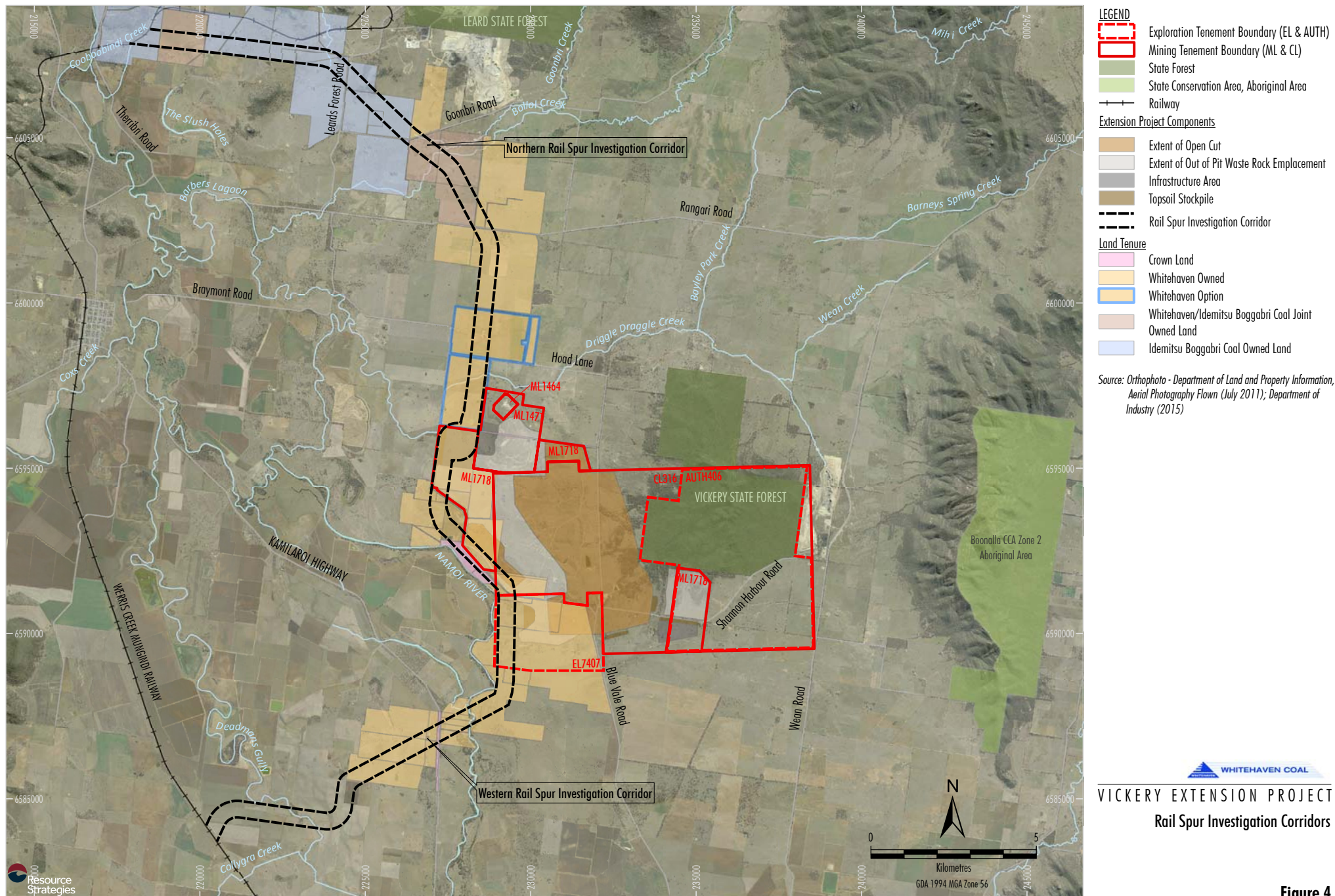


Figure 4

- ROM coal production of up to 10 Mtpa.
- Total life of mine ROM coal production of approximately 186 million tonnes (Mt).
- Construction and operation of mine infrastructure areas, including workshops, offices, an on-site CHPP and rail load out facilities to process ROM coal from the Project.
- Trucking of ROM coal from Whitehaven's Tarrawonga and Rocglen Mines to the Project and processing of this coal in the on-site CHPP and/or rail load out via the rail spur.
- Construction and operation of a rail spur and loop connecting to either the Maules Creek Mine and Boggabri Coal Mine spur (northern rail investigation corridor) or the Werris Creek Mungindi Railway (western rail investigation corridor).
- Production and rail transport of up to 13 Mtpa (combined Project, Tarrawonga and Rocglen Mines product coal) of semi-soft coking, Pulverised Coal Injection (PCI) and thermal coal for the export market.
- Construction and operation of new ancillary infrastructure in support of mining including mine infrastructure areas, ROM pads, haul roads, electricity supply, consumable storage areas, light vehicle roads and access tracks.
- Construction and use of new dams, channels, dewatering bores and other control measures in addition to existing and approved water management infrastructure to manage groundwater and surface water.
- Construction and use of soil stockpile areas.
- Development of the Blue Vale Road diversion to the east of the Vickery open cut.
- Peak construction workforce of 500 people.
- Peak operational workforce of 450 people.
- Ongoing exploration activities.
- Other associated minor infrastructure, plant and activities.

2 LOCAL AND REGIONAL CONTEXT

2.1 LOCATION

The Project is located in the Gunnedah Coalfield, some 25 km north of Gunnedah and 18 km south-east of Boggabri, in north-eastern NSW (Figure 1).

The Project mining area would be located within CL 316, ML 1718, ML 1471 and EL 7407 (Figure 3).

Whitehaven owns the freehold land within the Project mining area footprint with the exception of a small parcel of land owned by the Gunnedah Shire Council (Figure 5).

The land within the northern and western rail investigation corridors is owned by Whitehaven, Idemitsu Boggabri Coal, and some private landholders. The corridors also traverse some parcels of Crown Land, roads and watercourses (Figure 4).

A preliminary Schedule of Lands for the Project Development Application area¹ is provided in Attachment A. The Development Application area is located within the Gunnedah Shire Council and the Narrabri Shire Council LGAs.

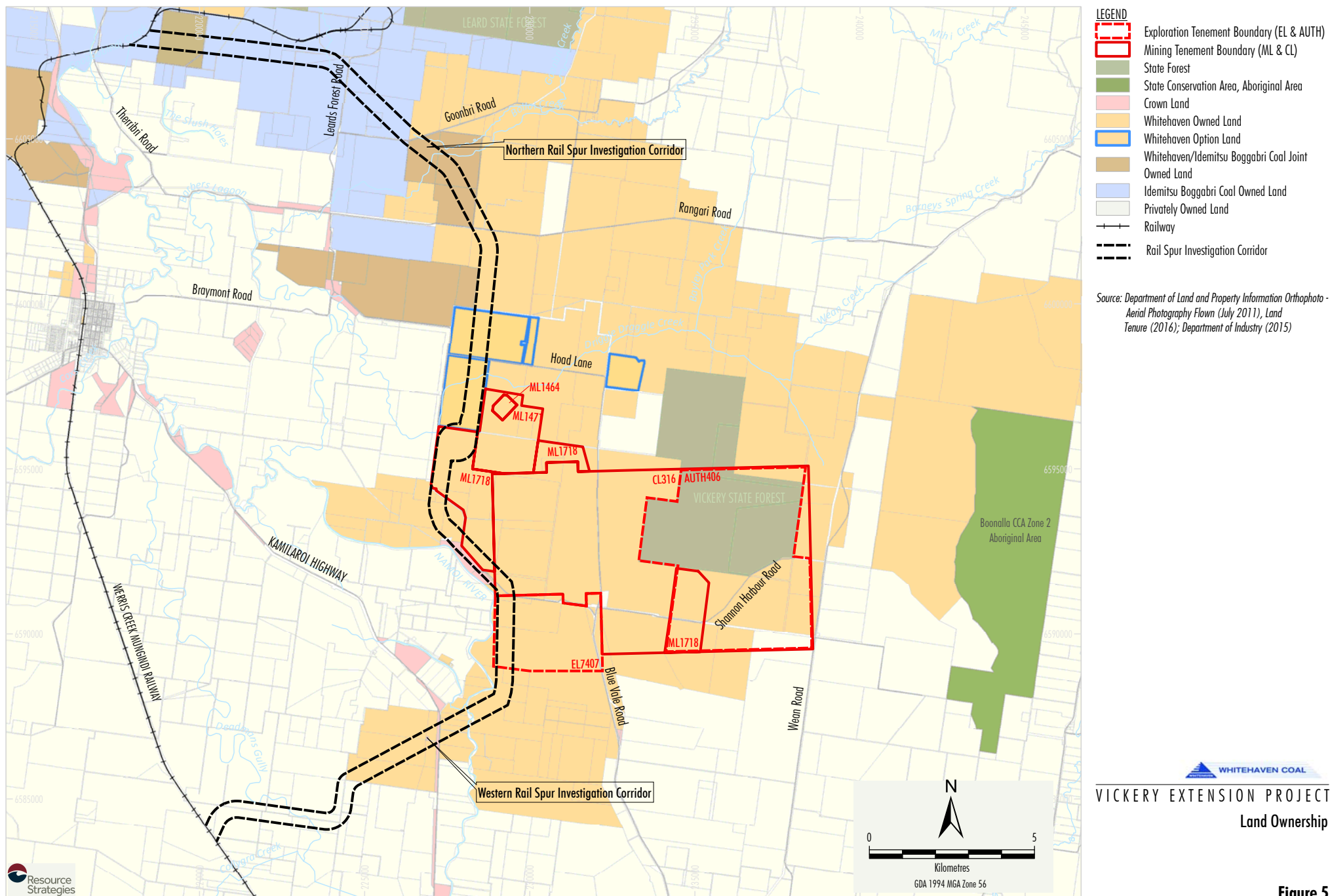
2.2 LAND USE

The majority of the Project mining area is located within previously cleared agricultural areas and rehabilitated open cut workings from historical mining activities.

Dryland cropping and grazing of cattle is conducted to the north, west and south of the Project mining area on the flatter lands near the Namoi River and its tributaries. There are several irrigated cropping enterprises in the vicinity of the Project, to the west of the Namoi River and to the north-west of the Project.

The Vickery State Forest is located to the east of the Project mining area. No mining, waste rock emplacement or disturbance is proposed within the Vickery State Forest.

¹ The Development Application area may be subject to change following detailed engineering and mine planning, environmental assessment and consideration of alternatives conducted as part of the EIS and feasibility studies.



As mentioned in Section 1.2, open cut and underground mining activities were previously conducted in the Project mining area. Three areas associated with historical open cuts and associated waste rock emplacements (the Red Hill Pit, Greenwood/Shannon Hill Pit and Blue Vale Pit) are located within CL 316 (Figure 3). In addition, part of the final void associated with the historic Canyon Mine (closed in 2009) occurs in the north-west portion of the Project mining area (Figure 3).

Operating mines in the vicinity of the Project include (Figure 1):

- Rocglen Mine, approximately 5 km east (Whitehaven owned);
- Tarrawonga Mine, approximately 10 km north (Joint Venture between Whitehaven and Boggabri Coal Pty Ltd);
- Boggabri Coal Mine, approximately 12 km north (owned by Boggabri Coal Pty Ltd); and
- Maules Creek Mine, approximately 15 km northwest (Joint Venture between Whitehaven and other parties).

Other existing and/or approved development in and surrounding the Project include:

- Vickery Coal Project;
- electricity transmission lines and water infrastructure;
- the Blue Vale Road diversion;
- the Maules Creek Mine and Boggabri Coal Mine spur of the Werris Creek Mungindi Railway; and
- the Whitehaven Private Haul Road.

2.3 TOPOGRAPHY AND WATER RESOURCES

The topography of the central part of the Project mining area comprises rolling hills (partly due to the landform associated with the previous mining activities), with flatter areas to the north and south.

The northern rail spur investigation corridor traverses flatter land near Driggle Draggie Creek, Bollol Creek and Gins Creek before turning to the west and joining the common section of the Maules Creek Mine and Boggabri Coal Mine rail spur.

The western rail spur investigation corridor crosses the Namoi River and flatter land to the west before crossing Deadmans Gully and joining the Werris Creek Mungindi Railway.

The elevation of the south-eastern part of the Project mining area ranges from approximately 330 metres (m) Australian Height Datum (AHD) near the boundary of the Vickery State Forest, to around 270 m AHD at the southern extent of the Vickery open cut. Red Hill is located at the very northern extent of the Vickery open cut, rising to an elevation of approximately 310 m AHD.

The Project mining area is situated within the Namoi River Catchment. The Namoi River abuts the south-western extent of CL 316 (Figure 3) and generally flows in a north-westerly direction from its headwaters in the Great Dividing Range.

The headwaters of Driggle Draggie Creek and a number of other un-named ephemeral streams originate in the slopes of the Vickery State Forest (Figure 3). As they descend onto the flatter areas they become less well defined drainage paths which become expansive, ponded, overland flow areas during and following heavy rainfall. These flows slowly move down gradient and merge with the Namoi River.

Mapping from the NSW Office of Water (2010) and the Vickery Coal Project Groundwater Assessment (Heritage Computing, 2013) indicates that two groundwater systems are associated with the Project mining area:

- a porous rock groundwater system; and
- an alluvial groundwater system.

The Project coal resource is located within the Maules Creek sub-basin of the Early Bellata Group which is within the porous rock (i.e. sedimentary rock) groundwater systems of the Gunnedah Basin and lies within the boundary defined in the *Water Sharing Plan for the NSW Murray-Darling Basin Porous Rock Groundwater Sources 2011*. The Project coal resource is wholly located within the Gunnedah-Oxley Basin MDB Groundwater Source.

Alluvial sediments associated with the Namoi River and its tributaries are located to the north, south and west of the Project. These alluvial sediments are part of the Upper Namoi Alluvium within Upper Namoi Zone 4, Namoi Valley (Keepit Dan to Gin's Leap) Groundwater Source of the *Water Sharing Plan for the Upper and Lower Namoi Groundwater Source 2003*. The Vickery and Blue Vale Extended open cuts would not extend into the Upper Namoi Alluvium.

2.4 STRATEGIC AGRICULTURAL LAND STATUS

A Biophysical Strategic Agricultural Land (BSAL) assessment has been conducted for the Project Mining Lease Application (MLA) area and has not identified any land that meets the BSAL criteria (SESL Australia, 2015). Whitehaven lodged an application for a Site Verification Certificate with the DP&E on 1 December 2015 for the Project MLA in accordance with Division 3 of the *State Environmental Planning Policy (Mining, Petroleum and Extractive Industries)*, 2007 (Mining SEPP). It is anticipated that the DP&E will issue a Site Verification Certificate for the Project MLA certifying that the land within the application area is not BSAL.

Based on NSW Government BSAL mapping, no regionally mapped BSAL is located within the Project footprint. Regionally mapped BSAL is located in flatter areas to the west and south of the Project.

No Critical Industry Clusters are located within the New England North West Strategic Regional Land Use Plan area (Department of Planning and Infrastructure, 2012).

2.5 ENVIRONMENTALLY SENSITIVE AREAS

Investigations conducted as part of the Vickery Coal Project EIS and a preliminary investigation for the Project extension areas of environmentally sensitive areas of State significance (as defined in the *State Environmental Planning Policy (State and Regional Development)* 2011 [State and Regional Development SEPP]) has identified the following:

- No lands within a wetland of international significance declared under the Ramsar Convention on Wetlands or lands within a World Heritage area declared under the World Heritage Convention occur in or near the Development Application area.
 - No part of the Development Application area is located on land identified as being of high Aboriginal cultural significance or high biodiversity significance under the *Gunnedah Local Environmental Plan 2012* (Gunnedah LEP) or the *Narrabri Local Environmental Plan 2012* (Narrabri LEP).
 - No land reserved as a state conservation area under the *National Parks and Wildlife Act, 1974* occurs within the Development Application area.
 - No lands, places, buildings or structures listed on the State Heritage Register under the *Heritage Act, 1977* occur within the Development Application area.
 - No land reserved or dedicated under the *Crown Lands Act, 1989* for the preservation of flora, fauna, geological formations or for other environmental protection purposes occur within the Development Application area.
 - No lands declared as critical habitat under the *NSW Threatened Species Conservation Act, 1995* or *Fisheries Management Act, 1994* occur within the Development Application area.
-
- The Development Application area is not within coastal waters of the State.
 - No lands protected or preserved under *State Environmental Planning Policy No. 14 - Coastal Wetlands* or *State Environmental Planning Policy No. 26 - Littoral Rainforests* occur within the Development Application area.
 - No lands reserved as an aquatic reserve under the *NSW Fisheries Management Act, 1994* or as a marine park under the *NSW Marine Parks Act, 1997*² occur within the Development Application area.

² It is noted that the *NSW Marine Parks Act, 1997* was repealed in 2014.

3 PROJECT SUMMARY AND JUSTIFICATION

The Project is a proposed extension to open cut mining operations at the Vickery Coal Project. This would include a physical extension to the approved mine footprint to gain access to additional ROM coal reserves, an increase in the footprint of waste rock emplacement areas, an increase in the approved ROM coal mining rate and construction and operation of an on-site CHPP, train load-out facility and rail spur.

Whitehaven is seeking approval from the NSW Minister for Planning for Development Consent under Division 4.1 of Part 4 of the EP&A Act for the Project.

Table 1 provides a comparative summary of activities associated with the Project compared to the approved Vickery Coal Project.

The proponents details are provided in Section 3.1, and a description of key Project components are provided in Sections 3.2 to 3.4. A Project justification overview is provided in Section 3.5.

3.1 PROPONENT

Whitehaven (ABN 68 124 425 396) is the proponent for the Project. The contact details for Whitehaven are:

Whitehaven Coal Limited
PO Box 600
Gunnedah NSW 2380
Phone: (02) 6742 4337

Further information on the proponent and its coal mining operations can be found at:

<http://www.whitehavennews.com.au/>

3.2 EXPLORATION ACTIVITIES, GEOLOGICAL FEATURES AND COAL RESOURCE

Exploration within the Project mining area has been conducted since the 1970s, with approximately 1,400 exploration holes investigated to date. Whitehaven has also conducted three ground magnetic surveys to evaluate various geological features.

The Project is located within the Gunnedah Basin, which contains sedimentary rocks, including coal measures, of Permian and Triassic age.

Regionally, there are two coal-bearing sequences in the Gunnedah Basin, namely:

- Early Permian Bellata Group (comprising the Maules Creek sub-basin and Mullaley sub-basin, separated by the Boggabri Ridge); and
- Late Permian Black Jack Group.

The Project coal resource is located within the Maules Creek sub-basin of the Early Permian Bellata Group. The target coal seams within the Maules Creek sub-basin are contained within the Maules Creek Formation.

The targeted coal seams for the Project include:

- Gundawarra Seam;
- Welkeree Seam;
- Kurrumbede Seam;
- Shannon Harbour Seams (upper and lower);
- Stratford Seam;
- Blue Vale Seams (upper and lower); and
- Cranleigh Seams (upper, middle and lower seams).

Individual coal seams range in thickness from approximately 0.5 m to greater than 3 m. Approximately 186 Mt of ROM coal would be mined as part of the Project. ROM coal generated at the Project would be processed to produce a semi-soft coking coal, a PCI coal and thermal coal product for export markets.

Two major fault structures are located within the Project region, namely the Boggabri Thrust (to the west of the Project) and the Mooki Thrust (to the east of the Project). There are also a number of minor faults across the Project mining area.

During the life of the Project, exploration activities would continue to be conducted in the Development Application area. These activities within, and external to, the open cut footprint would be used to investigate aspects such as geological features, seam structure and coal/overburden characteristics as input to detailed mine planning and feasibility studies.

Table 1
Summary Comparison of the Vickery Coal Project and the Vickery Extension Project

Project Feature	Approved Vickery Coal Project	Vickery Extension Project
Mine life	Approximately 30 years.	Approximately 25 years.
Mining method	Open cut truck and excavator mining to a depth of approximately 250 m below ground level.	Open cut truck and excavator mining to a depth of approximately 250 m below ground level.
Annual ROM coal production rate	Up to 4.5 Mtpa.	Up to 10 Mtpa.
Open cut operating hours	24 hours per day, seven days per week.	24 hours per day, seven days per week.
Life of mine ROM coal quantity	Approximately 135 Mt of metallurgical and thermal coal.	Approximately 186 Mt of metallurgical and thermal coal.
Waste rock emplacement areas	Western Emplacement, Eastern Emplacement and in-filling of the open cut.	Western Emplacement (extended), Eastern Emplacement and in-filling of the open cut.
Coal handling, processing and transport infrastructure	On-site coal crushing and screening facilities operating up to 24 hours per day, seven days per week. Coal to be transported off-site by road to the Whitehaven CHPP in Gunnedah.	On-site CHPP, train load out and rail spur infrastructure operating up to 24 hours per day, seven days per week. Processing and rail transport of coal from the Tarrawonga and Rocglen Mines.
Road construction requirements	Staged construction of Blue Vale Road and Braymont Road diversions. Construction and use of a private haul road between Blue Vale Road (between the Namoi River and the Kamilaroi Highway) and the Whitehaven CHPP in Gunnedah, including an overpass over the Kamilaroi Highway.	Staged construction of Blue Vale Road diversion. Closure of the southern section of Braymont Road. The private haul road and Kamilaroi Highway overpass would only be constructed if combined road transport from Whitehaven's Vickery, Tarrawonga and Rocglen Mines was to exceed 3.5 Mtpa.
Road transport requirements	Use of Blue Vale Road and the private haul road for transport of ROM coal by truck to the Whitehaven CHPP in Gunnedah.	Use of Blue Vale Road for transport of ROM coal by truck to the Whitehaven CHPP ¹ in Gunnedah until the on-site CHPP, train load out and rail spur infrastructure is commissioned. Transport of ROM coal from the Tarrawonga and Rocglen Mines by truck to the primary infrastructure area for processing and rail transport.
Water supply	Mine water supply to be obtained from surface inflows to open cut area, sediment basins and storage dams, plus surface water and/or groundwater licences as required.	Mine water supply to be obtained from surface inflows to open cut area, sediment basins and storage dams, plus surface water and/or groundwater licences as required.
Water demand	Annual average water use of 1,179 megalitres.	Annual average water use expected to increase due to on-site coal processing and increased dust suppression requirements with a larger mining footprint.
Water management	On-site water management system comprising water management storages and collection drains, runoff diversions, sediment control and open cut dewatering. Potential disposal of excess surface water through licensed discharge points subject to water quality parameters.	On-site water management system comprising water management storages and collection drains, runoff diversions, sediment control and open cut dewatering. Potential disposal of excess surface water through licensed discharge points subject to water quality parameters.
Electricity supply	Connection to the regional electrical grid at the infrastructure area via an existing dedicated powerline.	Connection to the regional electrical grid at the primary infrastructure area via an existing dedicated powerline.
Electricity demand	Maximum energy consumption of 43,000 megawatt-hours per annum.	Maximum energy consumption expected to increase due to on-site coal processing.
Workforce	Up to 60 full-time construction workforce plus additional contract personnel. Up to 250 full-time on-site operational personnel plus additional contract personnel.	Up to 500 full-time construction workforce plus additional contract personnel. Up to 450 full-time on-site operational personnel plus additional contract personnel.
Remediation and rehabilitation works	Progressive rehabilitation of waste emplacements and surface disturbance areas (e.g. exploration drill pads).	Progressive rehabilitation of waste emplacements and surface disturbance areas (e.g. exploration drill pads).

¹ Combined road transport of ROM coal from Whitehaven's Vickery, Tarrawonga and Rocglen Mines to its CHPP in Gunnedah would not exceed 3.5 Mtpa, or 4.5 Mtpa with the construction of the private haul road and Kamilaroi Highway overpass.

3.3 PROJECT ACTIVITIES

The indicative Project general arrangement is shown on Figure 3.

Additional details of each of the main Project components are discussed below.

Development Activities

Mine Infrastructure Areas, Site Access and Site Services

A primary mine infrastructure area would be constructed to the west of the historic Canyon Mine (Figure 3). The primary infrastructure area would include:

- ROM coal and product coal handling areas and associated conveyors;
- an on-site CHPP and associated conveyors, transfer points and surge bins;
- a train load-out facility including rail spur and loop;
- a mine access road;
- water management infrastructure, including pumps, pipelines, upslope diversions and drains, a watercourse diversion, water storages and other water management infrastructure;
- CHPP rejects management facilities;
- administration facilities;
- employee amenities and stores buildings;
- a workshop compound;
- laydown areas;
- a bunded fuel tank area; and
- ancillary infrastructure (e.g. internal roads, remote crib huts, electrical infrastructure, site communications, potable water supply, sewage treatment, site security).

It is anticipated that the primary infrastructure area would be constructed during the first year of the Project.

A secondary infrastructure area would be constructed to the south of the Eastern Emplacement, within the footprint of the approved Vickery Coal Project mine infrastructure area. This infrastructure area would service the southern part of the Project mining area, and would include laydown areas, workshop compound, stores buildings and ancillary infrastructure.

The secondary infrastructure area would be constructed around mid-way through the life of the Project.

Temporary Infrastructure Area

An existing infrastructure area associated with previous mining activities at the Vickery Coal Mine (Figure 2) may be used during the initial stage of the Project until the new primary infrastructure area is commissioned. As described in the Vickery Coal Project EIS (Whitehaven, 2013), the temporary infrastructure area may include development of temporary ROM coal crushing and screening facilities, a truck loadout facility and associated mining and water management infrastructure.

Development of the temporary infrastructure area would allow for the early commencement of open cut mining and road transport of ROM coal to Whitehaven's CHPP in Gunnedah. Any road transport of ROM coal from the temporary infrastructure area would be capped to ensure the total combined ROM coal transport rate from the Project and the Tarrawonga and Rocglen Mines would not exceed 3.5 Mtpa.

ROM coal transport to Whitehaven's CHPP in Gunnedah would be conducted consistent with the Vickery Coal Project Development Consent (SSD-5000).

The temporary infrastructure area would be decommissioned and rehabilitated following commissioning of the primary infrastructure area.

Road Diversions

The Blue Vale Road diversion, approved in the Vickery Coal Project Development Consent (SSD-5000) (but subject to necessary consents under section 138 of the NSW *Roads Act, 1993*), would be constructed as a result of the progression of the open cut and the construction of the Eastern Emplacement. The road diversion would be constructed between the mining operations and the Vickery State Forest, and along the eastern margin of the Eastern Emplacement before reconnecting with Blue Vale Road south of the Project.

No changes to the approved Blue Vale Road diversion is proposed as part of the Project.

A small realignment of the southern section of Braymont Road was approved as part of the Vickery Coal Project. This was required because the planned open cut extended into the current road alignment.

Under the Project the Vickery and Blue Vale Extended open cuts would intersect the southern portion of Braymont Road. As a result, Whitehaven would seek to permanently close and mine through this portion of the road. The alternative route for traffic that currently uses this road would be via the existing/re-aligned Blue Vale Road.

Private Haul Road and Highway Overpass

The private haul road and Kamilaroi Highway overpass were approved as part of the Vickery Coal Project and are to be constructed if the combined road haulage from Whitehaven's Vickery, Tarrawonga and Rocglen Mines exceeds 3.5 Mtpa.

Although Whitehaven intends to construct the Project rail and CHPP infrastructure at the commencement of the Project, it intends to retain its right to transport ROM coal from the Project (and Tarrawonga and Rocglen Mines) by road to its Gunnedah CHPP in accordance with the Vickery Coal Project Development Consent (i.e. up to 3.5 Mtpa, or up to 4.5 Mtpa with the construction of the private haul road and Kamilaroi Highway overpass).

Open Cut Mining Operations

The Project would involve mining up to 10 Mtpa of ROM coal from seven seams within the Maules Creek Formation using conventional truck and excavator open cut methods. Two open cut mining areas, namely the Vickery (including south, west and north extensions) and Blue Vale Extended open cuts, would be mined.

The seams generally dip to the east and have thicknesses ranging from approximately 0.5 m to greater than 3 m.

The stripping ratio across the proposed open cut mining areas averages approximately 10:1.

The general sequence of open cut mining would be as follows:

1. Pre-clearance surveys.
2. Vegetation clearance.
3. Topsoil and subsoil stripping. Stripped topsoil and subsoil would be used directly in progressive rehabilitation or would be placed in stockpiles for later re-use.
4. Removal of weathered or friable overburden.
5. Drilling and blasting of competent overburden (and interburden).
6. Overburden (and interburden) removal by excavator and dump truck, with supporting dozers. Overburden and interburden placed in out-of-pit mine waste rock emplacements, or as infill in the mine void, behind the advancing open cut mining operations.
7. Mining of exposed coal seams by excavator/loader and loading into haul trucks for transport to the ROM coal stockpile at the primary infrastructure area for feeding to the CHPP.
8. Progressive landform profiling and rehabilitation of mine waste rock emplacements.

The mining fleet would typically consist of hydraulic excavators and dump trucks, with a support fleet of dozers, scrapers, graders, front end loaders, drill rigs and water trucks.

Life of Mine

The mine life would be approximately 25 years.

Operational Hours

Mining activities would be undertaken 24 hours per day, 7 days per week.

Coal Processing, Handling and Transport Infrastructure

An on-site CHPP would be constructed and operated as a component of the Project within the primary infrastructure area, located to the west of the historic Canyon Mine (Figure 3). ROM coal would be stockpiled at the primary infrastructure area prior to feeding to the CHPP.

The on-site CHPP would be typical of those in the Gunnedah Basin with the capability of producing various products, including: semi-soft coking coal, PCI coal and export quality thermal coal.

Product coal would be reclaimed from the product coal stockpile and conveyed to product coal bins located at the rail loop. Product coal would then be loaded onto trains for transportation to the Port of Newcastle.

The Project would include the construction and operation of train load-out facilities and rail spur and loop. The rail spur and loop would connect to either the Maules Creek Mine and Boggabri Coal Mine spur (northern rail investigation corridor) or the Werris Creek Mungindi Railway (western rail investigation corridor).

It is anticipated that the rail spur and loop would be constructed during the first year of the Project.

The corridors being assessed for the rail spur are shown on Figure 4. The final alignment would be subject to further detailed design and finalisation of commercial arrangements.

Consistent with the Vickery Coal Project Development Consent (SSD-5000), a small quantity (in the order of 150 kilotonnes per year) of ROM coal would be made available for domestic purchase. This ROM coal would be collected by the purchaser at the primary infrastructure area and transported off-site by road.

Mine Waste Rock and Coal Rejects Management

Mine waste rock (including overburden and interburden) generated from the open cut would be placed in external waste rock emplacements (i.e. the Western Emplacement and Eastern Emplacement [Figure 3]) or as infill in the mine void behind the advancing mining operations (i.e. in-pit emplacement).

CHPP reject material would be produced over the life of the Project, including coarse and dewatered fine rejects. Fine rejects would be dewatered using belt press filters to decrease water demand and minimise the volume of reject material to be managed.

The location and design of CHPP reject material emplacement areas would be determined through detailed mine planning, environmental assessment outcomes and consideration of alternatives, and would be documented in the EIS.

Water Management and Supply

The existing site water balance model would be updated for the Project as part of the EIS.

The Project water management strategy would be developed based on the results of updated site water balance modelling and would involve:

- separation of undisturbed area runoff from disturbed area runoff;
- collection and reuse of surface runoff from disturbed areas;
- capture of pit inflows and reuse as process water;
- storage of water on-site; and
- licensed water extraction to supplement water supply.

Operational water requirements would be sourced from water storages containing runoff from disturbed mine areas or mine-affected water. Additional make-up water would be sourced from water storages containing runoff from undisturbed/rehabilitated areas, from licensed bores and/or licensed extraction from the Namoi River.

The water demand for the Project would increase with the operation of the on-site CHPP and increased dust suppression requirements with a larger mining footprint. The updated site water balance will quantify the water demand for the Project.

Residual Pit Void

The progression of the mine would result in a residual void in the south-eastern corner of the proposed Vickery open cut at the end of the mine life. The Blue Vale Extended open cut would be backfilled following completion of mining in those areas.

The EIS would assess the potential impacts of this void on groundwater and surface water resources. In particular, it would evaluate whether a pit lake would develop after mining and pit dewatering ceases, and how the void would interact with surface water features. The EIS would also consider how the final rehabilitated landform would be integrated with the surrounding landscape post closure.

Power Supply and Demand

The existing infrastructure area at the Vickery Coal Mine is currently connected to mains power (66 kilovolts). This existing power supply would be extended to connect with the primary infrastructure area. Construction and operational activities may commence through the use of generators prior to the mains power connection being established.

The power demand for the Project will increase with the operation of the on-site CHPP and rail load out infrastructure. The power demand will be estimated as part of the Project.

Other Activities

Other activities that would be conducted as a component of the Project include exploration, monitoring, rehabilitation and development of other associated minor infrastructure, plant, equipment and activities.

Project Integration

The on-site CHPP, rail infrastructure and CHPP reject management infrastructure would be designed with sufficient capacity to also process ROM coal from Whitehaven's Tarrawonga and Rocglen Mines. Relevant modifications to the Tarrawonga and Rocglen Mine Project Approvals to accommodate the transport of ROM coal to, and processing of ROM coal at, the Project would be obtained through separate assessment and approval processes if required.

Up to 3.5 Mtpa of sized ROM coal produced by the Project may be transported by road and processed at Whitehaven's CHPP in Gunnedah (consistent with the existing Vickery Coal Project Development Consent [SSD-5000]) prior to commissioning of the Project CHPP and rail infrastructure.

Should sized ROM coal be transported by road from the Project to Whitehaven's CHPP in Gunnedah, Whitehaven would schedule the ROM coal production rates from the Project, Tarrawonga Mine and the Rocglen Mine such that the overall quantity of sized ROM coal that is transported from its operations along Blue Vale Road to the Whitehaven CHPP in Gunnedah would not exceed 3.5 Mtpa, or 4.5 Mtpa with the construction of the approved private haul road and Kamilaroi Highway overpass.

Relevant modifications to the Whitehaven CHPP Development Consent (DA 0079.2002) to accommodate the processing and rail load-out of Project coal would be obtained through separate assessment and approval processes if required.

3.4 EMPLOYMENT

A construction workforce of approximately 500 personnel and a full time operational workforce of approximately 450 personnel would be required for the Project.

3.5 PROJECT JUSTIFICATION OVERVIEW

Alternatives to the proposed location, scale, mining methods and ROM coal transportation and processing methods have been considered by Whitehaven in the development of the Project description. An overview of the consideration of alternatives to date is provided below:

- **Project Location** – the location of the open cut is dictated by the presence of coal seams able to be economically mined within Whitehaven's mining tenements.
- **Scale** – the Project mining reserve is estimated at approximately 186 Mt of ROM coal within the seven coal seams proposed to be mined. The mining rate of 10 Mtpa presents the most efficient and productive mining rate for the Project resource using the proposed mining fleet.
- **Mining Method** – up to seven coal seams are present within the coal measures at the Project, all of which are amenable to extraction by open cut mining methods. Variations in coal quality across the coal seams are managed through the preparation process to produce the required products. Underground mining would limit the resource recovery as the majority of the seams are not amenable to underground extraction.

Alternatives to be Considered

Further consideration of alternatives to location, scale, methods and management would be undertaken as a component of comprehensive assessment undertaken for the EIS. These alternatives will include:

- locations for surface infrastructure (mine infrastructure areas, CHPP and rail infrastructure) in consideration of detailed mine planning and environmental assessment outcomes (e.g. potential impacts on ecology and amenity);
- opportunities for the use of existing coal processing and train load-out facilities at nearby mining operations as an alternative to the development and operation of a new CHPP and rail infrastructure for the Project;
- options for transportation of coal to the Werris Creek Mungindi Railway using rail or conveyors;

- measures to avoid, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the Project; and
- options for the management of coarse and fine rejects.

Project Justification

The Project would employ approximately 500 people during the construction phase and in the order of 450 employees during the operations phase with flow-on employment benefits to local and regional businesses.

The Project would also result in the payment of developer contributions to the Gunnedah and Narrabri Shire Councils, as well as royalty payments to the State of NSW and other tax payments.

Whitehaven is a positive contributor to the local and regional community and this would continue under the Project.

Further justification of the Project on social and economic grounds, including consideration of the principles of Ecologically Sustainable Development, will be included in the EIS.

4 PLANNING CONSIDERATIONS

4.1 APPLICABILITY OF DIVISION 4.1 OF PART 4 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Development Consent for the Project will be sought under the State Significant Development provisions (i.e. Division 4.1) under Part 4 of the EP&A Act. The EP&A Act and EP&A Regulation generally set the framework for planning and environmental assessment in NSW.

Under section 89C of the EP&A Act a class of development such as mining may be declared as State Significant Development by a State Environmental Planning Policy (SEPP). Clause 8 of the State and Regional Development SEPP provides that the development is declared to be State Significant Development for the purposes of the EP&A Act if:

- the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without Development Consent under Part 4 of the EP&A Act (first criterion); and
- the development is specified in Schedule 1 or 2 (second criterion).

In respect of the first criterion identified above, pursuant to Clause 7 of the Mining SEPP, the Project may be carried out only with Development Consent under Part 4 of the EP&A Act.

In respect of the second criterion identified above, development for the purpose of mining that:

- is coal or mineral sands mining; or
- is in an environmentally sensitive area of State Significance; or
- has a capital investment value of more than \$30 million;

is specified in Schedule 1, Item 5 as being State Significant Development.

The Project is development for the purpose of coal mining (Section 3) and therefore will be State Significant Development. Development Consent will be sought from the NSW Minister for Planning.

4.2 PLANNING PROVISIONS

State Environmental Planning Policies

The following SEPPs are, or may potentially be, relevant to the Project:

- Mining SEPP;
- *State Environmental Planning Policy (State and Regional Development) 2011*;
- *State Environmental Planning Policy (Infrastructure) 2007*;
- *State Environmental Planning Policy No. 33 (Hazardous and Offensive Development) (SEPP 33)*;
- *State Environmental Planning Policy No. 44 - Koala Habitat Protection*; and
- *State Environmental Planning Policy No. 55 (Remediation of Land)*.

Relevant provisions and objectives of the above SEPPs would be considered in the preparation of the EIS.

Local Environmental Plans

The Development Application area is within the Narrabri and Gunnedah LGAs (Figure 1) within the lands covered by the Narrabri LEP and the Gunnedah LEP.

The Narrabri LEP and Gunnedah LEP are discussed further in Section 4.4.

Mining Act, 1992

Whitehaven will lodge a MLA separately with the NSW Division of Resources and Energy (DRE) (within the NSW Department of Industry) for the Project.

Under the NSW *Mining Act, 1992*, environmental protection and rehabilitation are regulated by conditions attached to all mining tenements, including requirements for the submission of a Mining Operations Plan prior to the commencement of operations, as well as Annual Environmental Management Reports.

Under section 89K(1)(c) of the EP&A Act, if the Project is approved as State Significant Development, any application for a mining lease under the *Mining Act, 1992* cannot be refused if it is necessary for the carrying out of the Project and is to be substantially consistent with any Development Consent granted under Division 4.1 of Part 4 of the EP&A Act.

Protection of the Environment Operations Act, 1997

The NSW *Protection of the Environment Operations Act, 1997* (PoEO Act) and the NSW *Protection of the Environment Operations (General) Regulation, 2009* set out the general obligations for environmental regulation in NSW.

If the Project is approved, Whitehaven would apply for an Environment Protection Licence for the Project.

Under section 89K(1)(e) of the EP&A Act, if the Project is approved as State Significant Development, an application for an Environment Protection Licence under the PoEO Act cannot be refused if it is necessary for the carrying out the Project cannot be refused and is to be substantially consistent with any Development Consent granted under Division 4.1 of Part 4 of the EP&A Act.

Roads Act, 1993

Whitehaven would apply for the necessary consents under section 138 of the NSW *Roads Act, 1993* associated with the construction of road diversions and intersections with public roads (including those approved through the Vickery Coal Project Development Consent and new intersections proposed for the Project) (Section 3.3).

Under section 89K(1)(f) of the EP&A Act, if the Project is approved as State Significant Development, consent under section 138 of the *Roads Act, 1993* cannot be refused if it is necessary for the carrying out of the Project and is to be substantially consistent with any Development Consent granted under Division 4.1 of Part 4 of the EP&A Act.

Commonwealth Environment Protection and Biodiversity Conservation Act, 1999

The Project will be referred to the Commonwealth Minister for the Environment for consideration as to whether it constitutes a 'Controlled Action' and therefore requires approval under the EPBC Act.

The approved Vickery Coal Project was previously referred under the EPBC Act in January 2012 and was determined to be not a Controlled action if implemented in a particular manner (EPBC 2012/6263).

The decision stipulated the Project must provide for the protection of the Winged Peppercreep (*Lepidium monoplacoides*) (listed threatened species) through fencing, signposting, plant translocation and the undertaking of a monitoring and maintenance program for the life of the Project.

Commonwealth Native Title Act, 1993

The Commonwealth *Native Title Act, 1993* (CNTA) provides for the recognition and protection of native title rights in Australia. The CNTA provides a mechanism to determine whether native title exists and what the rights and interests are that comprise that native title. The process is designed to ensure that indigenous people who profess an interest in the land (or any part thereof) have the opportunity to express this interest formally, and to negotiate with the Government and the applicant about the proposed grant or renewal, or consent to access Native Title land.

The *Mining Act, 1992* must be administered in accordance with the CNTA. The primary effect of the CNTA on exploration and mining approvals is to provide Native Title parties with rights to negotiate in relation to the grant and some renewals by governments of exploration and mining titles.

The CNTA, where applicable, would be complied with in relation to the granting and renewal of any necessary mining tenements for the Project.

4.3 PLANNING STRATEGIES

The following strategic planning documents would be considered in the planning of the Project and the preparation of the EIS:

- *New England North West Strategic Regional Land Use Plan* (NSW Government, 2012);
- *Gunnedah Community Strategic Plan 2013-2023* (Gunnedah Shire Council, 2013); and
- *Narrabri Shire Community Strategic Plan* (Narrabri Shire Council, 2013).

4.4 PERMISSIBILITY OF THE PROJECT

Section 89E of the EP&A Act provides that Development Consent may not be granted under Division 4.1 of Part 4 if the development is wholly prohibited by an environmental planning instrument, but may be granted despite the development being partly prohibited by an environmental planning instrument.

The permissibility of the Project under the Gunnedah LEP and the Narrabri LEP is described below.

Gunnedah LEP

The portion of the Development Application area within the Gunnedah LGA includes land zoned under the Gunnedah LEP as Zone RU1 (Primary Production).

In accordance with the Land Use Table in Part 2 of the Gunnedah LEP "open cut mining" is permitted with consent and "roads" are permitted without consent. The construction of a "freight transport facility" is prohibited. Railways are not nominated as either a type of development that is permissible with consent or a type of development that is prohibited, with the consequence that railways are permissible with consent (as "any other development not specified in item 2 or 4").

Narrabri LEP

The portion of the Development Application area within the Narrabri LGA includes land zoned under the Narrabri LEP as Zone RU1 (Primary Production).

In accordance with the Land Use Table in Part 2 of the Narrabri LEP "open cut mining" is permitted with consent. The construction of a "freight transport facility" is permitted with consent. Railways are not nominated as either a type of development that is permissible with consent or a type of development that is prohibited, with the consequence that railways are prohibited (as "any other development not specified in item 2 or 3").

Notwithstanding the above, Clause 4 of the Mining SEPP relevantly provides:

4 Land to which Policy applies

This Policy applies to the State.

Clause 5(3) of the Mining SEPP gives it primacy where there is any inconsistency between the provisions in the Mining SEPP and the provisions in any other environmental planning instrument (subject to limited exceptions).

The practical effect of clause 5(3) for the Project is that if there is any inconsistency between the provisions of the Mining SEPP and those contained in the Gunnedah LEP and Narrabri LEP, the provisions of the Mining SEPP will prevail.

Clauses 6 and 7 of the Mining SEPP provide what types of mining development are permissible without Development Consent and what types are permissible only with Development Consent.

In this regard, clause 7(1) states:

7 Development permissible with consent

(1) Mining

Development for any of the following purposes may be carried out only with development consent:

...

- (d) *facilities for the processing or transportation of minerals or mineral bearing ores on land on which mining may be carried out (with or without development consent), but only if they were mined from that land or adjoining land,*

...

The effect of clause 7(1)(d), in conjunction with the operation of clause 5(3) of the Mining SEPP, is that notwithstanding any relevant prohibition contained in either the Gunnedah LEP or Narrabri LEP, development of the Project rail spur for transport of coal from the primary infrastructure area may be carried out with Development Consent.

Accordingly, the Minister would not be precluded from granting approval under section 89E of the EP&A Act for the Project in respect of those parts of the Project land where the construction of rail infrastructure is prohibited under the Gunnedah LEP and Narrabri LEP.

5 PRELIMINARY ENVIRONMENTAL ASSESSMENT

5.1 OVERVIEW

The following Preliminary Environmental Assessment has been prepared to identify the key potential environmental issues associated with the construction and operation of the Project. This information has been prepared to assist the DP&E with the issuing of the SEARs for the Project under Clause 3 of Schedule 2 of the EP&A Regulation.

This Preliminary Environmental Assessment has drawn on:

- Whitehaven's previous environmental impact assessment of the Vickery Coal Project;
- Whitehaven's experience from conducting the environmental impact assessments and operating the nearby Tarrawonga and Rocglen Mines;
- understanding of the local and regional context (Section 2) and the Project (Section 3);
- feedback from stakeholder consultation undertaken to date;
- baseline environmental data collected to date;
- preliminary environmental assessments undertaken for the Site Verification Certificate application; and
- the outcomes of a preliminary risk assessment.

Baseline environmental monitoring has been conducted at the Project since the Vickery Coal Project EIS was prepared and includes:

- meteorological monitoring;
- groundwater monitoring; and
- air quality monitoring.

The baseline monitoring data will be used to inform EIS studies and will be reported in the EIS.

The preliminary risk assessment involved the following:

1. **Identification of Potential Issues –** Consideration of how the Project is likely to affect the physical or biological aspects of the environment; natural or community resources; environmentally sensitive areas; areas allocated for conservation purposes; and areas sensitive because of community factors.
2. **Identification of Key Potential Environmental Issues –** Based on the results of the preliminary risk assessment, what are the priority issues, considering the extent of the potential impacts; the nature of the potential impacts; and the potential impacts on environmentally sensitive areas.
3. **Preliminary Consideration of the Study Requirements –** Each of the key environmental issues identified was considered with respect to the level and scope of assessment that would be required for the EIS. Preliminary strategies to address the key impacts were also identified.

The key environmental issues identified are provided in Table 2 with a preliminary list of study requirements to address these issues. Recognised specialists will be commissioned to conduct the studies outlined in Table 2, and Peer Reviews of key studies where necessary.

5.2 LEVEL AND SCOPE OF ASSESSMENT

In addition to the consideration of the key potential environmental impacts (Table 2), the following environmental aspects would also be addressed as a component of the EIS to consider other potential issues:

- transport;
- visual amenity;
- geochemistry;
- land contamination;
- rehabilitation; and
- preliminary hazard analysis in accordance with SEPP 33.

Assessment of the key potential environmental issues (Table 2) and the other potential impacts identified above would include consideration of:

- the existing environment using sufficient baseline data;
- potential impacts of all stages of the Project including any cumulative impacts;
- measures that could be implemented to avoid, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the Project; and
- contingency plans and/or adaptive management for managing any potentially significant residual risks to the environment.

Some preliminary strategies to address each of the key environmental issues are presented in Table 2. These strategies would be developed and refined through the assessment process. Detail on the proposed measures would be presented in the EIS.

Assessments for the EIS would consider applicable policies, guidelines and plans included in contemporary SEARs for major mining projects. Therefore, these policies, guidelines and plans have not been repeated within this document.

Table 2
Key Potential Environmental Issues and Proposed Level and Scope of Environmental Assessment

Key Potential Environmental Issue	Likely Extent and Nature of Potential Impacts	Proposed Level and Scope of Environmental Assessment	Preliminary Strategies to Address Potential Impacts (To be refined during detailed Impact Assessment)
Impacts on local and regional groundwater resources.	<ul style="list-style-type: none"> Potential drawdown of groundwater levels, alteration of groundwater flow directions and decrease in baseflow to surface water systems due to depressurisation associated with the development of the open cut and mine dewatering activities. Impacts on groundwater quality. Long-term changes to groundwater levels, flow direction and quality in the vicinity of the final void. 	<ul style="list-style-type: none"> Groundwater assessment involving numerical modelling to quantify potential impacts on groundwater resources. Groundwater investigation programme to assess the hydrogeological characteristics of the Project mining area and surrounds. Development of management and monitoring systems to minimise potential impacts. 	<ul style="list-style-type: none"> Development and implementation of a Groundwater Management Plan and Groundwater Monitoring Program to mitigate, monitor and manage potential impacts on groundwater resources. Appropriate licensing in accordance with the legislative requirements of the <i>Water Management Act, 2000</i>. Provision of mitigation/compensation/offset measures commensurate with the level of impact to any privately-owned groundwater supply bores impacted by the Project.
Impacts on surface water resources.	<ul style="list-style-type: none"> Changes to catchment areas and flow characteristics due to the construction of water storage dams, waste rock emplacements, the final void and rail spur. Increased potential for erosion and sedimentation due to the increased area of land disturbance. Potential extraction and/or discharge of water as part of the on-site water management system. 	<ul style="list-style-type: none"> Surface water assessment involving hydrological models to quantify potential impacts to surface water resources. Flood modelling to identify potential changes to flooding characteristics due to the Project landforms and the rail spur. Development of a site water balance to assess water supply and/or discharge requirements. Development of management and monitoring systems to minimise potential impacts. 	<ul style="list-style-type: none"> Development of upslope diversions to minimise the catchment area reporting to mine storages. Investigation of opportunities for reuse or beneficial use of site water as well as off-site discharge. Regular reviews of the site water balance and water management strategy for the Project. Erosion and sediment control during construction and operation. Development and implementation of a Water Management Plan (incorporating the site water balance, an erosion and sediment control plan, surface water and groundwater monitoring and a surface water and groundwater response plan) to mitigate, monitor and manage potential impacts on surface water resources. Appropriate design of the rail spur in consideration of flood modelling to minimise changes to flood characteristics. Appropriate licensing in accordance with the legislative requirements of the <i>Water Management Act, 2000</i> and the <i>Water Act, 1912</i>.

Table 2 (Continued)
Key Potential Environmental Issues and Proposed Level and Scope of Environmental Assessment

Key Potential Environmental Issue	Likely Extent and Nature of Potential Impacts	Proposed Level and Scope of Environmental Assessment	Preliminary Strategies to Address Potential Impacts (To be refined during detailed Impact Assessment)
Noise and blasting impacts on nearby private receivers.	<ul style="list-style-type: none"> Noise impacts associated with construction activities, the use of mining equipment, train movements and road transport movements. Blast overpressure and ground vibration impacts due to blasting. 	<ul style="list-style-type: none"> Development and use of a predictive noise model to quantify potential noise impacts. Analysis of potential blasting impacts including blast overpressure and ground vibration. 	<ul style="list-style-type: none"> Reasonable and feasible mitigation measures on-site to minimise noise generation during construction and operation. Development and implementation of a Noise Management Plan and associated real-time noise monitoring network, meteorological forecasting and pro-active noise management. Acquisition of some properties and negotiated agreements with some landowners. Acoustical mitigation at receivers where required (which may include measures such as enhanced glazing, insulation and/or air-conditioning), in consultation with the relevant landowner. Blast management measures, including the alteration of blast designs to meet applicable criteria.
Air quality impacts on nearby private receivers.	<ul style="list-style-type: none"> Air quality impacts associated with dust generation from land disturbance, blasting, excavation, hauling and handling of waste rock, ROM coal and product coal and greenhouse gas emissions. 	<ul style="list-style-type: none"> Development and use of a predictive air quality model to quantify potential air quality impacts. Assessment of potential greenhouse gas emissions in accordance with the <i>National Greenhouse Accounts Factors</i> (Department of the Environment, 2015 or its latest version). 	<ul style="list-style-type: none"> Best practice mitigation measures to minimise dust generation during construction and operation. Development and implementation of an Air Quality Management Plan and associated real-time air quality monitoring network, meteorological forecasting and pro-active management.

Table 2 (Continued)
Key Potential Environmental Issues and Proposed Level and Scope of Environmental Assessment

Key Potential Environmental Issue	Likely Extent and Nature of Potential Impacts	Proposed Level and Scope of Environmental Assessment	Preliminary Strategies to Address Potential Impacts (To be refined during detailed Impact Assessment)
Impacts on ecology as a result of vegetation disturbance.	<ul style="list-style-type: none"> • Vegetation clearance related impacts on flora, fauna and their habitats. • Introduction of weeds and feral animals. • Impacts on groundwater dependent ecosystems as a result of groundwater drawdown. 	<ul style="list-style-type: none"> • Targeted surveys for threatened flora and fauna species known or considered possible occurrences within the Development Application area. • Assessment of potential impacts on any terrestrial species, populations, ecological communities or their habitats. • Identification of measures that would be implemented to maintain or improve the biodiversity values of the surrounding region in the medium to long-term. 	<ul style="list-style-type: none"> • Consideration of environmental assessment outcomes during detailed mine planning (including minimisation of vegetation disturbance, particularly disturbance of areas with higher ecological value). • Surface disturbance protocols (including timing of land clearance, pre-clearance surveys and salvage of habitat features). • Development of an offset strategy in accordance with the <i>NSW Biodiversity Offsets Policy for Major Projects</i> (Office of Environment and Heritage, 2014). • Progressive rehabilitation of site disturbance areas, including the establishment of native vegetation. • Development and implementation of a Biodiversity Management Plan to mitigate, monitor and manage potential impacts on biodiversity.
Impacts on Aboriginal and non-Aboriginal heritage.	<ul style="list-style-type: none"> • Direct impacts on items of Aboriginal heritage or Aboriginal cultural values or on items of non-Aboriginal heritage. • Potential indirect effects (e.g. blasting vibration) on items of Aboriginal heritage or non-Aboriginal heritage. 	<ul style="list-style-type: none"> • Assessment of significance and impacts on items of Aboriginal heritage and Aboriginal cultural values in accordance with NSW Department of Environment, Climate Change and Water (DECCW) (2010a; 2010b) and NSW Department of Environment and Conservation (2005). • Assessment of impacts on items of non-Aboriginal heritage, in accordance with relevant Heritage Branch guidelines. • Investigation of measures to avoid, mitigate, remediate, monitor and/or offset the potential impacts of the Project. 	<ul style="list-style-type: none"> • Consideration of assessment outcomes during detailed mine planning (e.g. locations of Aboriginal and non-Aboriginal heritage sites). • Involvement of Aboriginal stakeholders during the assessment and operational phase. • Surface disturbance protocols (including salvage or demarcation of sites where applicable). • Development and implementation of management plans to mitigate, monitor and manage potential impacts on Aboriginal and non-Aboriginal heritage.

Table 2 (Continued)
Key Potential Environmental Issues and Proposed Level and Scope of Environmental Assessment

Key Potential Environmental Issue	Likely Extent and Nature of Potential Impacts	Proposed Level and Scope of Environmental Assessment	Preliminary Strategies to Address Potential Impacts (To be refined during detailed Impact Assessment)
Impacts to the agricultural suitability of lands in the Development Application area and surrounds.	<ul style="list-style-type: none"> Changes to the potential uses of land directly disturbed or otherwise impacted as a result of mining activities. 	<ul style="list-style-type: none"> Agricultural impact assessment of land within and surrounding the Development Application area to determine the existing agricultural productivity capacity. Assessment of potential agricultural productivity capacity following the completion of mining activities and rehabilitation of disturbed land. 	<ul style="list-style-type: none"> Consideration of soil survey results during detailed mine and infrastructure planning. Development of soil resource management practices (including the stripping and stockpiling of soil for use in rehabilitation). Incorporation of agricultural land in rehabilitation strategy. Identification of strategies to maintain agricultural production of land surrounding the Project.
Positive impacts on the regional and NSW economy.	<ul style="list-style-type: none"> Employment of approximately 450 personnel, including flow-on effects to the regional and NSW economy. Employment of approximately 500 construction personnel. Payment of royalties to the State and other tax payments. 	<ul style="list-style-type: none"> Socio-economic assessment of potential impacts on the regional and NSW community and economy, including a cost-benefit analysis. Project justification, including consideration of alternatives, principles of Ecological Sustainable Development and the objects of the EP&A Act. 	<ul style="list-style-type: none"> Strategies to increase local employment and support of local businesses. Continued community contributions by Whitehaven.

6 STAKEHOLDER CONSULTATION

6.1 CONSULTATION UNDERTAKEN TO DATE

Consultation undertaken to date in relation to the Project has included:

- Initial Project briefings with the DP&E in December 2015.
- Lodgement of the Site Verification Certificate to DP&E in December 2015.
- Conceptual Project Development Plan meeting with representatives of DRE in December 2015.
- Initial engagement with Aboriginal stakeholder groups through the Aboriginal cultural heritage assessment process commenced in September 2015.

6.2 STAKEHOLDER ENGAGEMENT PROGRAM

A stakeholder engagement program has been developed for the Project. Key objectives of this program are to:

- inform government and public stakeholders about the progress and nature of the Project;
- recognise and respond to local interest or concerns regarding the Project; and
- continue the ongoing dialogue between Whitehaven and stakeholders initiated through the Vickery Coal Project EIS process and the development of the Maules Creek, Tarrawonga and Rocglen Mine operations.

The program involves the use of a variety of consultation mechanisms which in summary include actions such as:

- public exhibition of key documents (e.g. this request for SEARs and the EIS);
- provision of Project information on the Whitehaven website;
- ongoing consultation with the local community, business owners and landowners;
- meetings with the general community including Aboriginal groups and directly affected landowners;

- consultation with potentially affected infrastructure owners and relevant nearby resource companies;
- meetings with relevant government agencies and councils;
- public information displays; and
- community information brochures.

The consultation would include, but not necessarily be limited to, the following government agencies and authorities:

- DP&E;
- NSW Office of Environment and Heritage (including the Heritage Branch);
- NSW Environment Protection Authority.
- NSW Department of Primary Industries (DPI) (including DPI Water and DPI Agriculture);
- NSW Department of Industry (including the DRE);
- Narrabri Shire Council;
- Gunnedah Shire Council;
- Transport for NSW (including the Roads and Maritime Services); and
- Commonwealth Department of the Environment.

Consultation with the Australian Rail Track Corporation and coal chain operators would be undertaken to discuss the continuation of approved and future Whitehaven rail movements. Consultation would also be conducted with relevant port operators.

Consultation with the Aboriginal community would be conducted in consideration of the requirements of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010b).

6.3 COMMUNITY CONTRIBUTIONS

Whitehaven plays an active role in local communities through financial contributions to regional events and facilities, including:

- contributions to the Westpac Rescue Helicopter service;
- contribution to the upgrade of the Taylor Oval and its associated facilities in Boggabri;
- various donations and contributions to the Boggabri Hospital, Boggabri pre-school, Boggabri Pool, Gunnedah South School, Gunnedah Urban Landcare, Gunnedah Show Society, Wean Race Club; and
- contributions to the Country Education Foundation of Australia, Dorothea Mackellar Memorial Society (National Poetry Competition), and the Gunnedah Shire Council Community Scholarship Fund.

Whitehaven would continue to provide funding contributions to community programs and groups during the life of the Project.

Heritage Computing (2013) *Vickery Coal Project Groundwater Assessment*.

Narrabri Shire Council (2013) *Narrabri Shire Community Strategic Plan*

NSW Office of Water (2010) *Upper Namoi Groundwater Sources: Resource Condition Assessment Report – 2010*.

Office of Environment and Heritage (2014) *NSW Biodiversity Offsets Policy for Major Projects*.

SESL Australia (2015) *Vickery Extension Project BSAL Assessment*.

Whitehaven Coal Pty Ltd (2013) *Vickery Coal Project Environmental Impact Statement*.

7 REFERENCES

Department of Environment and Conservation (2005) *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*.

Department of Environment, Climate Change and Water (2010a) *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*.

Department of Environment, Climate Change and Water (2010b) *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.

Department of Planning (2011) *Draft Proponent's Guide: Preparing Part 3A Applications*.

Department of Planning and Infrastructure (2012) *Strategic Regional Land Use Plan New England North West*.

Department of the Environment (2015) *National Greenhouse Accounts Factors*.

Environment Protection Authority (1999) *Environmental Criteria for Road Traffic Noise*.

ATTACHMENT A
PRELIMINARY SCHEDULE OF LANDS

Table A-1
Project Mining Area Schedule of Lands

Lot	Deposited Plan Number	Tenure Type
1	DP219923	Freehold
2	DP219923	Freehold
33	DP553903	Freehold
1	DP570414	Freehold
2	DP570414	Freehold
21	DP754929	Freehold
22	DP754929	Freehold
23	DP754929	Freehold
25	DP754929	Freehold
36	DP754929	Freehold
37	DP754929	Freehold
39	DP754929	Freehold
1	DP1015797	Freehold
2	DP1015797	Freehold
1	DP1018347	Freehold
2	DP1018347	Local Government Authority
3	DP1018347	Local Government Authority
5	DP1018347	Freehold

Lot	Deposited Plan Number	Tenure Type
7	DP1018347	Freehold
1	DP1038308	Freehold
2	DP1038308	Freehold
3	DP1038308	Freehold
1	DP1102940	Freehold
2	DP1102940	Freehold
4	DP1145592	Freehold
5	DP1145592	Freehold
5	DP1182289	Crown
4	DP1182289	Crown
11	DP 1182290	Crown

Other	
Gunnedah Shire Council, Narrabri Shire Council or Crown	Other roads located between or adjacent to the above parcels of land
Crown	Creeks or streams located between or adjacent to the above parcels of land

Table A-2
Rail Investigation Corridor Schedule of Lands

Lot	Deposited Plan Number	Tenure Type
5	DP115191	Freehold
6	DP115191	Freehold
15	DP113293	Freehold
16	DP113293	Freehold
17	DP113293	Freehold
1	DP185940	Freehold
A	DP367991	Freehold
1	DP605772	Freehold
1	DP622375	Freehold
12	DP625789	Freehold
120	DP754926	Freehold
121	DP754926	Freehold
9	DP754929	Freehold
20	DP754929	Freehold
21	DP754929	Freehold
22	DP754929	Freehold
25	DP754929	Freehold
31	DP754929	Freehold
34	DP754929	Freehold
36	DP754929	Freehold
39	DP754929	Freehold
41	DP754929	Crown

Lot	Deposited Plan Number	Tenure Type
7	DP754940	Freehold
8	DP754940	Freehold
18	DP754940	Freehold
19	DP754940	Freehold
21	DP754940	Freehold
23	DP754940	Freehold
59	DP754948	Freehold
60	DP754948	Freehold
27	DP755495	Freehold
38	DP755495	Freehold
39	DP755495	Freehold
56	DP755495	Freehold
57	DP755495	Freehold
64	DP755495	Freehold
66	DP755495	Freehold
67	DP755495	Freehold
79	DP755495	Freehold
81	DP755495	Freehold
93	DP755495	Freehold
94	DP755495	Freehold
97	DP755495	Freehold
103	DP755495	Freehold

Table A-2 (cont.)
Rail Investigation Corridor Schedule of Lands

Lot	Deposited Plan Number	Tenure Type
105	DP755495	Freehold
120	DP755495	Freehold
211	DP755495	Freehold
216	DP755495	Freehold
217	DP755495	Freehold
218	DP755495	Freehold
Lot	Deposited Plan Number	Tenure Type
219	DP755495	Freehold
301	DP755495	Freehold
302	DP755495	Freehold
303	DP755495	Freehold
304	DP755495	Freehold
249	DP755502	Freehold
1	DP929979	Freehold
1	DP970060	Freehold
1	DP1018347	Freehold
2	DP1018347	Local Government Authority
7004	DP1029299	Crown
1	DP1038308	Freehold
7003	DP1059335	Crown
9	DP1096302	Freehold
1	DP1115618	Freehold
2	DP1131282	Freehold

Lot	Deposited Plan Number	Tenure Type
3	DP1131282	Freehold
4	DP1131282	Freehold
5	DP1131282	Freehold
1	DP1145592	Freehold
5	DP1145592	Freehold
2	DP1160899	Freehold
1	DP1165835	Freehold
1	DP1172361	Freehold
4	DP1182289	Crown
282	DP1196626	Freehold
12	DP1200767	Freehold
13	DP1200767	Freehold
8	DP1202450	Freehold

Other	
State Rail Authority (Crown)	Railway lands located between or adjacent to the above parcels of land
Gunnedah Shire Council, Narrabri Shire Council or Crown	Other roads located between or adjacent to the above parcels of land
Crown	Creeks or streams located between or adjacent to the above parcels of land