

# VICKERY EXTENSION PROJECT

## ENVIRONMENTAL IMPACT STATEMENT

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# SECTION 1

## INTRODUCTION

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## 1 INTRODUCTION

This document is an Environmental Impact Statement (EIS) for the Vickery Extension Project (the Project).

The Project would involve the extension of open cut mining operations at the approved, but yet to be constructed, Vickery Coal Project (the Approved Mine).

The Project is located in the Gunnedah Coalfield (Figure 1-1), approximately 25 kilometres (km) north of Gunnedah, within the Gunnedah Shire Council and the Narrabri Shire Council Local Government Areas (LGAs), in New South Wales (NSW) (Figure 1-2).

Vickery Coal Pty Ltd (a subsidiary of Whitehaven Coal Limited [Whitehaven]) is the applicant for the Project.

### 1.1 PURPOSE OF THIS REPORT

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

The potential environmental impacts of the Project have been considered in this EIS in accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued by the NSW Department of Planning and Environment (DP&E) on 19 July 2018.

The SEARs were issued in accordance with the requirements of clause 3 of Schedule 2 of the NSW *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation). A summary of the SEARs is provided in Section 1.4, and the SEARs are provided in full as Attachment 1.

### 1.2 BACKGROUND

#### 1.2.1 Previous Mining Operations in the Project Area

Parts of the Project mining area have been disturbed by previous mining activities associated with the former Vickery Coal Mine and the former Whitehaven Mine (otherwise known as, and herein referred to as the Canyon Coal Mine).

Development Consent for the former Vickery Coal Mine was originally granted to Namoi Valley Coal Pty Ltd (a subsidiary of Conzinc Riotinto of Australia [to later become Rio Tinto Limited]) in October 1986 by the NSW Minister for Planning and Environment pursuant to section 101 of the EP&A Act (at that time).

Mining commenced in 1986 with a small underground operation which continued until March 1991. From 1991 to 1998 approximately 4 million tonnes (Mt) of coal was extracted from three additional mining areas using open cut mining methods.

Mining operations at the former Vickery Coal Mine within Coal Lease (CL) 316 ceased in May 1998, when approval from the NSW Department of Primary Industries (DPI) was granted to suspend operations and complete rehabilitation works on-site.

Whitehaven acquired CL 316 and Authorisation (AUTH) 406 from Rio Tinto Limited in February 2010.

Whitehaven operated the former Canyon Coal Mine between 2000 and 2009 within Mining Lease (ML) 1471 and ML 1464.

Five final voids and some supporting infrastructure and access roads associated with previous mining remain within the Project area (Figure 1-3).

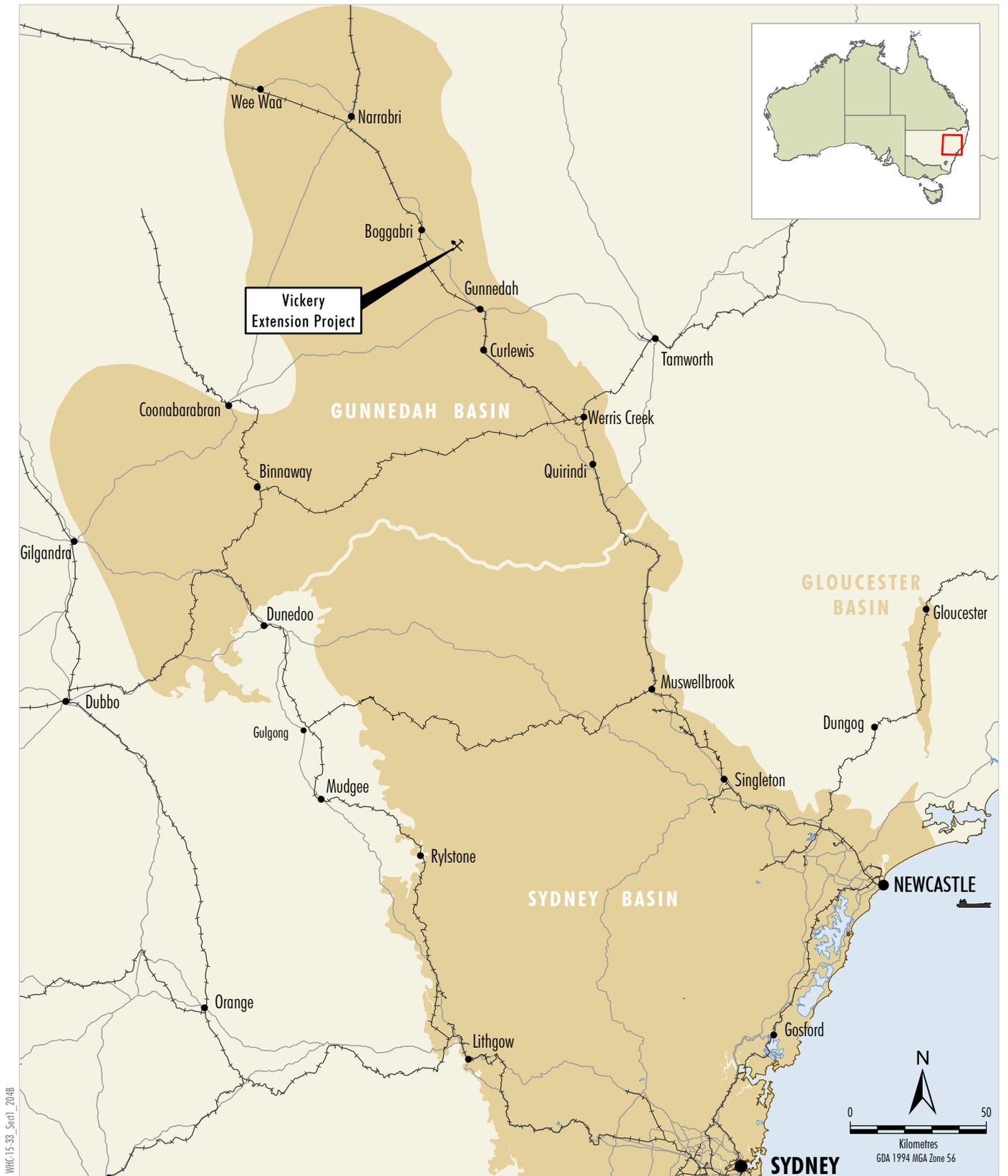
The former Vickery and Canyon Coal Mines have been rehabilitated following closure, returning disturbed land to areas of groundcover suitable for grazing and woodland areas.

#### 1.2.2 Approved Mine

Whitehaven prepared and submitted a Development Application (including an EIS) for the Approved Mine in 2013. The NSW Minister for Planning (the Minister) granted Development Consent (SSD-5000) for the Approved Mine under Part 4 of the EP&A Act on 19 September 2014.

The Approved Mine was referred to the Department of Sustainability, Environment, Water, Population and Communities in 2012, and was determined as not a controlled action if undertaken in a particular manner (EPBC 2012/6263).

Construction and operation of the Approved Mine has not yet commenced.



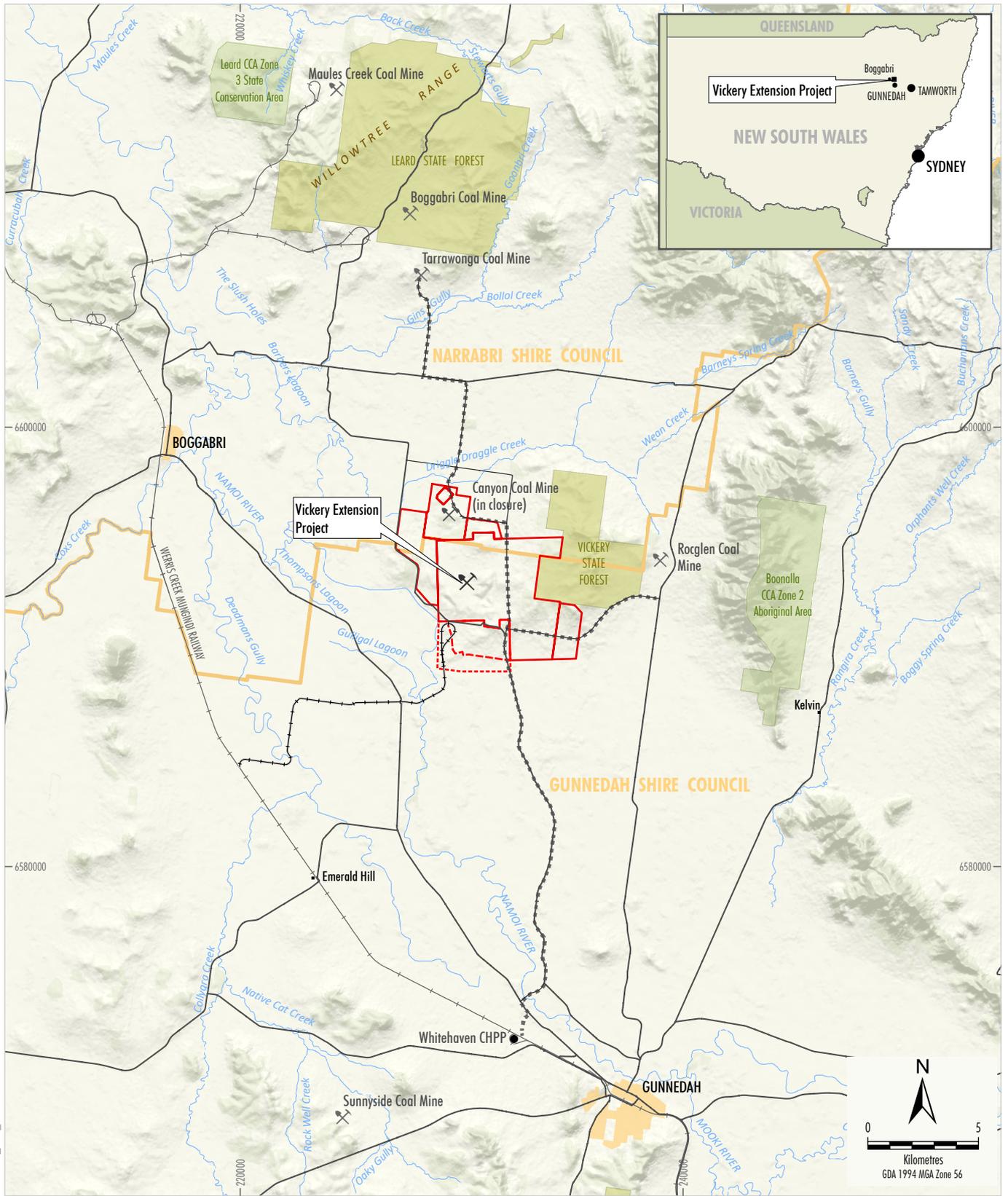
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- LEGEND**
- Highway
  - +— Major Railway
  - Coalfield

Source: Geoscience Australia (2011)


  
**VICKERY EXTENSION PROJECT**  
 Regional Location

**Figure 1-1**



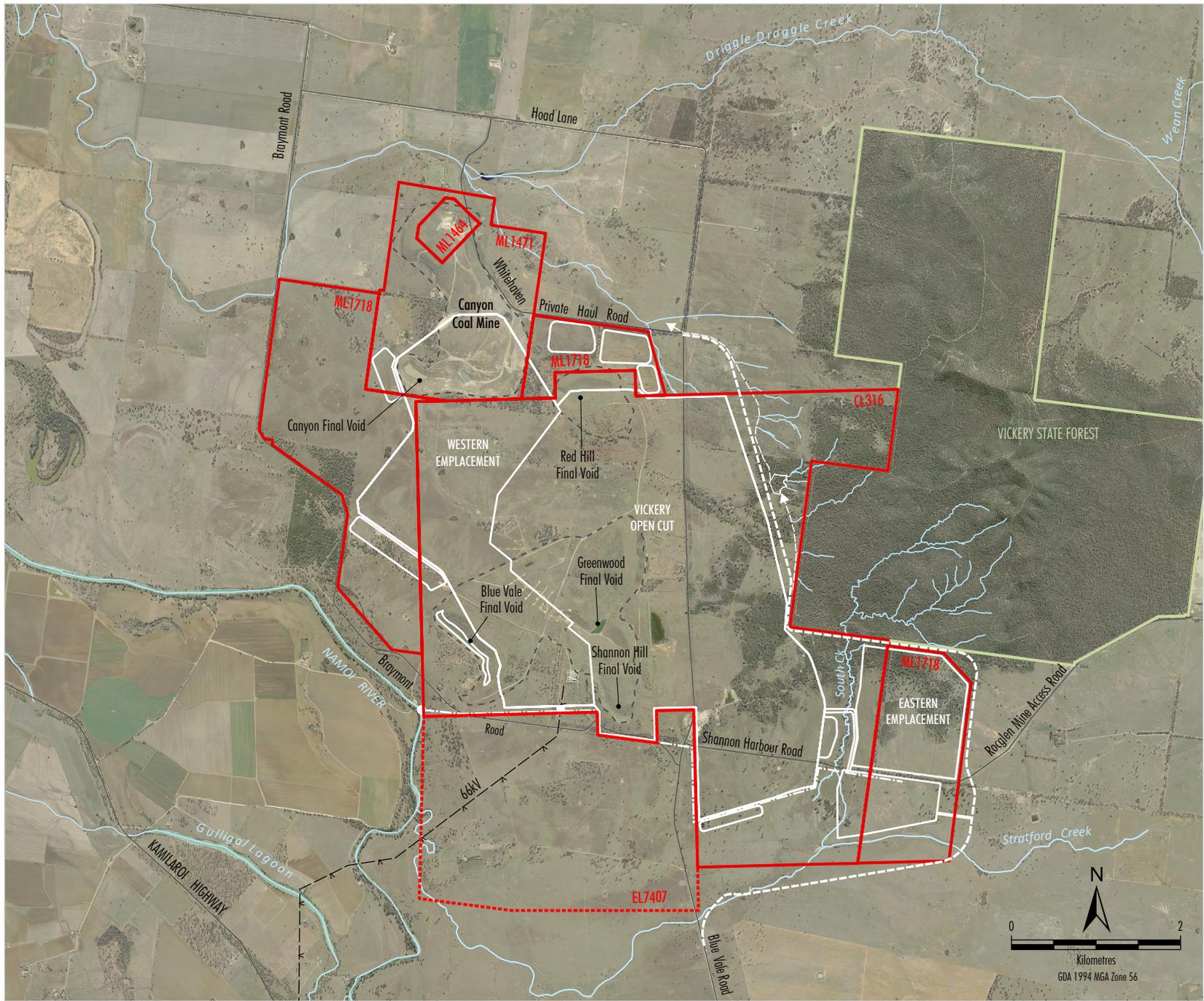
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- LEGEND**
- Mining Tenement Boundary (ML and CL)
  - Exploration Licence Boundary (EL)
  - Mining Lease Application (MLA)
  - Local Government Boundary
  - State Forest
  - State Conservation Area, Aboriginal Area
  - Major Roads
  - Railway
  - Approved Road Transport Route
  - Indicative Project Rail Spur

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

**WHITEHAVEN COAL**  
**VICKERY EXTENSION PROJECT**  
**Project Location**

**Figure 1-2**

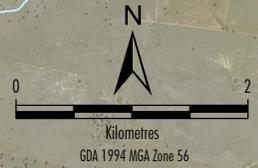


- LEGEND**
- Mining Tenement Boundary (ML and CL)
  - Exploration Licence Boundary (EL)
  - State Forest
  - Existing 66kV Powerline
  - Historic Mining Area
  - Indicative Extent of Approved Mine
  - Road Realignment
  - Up-catchment Diversion
  - Pipeline and Powerline Corridor

Source: Orthophoto - Department of Land and Property Information, Aerial Photography Flown (July 2011); Department of Industry (2015); Whitehaven (2013)



**VICKERY EXTENSION PROJECT**  
**Approved Mine General Arrangement**



**Figure 1-3**

Under the Development Consent (SSD-5000), the Approved Mine would involve open cut mining with annual run-of-mine (ROM) coal production of 4.5 million tonnes per annum (Mtpa) over a 30 year mine life. ROM coal from the Approved Mine is approved to be transported by road to the Whitehaven Coal Handling and Preparation Plant (CHPP) located 5 km north-west of Gunnedah (Figure 1-2).

The extent of the Approved Mine open cut, waste rock emplacements and infrastructure area are shown on Figure 1-3.

A summary of the key elements of the Approved Mine is provided below.

### ***Mining Operations***

The Approved Mine would involve open cut mining within the Maules Creek Formation.

Coal seams of the Maules Creek Formation are approved to be mined, with the Cranleigh Seam generally defining the base of the open cut.

Depth from the existing ground level to the base of the open cut would vary from approximately 100 metres (m) in the west to 250 m in the east.

Open cut mining methods would be used at the Approved Mine.

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

1. vegetation clearance and removal;
2. soil stripping and stockpiling for use in progressive rehabilitation;
3. drilling and blasting of overburden;
4. overburden and interburden moved to waste rock emplacement areas;
5. mining of exposed coal seams and transport directly to the ROM coal handling area; and
6. progressive rehabilitation of waste rock emplacement areas.

### ***ROM Coal Transport to the Whitehaven CHPP***

ROM coal is approved to be crushed and screened at a ROM coal handling area on-site before being transported to the Whitehaven CHPP using a fleet of on-road haul trucks along the Approved Road Transport Route (Figure 1-2).

The Whitehaven CHPP and train load-out facility is located approximately 5 km north-west of Gunnedah and currently processes ROM coal from the surrounding operating Whitehaven coal mining operations.

The Whitehaven CHPP operates in accordance with Development Consent (DA 0079-2002) and is approved to operate until October 2022.

Up to 3 Mtpa of sized ROM coal is approved to be processed at the Whitehaven CHPP and the train load-out facility is approved to handle up to 4.1 Mtpa of product coal (including loading of CHPP bypass coal).

A short length of private haul road and a Kamilaroi Highway overpass would be constructed prior to any cumulative road haulage of ROM coal along the Approved Road Transport Route exceeding 3.5 Mtpa.

### ***Coal Processing, Loading and Transport at the Whitehaven CHPP***

At the existing Whitehaven CHPP, sized ROM coal from the Approved Mine would be loaded directly from product stockpiles onto trains (i.e. bypass coal) or, alternatively, will be crushed, screened and washed before being loaded onto trains.

### ***Waste Rock Management***

Waste rock (including overburden and interburden) is approved to be placed within the footprint of the open cut void behind the advancing open cut, as well as being placed in the two out-of-pit waste rock emplacements (i.e. the Western and Eastern Emplacements) (Figure 1-3).

Over the life of the Approved Mine, the waste rock emplacements would be progressively shaped for rehabilitation activities (i.e. final re-contouring, soil placement and revegetation).

### **Water Management Infrastructure**

Water management infrastructure for the Approved Mine includes:

- a sewage and water treatment facility;
- water storages, including mine water dams, sediment dams and diversion dams;
- temporary and permanent up-catchment diversion bunds/drains;
- a permanent flood bund around the southern extent of the open cut; and
- a pump station located on the Namoi River and associated pumps and pipeline to the Approved Mine.

### **Electricity Supply and Distribution**

A 66 kilovolt (kV) powerline provided power to the former Vickery Coal Mine site (Figure 1-3), however, the powerline is not currently used.

A new 66 kV/11 kV substation and 66 kV powerline is approved to provide power to the Approved Mine infrastructure area and Namoi River pump station.

### **Other Infrastructure and Service Facilities**

The majority of the infrastructure and service facilities at the Approved Mine would be located at the Approved Mine infrastructure area.

Light vehicles and delivery vehicles would access the mine infrastructure area via a new intersection connecting the existing Shannon Harbour Road with Blue Vale Road (as realigned for the Approved Mine).

ROM coal haulage trucks would have a dedicated mine infrastructure area access road constructed off the Blue Vale Road realignment, to the south of Shannon Harbour Road.

Other infrastructure and service facilities of the Approved Mine would include 1 km of approved private haul road and a Kamilaroi Highway overpass, and various public road realignments in support of the development.

### **Environmental Monitoring and Management**

The Approved Mine would be developed and operated in accordance with the environmental monitoring and management requirements of Development Consent SSD-5000.

### **Rehabilitation and Biodiversity Offsets**

#### **Progressive Rehabilitation**

Rehabilitation would occur progressively at the Approved Mine. Rehabilitation objectives for the Approved Mine include:

- safe, stable and non-polluting landforms;
- constructed landforms drain to the natural environment;
- constructed landforms incorporate micro-relief patterns consistent with the surrounding topography;
- restore ecosystem function, including maintaining or establishing self-sustaining ecosystems;
- establish woodland vegetation on the site;
- establish agricultural land; and
- minimise visual impact of final landforms as far as is reasonable and feasible.

#### **Final Landform**

Appendix 8 of Development Consent SSD-5000 provides a conceptual rehabilitation plan and final landform for the Approved Mine. The final landform for the Approved Mine would comprise a combination of land suitable for agriculture (e.g. grazing) and native woodland.

Final drainage is designed to generally integrate with the surrounding catchment and includes some permanent drainage features (e.g. permanent north-west drainage line diversion).

At the completion of mining, the approved final landform would include three final voids (i.e. the Northern and Southern final voids shown on Appendix 8 of Development Consent SSD-5000, as well as the existing Blue Vale final void).

In accordance with Condition 50, Schedule 3 of Development Consent SSD-5000, the size and depth of final voids would be designed to be groundwater sinks and would minimise flood interaction and highwall instability risk.

### Biodiversity Offset Strategy

The Approved Mine Biodiversity Offset Strategy is shown in Appendix 7 of Development Consent SSD-5000. The primary biodiversity offset area is located approximately 35 km to the north-northeast of the Approved Mine (the Willeroi East Offset Area) and comprises approximately 1,671 hectares (ha) of land.

The Approved Mine also has an additional four smaller biodiversity offset areas located in the immediate vicinity (i.e. Offset Areas 2, 3, 4 and 5) that comprise an additional 391.5 ha of land.

In addition, the Approved Mine has a local biodiversity management area where additional measures would be implemented, including:

- South Creek Box-Gum Woodland endangered ecological community (EEC) management area;
- Driggle Draggie Creek management area;
- corridor enhancement plantings; and
- strategic grazing and management of adjoining Whitehaven-owned land.

### 1.2.3 Vickers South Project

Exploration Licence (EL) 7407, located to the immediate south of the Approved Mine (Figure 1-3), 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 Vickers South Project, however a mine plan and Development Application for the proposal were not submitted.

Whitehaven acquired 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 Project's additional ROM coal reserves (i.e. in addition to the Approved Mine) are associated with the Vickers South Project.

## 1.3 PROJECT OVERVIEW

### 1.3.1 Project Summary

The Project involves mining the coal reserves associated with the Approved Mine, as well as accessing additional coal reserves within EL 7407 (within Mining Lease Application [MLA] 1), ML 1718 and CL 316. ROM coal would be mined by open cut methods at an average rate of 7.2 Mtpa over 25 years, with a peak production of up to approximately 10 Mtpa.

The Project 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 a Project CHPP, train load-out facility and rail spur (Figure 1-4). This infrastructure would be used for the handling, processing and transport of coal from the Project, as well as other Whitehaven mining operations.

A detailed summary of the Project is provided in Section 2.

In comparison to the Approved Mine, the Project would:

- result in more efficient extraction of ROM coal reserves within the existing mining tenements;
- remove the requirement for ROM coal from the Project to be transported on public roads once the Project CHPP, train load-out and rail spur infrastructure reach full operational capacity;
- remove the requirement for coal from the Project to be processed at the Whitehaven CHPP (Figure 1-2) once the Project CHPP, train load-out and rail spur infrastructure reach full operational capacity; and
- improve the compatibility of the final landform with the surrounding landscape by:
  - reducing the number of final voids from three with the Approved Mine to two (compared to five final voids in the current landscape);
  - constructing the Western Emplacement with a design that better integrates with the surrounding landscape; and
  - removing the requirement to construct the approved Eastern Emplacement.



The Project would result in employment, council contributions, state royalties and expenditure in the region.

Table 1-1 provides a summary comparison of the Approved Mine and Project components.

### 1.3.2 Site Location and Tenure

The Approved Mine is located within CL 316, ML 1718 and ML 1471. Exploration activities at the Approved Mine are undertaken within EL 7407.

The Project would extend into a new MLA area (MLA 1) within EL 7407.

Relevant land ownership information for land parcels within the immediate vicinity of the Project is provided on Figures 1-5a and 1-5b.

The Project Development Application area includes those lands listed in the real property descriptions provided in support of the Development Application submitted to the DP&E (Attachment 3).

The Project Development Application area is within the Gunnedah and Narrabri LGAs. A description of the land zoning in the Development Application area is provided in Attachment 5.

### 1.3.3 Proponent

The proponent for the Project is Vickery Coal Pty Ltd (a subsidiary of Whitehaven).

The contact details and registered and principal office for Vickery Coal Pty Ltd is:

Vickery Coal Pty Ltd  
Level 28, 259 George Street  
SYDNEY NSW 2000  
Telephone: (02) 8222 1100

### 1.3.4 Site Verification Certificate

A Site Verification Certificate (SVC) for MLA 1 (Figure 1-4) was issued on 8 February 2016 by the Secretary of the DP&E in accordance with Division 3 of the *NSW State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP).

The SVC certifies that MLA 1 does not contain Biophysical Strategic Agricultural Land.

The SVC is provided as Attachment 9 to this EIS.

### 1.3.5 Commonwealth Assessment

The Project was referred to the Commonwealth Minister for the Environment in February 2016. The Referral Decision made on 14 April 2016, and varied on 17 July 2018 (EPBC Ref: 2016/7649), was that the Project is a “controlled action” and, therefore, the Project requires approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act).

The Project will be assessed under the bilateral assessment agreement between the Commonwealth and NSW. This EIS provides an assessment of potential impacts to the following controlling provisions considered by the Commonwealth Minister for the Environment to be relevant to the Project:

- EPBC Act listed threatened species and communities; and
- water resources.

A description of how relevant controlling provisions under the EPBC Act have been addressed in this EIS is provided in Attachment 2.

## 1.4 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

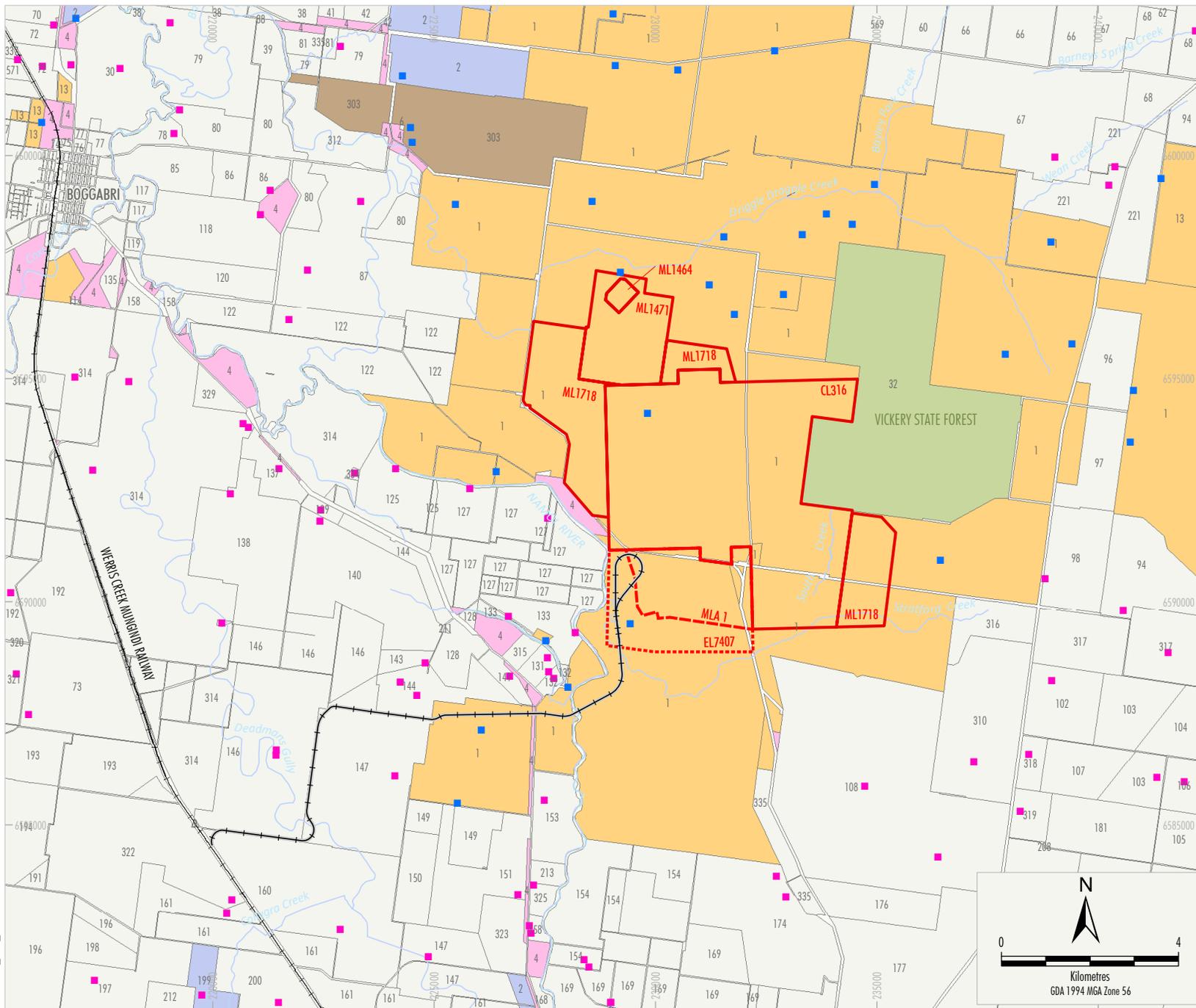
The SEARs for the Project were issued by the DP&E on 19 July 2018 (Attachment 1).

A summary of the SEARs is provided in Table 1-2 and a summary of the content requirements of an EIS from the EP&A Regulation is provided in Table 1-3.

In addition, a summary indicating where controlling provisions under the EPBC Act have been addressed in this EIS is provided in Attachment 2.

**Table 1-1  
Approved Mine and Project Summary**

Project Component	Summary of the Approved Mine	Summary of the Project
Mine life	Approximately 30 years.	Approximately 25 years.
Mining method	Open cut mining to a depth of approximately 250 m below ground level.	Unchanged from the Approved Mine.
Open cut extent	One open cut.	Extension of the Approved Mine's open cut.
Annual production rate	Up to 4.5 Mtpa of ROM coal.	Up to approximately 10 Mtpa ROM coal.
Total resource	135 Mt ROM coal.	179 Mt ROM coal.
Management of waste rock, coal rejects and final landform	<p>Co-disposal of waste rock and coal rejects from the Whitehaven CHPP within the Western and Eastern Emplacements and within the footprint of the open cut voids.</p> <p>The Project area currently includes five final voids associated with historic mining activity. The final landform would include three final voids (Northern and Southern voids and existing Blue Vale final void).</p>	<p>Co-disposal of waste rock and coal rejects within the Western Emplacement and within the footprint of the open cut void.</p> <p>No requirement to construct the approved Eastern Emplacement.</p> <p>The final landform would reduce the number of final voids from five to two (the Project open cut final void and the existing Blue Vale final void).</p>
Coal handling, processing and transport infrastructure	<p>On-site coal crushing and screening facilities.</p> <p>Use of the Approved Road Transport Route to haul ROM coal from the Project to the Whitehaven CHPP for processing.</p> <p>Use of the Whitehaven CHPP, train load-out and rail spur infrastructure to transport product coal to market.</p>	<p>Use of the Approved Road Transport Route to haul ROM coal from the Project to the Whitehaven CHPP until the Project CHPP, train load-out facility and rail spur infrastructure reach full operational capacity.</p> <p>Ability to receive ROM coal via road from other Whitehaven mining operations for stockpiling and/or processing at the Project CHPP.</p> <p>On-site processing of up to approximately 13 Mtpa of ROM coal (combined) from the Project and other Whitehaven mining operations.</p> <p>Use of the Project train load-out facility and rail spur infrastructure to transport up to approximately 11.5 Mtpa of product coal (combined) to market from the Project and other Whitehaven mining operations.</p>
Water management	On-site water management system, comprising water management storages and collection drains, up-catchment diversions, sediment control and open cut dewatering.	As per the Approved Mine, with construction and use of a groundwater supply borefield to the north of the Project.
Water supply	Mine water supply to be obtained from inflows to open cut areas, sediment dams and storage dams, plus surface water and/or groundwater licences as required.	Unchanged from the Approved Mine.
Workforce	<p>Up to 60 full-time equivalent construction workforce plus additional contract personnel.</p> <p>Up to 250 full-time equivalent on-site operational personnel plus additional contract personnel.</p>	<p>Up to 500 full-time equivalent construction personnel.</p> <p>Up to 450 full-time equivalent on-site operational personnel.</p>
Operating hours	Mining would occur 24 hours per day, seven days per week.	Unchanged from the Approved Mine.

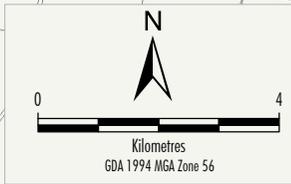


- LEGEND**
- Mining Tenement Boundary (ML and CL)
  - Mining Lease Application (MLA)
  - Exploration Licence Boundary (EL)
  - State Forest
  - Crown Land
  - Whitehaven Owned Land
  - Whitehaven/Idemitsu Boggabri Coal Joint Owned Land
  - Idemitsu Boggabri Coal Owned Land
  - Privately Owned Land and Other Land
  - Railway
  - Mine-owned Dwelling
  - Private Dwelling
  - Indicative Rail Spur Alignment

Source: Department of Land and Property Information - Land Tenure (2016); Department of Industry (2017); Whitehaven Coal (2016)



**VICKERY EXTENSION PROJECT**  
Land Ownership



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**Figure 1-5a**

Reference No	Landholder	Reference No	Landholder	Reference No	Landholder
1	Whitehaven Coal Mining Pty Limited	107	JC Wise & LD Miller	192	JJ Harper
2	Boggabri Coal Pty Limited	108	AC Wannan & PM Winter	193	PN Rees
4	The State of New South Wales	114	LP & TG Mainey	194	PJ McMahon
5	State Rail Authority of New South Wales	117	JL & K Davis	196	MY Calder
6	Narrabri Shire Council	118	AD Watson	197	CAL & CG Boileau
7	The Council of The Shire of Namoi	119	LH Blackford	198	LT & GD Osland
9	Country Rail Infrastructure Authority	120	Nambarloo Pty. Limited	199	RP & SM Urquhart
13	Aston Coal 2 Pty Limited	122	Nandewar Pty. Limited	200	DK & BM Swain
30	MF, TT, SL Hart & PF Rice	125	S & AJ Maunder	208	O Gremmer
32	State Forests of NSW	127	JK Barlow	211	LJ Carrigan
38	RJ Heiler	128	GA & TJ Mcilveen	212	MB Wilson & JB Smith
39	DV Gillham	131	BJ & DP Keeler	213	Damilabe Pty Ltd
41	LE James	132	EJ & CA Hannan	221	ME Geddes
42	AN Rodstrom	133	GA Mcilveen	303	Whitehaven Coal Mining Limited & Boggabri Coal Pty Limited
60	JE Picton	135	Estate: Perpetual Lease Boggabri Golf Club Limited	310	AJ & LE Laurie
62	I & B Doshen	137	AC & GT Carrigan	312	Kinkuna Holdings Pty Ltd
66	MG & FJ Farquhar	138	AC Carrigan	313	Aston Coal 2 Pty Limited & ICRA MC Pty Limited & J-Power Australia Pty Limited
67	RL & KA Penrose	139	KL & SR Crawford	314	Global Ag Properties Australia Pty Ltd
68	PG & IL Capel	140	DA & JE Watt	315	GP & KE Mainey & GP Mainey Pty Limited
70	DW Keys	141	DM & AM Heinemann	316	KD Laurie
72	RW & EJ Kemp	143	SL Johns	317	T & PA Dimarchos
73	LW & MD Hunt	144	EF & JT Darley	318	JC Wise, LD Miller and W & M Lichti
74	N.S.W. Grain Corporation Limited	146	GC Carrigan	319	LJ & JL Barker
75	GV& SA McDonald	147	C & TJ Loveridge	320	Samuel Plevy Pty Ltd
76	DG & RT Nudd	149	PJ Loveridge	321	AA & DC & CJ Jaeger
77	KD & GJ McLauchlan	150	TJ Loveridge	322	DJJ Wellwood
78	JM & NM Mckechnie	151	LG Sims	323	R Payne
79	KD Gillham	153	RG & HK Mansfield	325	RL & JM Hassan
80	A D Watson Holdings Pty Ltd	154	MM & SM Dawson	329	Merrigle Investment Fund Pty Limited
81	KL Grover	158	BC Martin & LD Curran	332	HI MacCarthy
85	Kilmarnock (Boggabri) Pty Ltd	160	RS Blackmore	334	DL & KJ Stuart
86	Peter J Watson Holdings Pty Ltd	161	PRB & JE Mearthur	335	BD Kelly
87	DS Riley	168	GW & GN Thibault	337	PJ Bell
94	RJ & A Barnes	169	WJ & SL Evans	569	AI Myer
96	GJ Rennick	174	Selkirk Pastoral Co Pty Limited	571	PJ Bell
97	RS & GJ Rennick	176	WM & KL Campbell		
98	RS Rennick	177	South Weroona Pty Limited		
102	JE & JC Meyers	180	RJ & PF Fitzpatrick		
103	KG Perrett	181	M & TC Clifton		
104	DA & RK Torrens	182	DJ & DA Shaw		
105	JC & MA King	183	GL Knapman		
106	MJ Pickett	191	BK Lees & RK Mcgregor		

Source: LPI (2010 revised 2017)

**Table 1-2  
Secretary’s Environmental Assessment Requirements – Reference Summary<sup>1</sup>**

Summary of EIS Requirements	EIS Reference
<b>General Requirements</b>	
The EIS must comply with:	
<ul style="list-style-type: none"> <li>■ The requirements in clause 6 of Schedule 2 of the EP&amp;A Regulation.</li> </ul>	Front of EIS and Attachment 3
<ul style="list-style-type: none"> <li>■ The requirements in clause 7 of Schedule 2 of the EP&amp;A Regulation.</li> </ul>	Table 1-3 of this document
The EIS must include:	
<ul style="list-style-type: none"> <li>■ Description of the Project, including mine layout and scheduling of the Project.</li> </ul>	Section 2
<ul style="list-style-type: none"> <li>■ Demonstration of efficient resource recovery.</li> </ul>	Sections 2 and 6
<ul style="list-style-type: none"> <li>■ Description of the surface infrastructure.</li> </ul>	Section 2
<ul style="list-style-type: none"> <li>■ Management strategies for waste, water and rehabilitation.</li> </ul>	Sections 2, 4 and 5
<ul style="list-style-type: none"> <li>■ Interaction of the Project with existing, approved and proposed mining operations.</li> </ul>	Section 2.3
<ul style="list-style-type: none"> <li>■ Approvals that must be obtained before the development may commence.</li> </ul>	Section 6 and Attachment 5
<ul style="list-style-type: none"> <li>■ Assessment of the potential environmental impacts of the Project.</li> </ul>	Section 4
<ul style="list-style-type: none"> <li>■ Description of the existing environment.</li> </ul>	Section 4
<ul style="list-style-type: none"> <li>■ Assessment of the potential environmental impacts of all stages of the Project, including cumulative impacts.</li> </ul>	Section 4
<ul style="list-style-type: none"> <li>■ Description of the measures to mitigate and/or offset the potential impacts of the Project, including; consistency with industry best practice, performance measures and contingency plans.</li> </ul>	Sections 4, 5 and 7
<ul style="list-style-type: none"> <li>■ Description of the measures that would be implemented to monitor and report on the environmental performance of the Project.</li> </ul>	Section 7
<ul style="list-style-type: none"> <li>■ Consolidated summary of all proposed environmental management and monitoring measures.</li> </ul>	Section 7
<ul style="list-style-type: none"> <li>■ Consideration of relevant environmental planning instruments.</li> </ul>	Section 6 and Attachment 5
<ul style="list-style-type: none"> <li>■ Reasoning for the approval of the development with regard to biophysical, economic and social considerations.</li> </ul>	Sections 4 and 6
<b>Key Issues</b>	
<ul style="list-style-type: none"> <li>■ Water.</li> </ul>	Sections 4.4, 4.5 and 4.6 and Appendices A, B and C
<ul style="list-style-type: none"> <li>■ Noise.</li> </ul>	Sections 4.7 and 4.13 and Appendix D
<ul style="list-style-type: none"> <li>■ Air.</li> </ul>	Sections 4.9 and 4.10 and Appendix E
<ul style="list-style-type: none"> <li>■ Biodiversity.</li> </ul>	Section 4.11 and Appendices F and N
<ul style="list-style-type: none"> <li>■ Land.</li> </ul>	Sections 4.2 and 4.3 and Appendices H, M and Q
<ul style="list-style-type: none"> <li>■ Heritage.</li> </ul>	Sections 4.15 and 4.16 and Appendices G and K
<ul style="list-style-type: none"> <li>■ Transport.</li> </ul>	Section 4.12 and Appendix I
<ul style="list-style-type: none"> <li>■ Visual and Light.</li> </ul>	Section 4.14 and Appendix L
<ul style="list-style-type: none"> <li>■ Hazards.</li> </ul>	Section 4.19 and Appendices O and P
<ul style="list-style-type: none"> <li>■ Economic.</li> </ul>	Section 4.17 and Appendix J
<ul style="list-style-type: none"> <li>■ Social.</li> </ul>	Section 4.18 and Appendix R
<b>Consultation Requirements</b>	
<ul style="list-style-type: none"> <li>■ Describe consultation with relevant Local, State or Commonwealth government authorities, service providers, community groups and affected landowners.</li> </ul>	Section 3, Attachment 8 and Appendix R
<ul style="list-style-type: none"> <li>■ The consultation process, the issues raised, and how they were addressed must be described in the EIS.</li> </ul>	Section 3

<sup>1</sup> The complete version of the SEARs is provided in Attachment 1.

**Table 1-3  
Content Requirements of an EIS – Clause 7 of Schedule 2 of the EP&A Regulation**

Summary of Clause 7 of Schedule 2 of the EP&A Regulation	EIS Reference
The EIS must include:	
■ Summary of the EIS.	Executive Summary
■ Objectives of the Project.	Section 6.1.1
■ Analysis of any feasible alternatives to the Project, including the consequences of not carrying out the Project.	Section 6.1
■ Description of the Project.	Section 2
■ Description of the environment likely to be affected by the Project.	Section 4
■ The likely impact on the environment of the Project.	Section 4
■ Description of the measures proposed to mitigate any adverse effects of the Project on the environment.	Sections 4, 5 and 7
■ A list of any approvals that must be obtained under any other Act or law before the Project may lawfully be carried out.	Section 6.5 and Attachment 5
■ Compilation (in a single section of the EIS) of the measures proposed to mitigate any adverse effects of the Project on the environment.	Section 7
■ Justification of the Project, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development (ESD).	Section 6.1

## 1.5 PROJECT CONSULTANTS

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

- Whitehaven (*project design, alternatives and justification, preliminary hazard analysis, background data, resource economics, consultation, rehabilitation and environmental monitoring and management*);
- RungePincockMinarco Limited (*mine scheduling, sequencing and final landform*);
- HydroSimulations (*groundwater modelling and assessment*);
- Groundwater Imaging Pty Ltd (*transient electromagnetic [TEM] survey*);
- Environment and Natural Resource Solutions (*groundwater investigations*);
- Advisian Pty Ltd (*surface water assessment, including site water balance*);
- WRM Water and Environment Pty Ltd (*flood modelling and assessment*);
- Wilkinson Murray (Sydney) Pty Limited (*noise and blast modelling and assessment*);
- Ramboll Australia Pty Ltd (*air quality modelling and assessment and greenhouse gas assessment*);
- FloraSearch (*baseline flora report*);
- Future Ecology (*threatened fauna survey report*);
- Whincop Archaeology Pty Ltd (*Aboriginal cultural heritage assessment*);
- Extent Heritage Pty Ltd (*historic heritage assessment*);
- Elliott Whiteing Pty Ltd (*social impact assessment*);
- SESL Australia Pty Ltd (*soil survey and land contamination assessment*);
- GTA Consultants Pty Ltd (*road transport assessment*);
- AnalytEcon (*economic assessment*);
- Marc & Co (*visual simulations*);
- Geo-Environmental Management Pty Ltd (*geochemistry assessment*);
- Eco Logical Australia (*aquatic ecology assessment*);
- Operational Risk Mentoring (*environmental risk assessment facilitation*); and
- Ashurst (*legal input*).

## 1.6 DOCUMENT STRUCTURE

This EIS comprises a main text component and supporting studies, which includes Appendices A through to R. An overview of the main text is presented below:

- |           |   |
|-----------|---|
| Section 1 | Provides an introduction to the Project and the EIS.        |
| Section 2 | Describes the various components and stages of the Project. |

Section 3	Describes the consultation undertaken in relation to the EIS and ongoing community involvement.	Appendices A to R contain supporting documentation, including a number of specialist reports:	
Section 4	Details the environmental assessment for the Project, including a description of the existing environment, an assessment of potential impacts and a description of measures that would be implemented to avoid, minimise, mitigate, offset, manage and/or monitor the potential impacts of the Project.	Appendix A	Groundwater Assessment.
		Appendix B	Surface Water Assessment.
		Appendix C	Flood Assessment.
		Appendix D	Noise and Blasting Assessment.
		Appendix E	Air Quality and Greenhouse Gas Assessment.
Section 5	Describes the rehabilitation strategy for the Project.	Appendix F	Biodiversity Assessment Report and Biodiversity Offset Strategy.
Section 6	Outlines the statutory provisions relevant to the Project, describes the alternatives considered and provides a Project justification.	Appendix G	Aboriginal Cultural Heritage Assessment.
		Appendix H	Agricultural Impact Statement.
		Appendix I	Road Transport Assessment.
Section 7	Provides a summary of the proposed environmental management, mitigation, monitoring and reporting in relation to the Project.	Appendix J	Economic Assessment.
		Appendix K	Historic Heritage Assessment.
		Appendix L	Visual Assessment.
Section 8	Lists documents referenced in Sections 1 to 7 of this EIS.	Appendix M	Geochemistry Assessment.
Section 9	Defines abbreviations, acronyms and terms used in Sections 1 to 7 of this EIS.	Appendix N	Aquatic Ecology Assessment.
		Appendix O	Environmental Risk Assessment.
		Appendix P	Preliminary Hazard Analysis.
		Appendix Q	Land Contamination Assessment.
		Appendix R	Social Impact Assessment.
Attachments to the main text are also provided as follows:			
Attachment 1	Secretary’s Environmental Assessment Requirements.		
Attachment 2	Matters of National Environmental Significance Cross Reference Table.		
Attachment 3	Development Application Area and Real Property Descriptions.		
Attachment 4	Peer Review Letters.		
Attachment 5	Planning Instruments Addendum.		
Attachment 6	Aquifer Interference Policy Considerations and Water Licensing Addendum.		
Attachment 7	Capital Investment Value Estimate Report.		
Attachment 8	Community Information.		
Attachment 9	Site Verification Certificate.		