WILPINJONG COAL PROJECT

MAIN REPORT

Section One Introduction

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1 INTRODUCTION

This Environmental Impact Statement (EIS) assesses the proposed development of the Wilpinjong Coal Project (the Project). The Project is located approximately 40 kilometres (km) north-east of Mudgee near the village of Wollar within the Mid-Western Regional local government area (LGA)[1], in central New South Wales (NSW) (Figures 1-1 and 1-2). The Project includes the development of an open cut mining operation, together with the construction and operation of associated rail and coal handling/train loading infrastructure.

1.1 EXPLORATION HISTORY AND TENDER PROCESS

Exploration in the Wilpinjong area was initiated by the NSW Department of Mines in 1950 and continued by the Joint Coal Board in 1951-52. In 1977 the Joint Coal Board undertook a further joint exploration programme in the Wilpinjong area in conjunction with the Department of Mines. Between 1979 and 1981, Energy Recycling Corporation conducted an extensive borehole programme throughout the area and within the subsequently declared Goulburn River National Park (DMR, 2002a).

Between 1992 and 2003 the Department of Mineral Resources (DMR) undertook a programme of staged exploration to further define the Wilpinjong resource. Specific programmes included:

- an airborne magnetic and radiometric survey; and
- a large diameter borehole coring programme to assess coal washability.

The results of this exploration programme were used by the DMR to initiate a tender process for the development of the Wilpinjong resource.

In December 2002 the DMR initiated an open tender process, on behalf of the NSW Government, seeking tenders for the development of the Wilpinjong resource. At the same time, Macquarie Generation, as the owner and operator of the Bayswater and Liddell Power Stations, issued an Invitation to Tender for the supply of crushed coal for the purpose of thermal electricity generation.

Following evaluation of the received tenders, the proponent, Wilpinjong Coal Pty Limited (WCPL) (a wholly owned subsidiary of Excel Coal Limited) was selected as the preferred tenderer and entered into a conditional contract with Macquarie Generation for the long-term supply of coal. In December 2003, the Minister for Mineral Resources granted Exploration Licence (EL) 6169 to WCPL under the *Mining Act, 1992*.

1.2 PROJECT OVERVIEW

1.2.1 Project Summary and Objectives

The Project is being developed by WCPL and is scheduled to commence in the first quarter of 2006, with an expected Project life of 21 years (from the date of grant of a mining lease).

The Project Mining Lease Application (MLA 1) area covers an approximate 2,800 hectare (ha) portion of EL 6169 (Figure 1-3). The Project would include:

- development and operation of an open cut mine within the MLA 1 area to produce coal for domestic electricity generation and export markets;
- selective highwall mining of the Ulan Seam within the MLA 1 area;
- a Coal Handling and Preparation Plant (CHPP) and mine facilities area;
- water management infrastructure including the relocation of Cumbo Creek;
- water supply bores and associated pump and pipeline system;
- placement of mine waste rock (i.e. overburden, interburden/partings and coarse rejects) predominantly within mined-out voids;
- placement of tailings within a combination of out-of-pit and in-pit tailings storages;
- development and rehabilitation of final mine landforms and establishment of woodland vegetation in areas adjacent to the Project;
- a mine access road, temporary construction camp access road, internal access roads and haul roads;

[1] The Mid-Western Regional LGA was proclaimed by the NSW Government on 26 May 2004. The LGA comprises all of the previous Mudgee LGA and part of the former Merriwa and Rylstone LGAs.

WILPINJONG COAL PROJECT EIS

FIGURE 1-1
Regional Location

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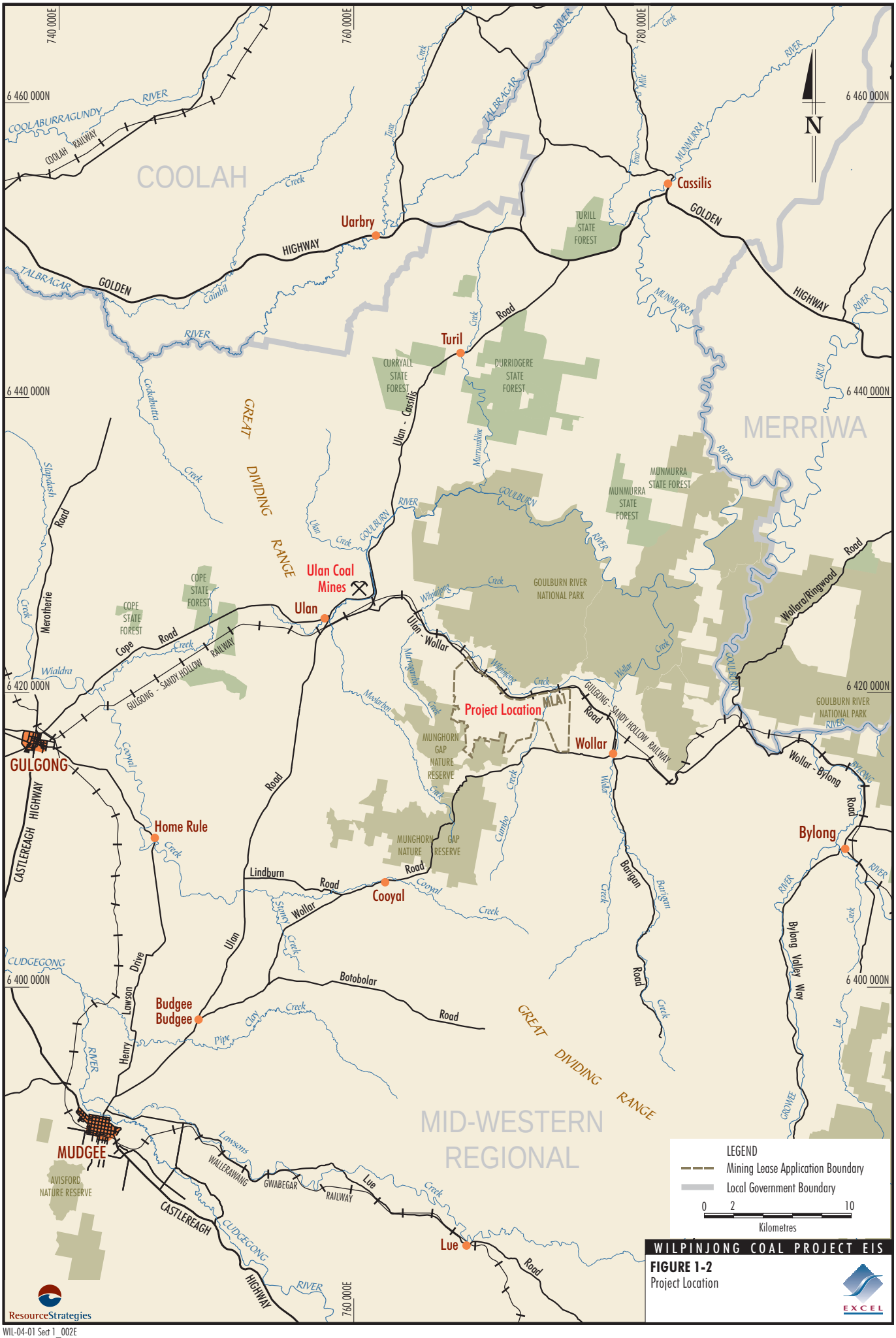

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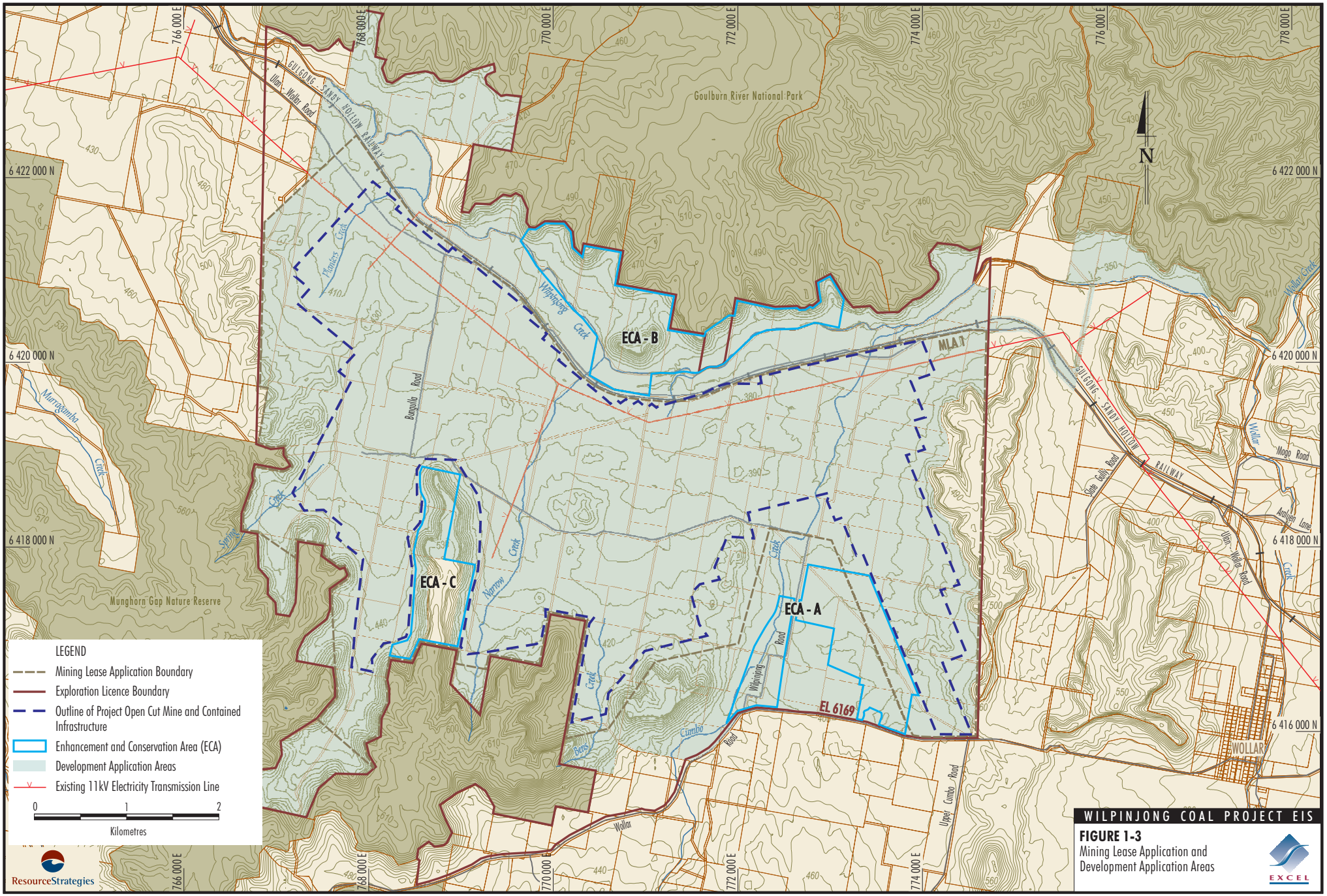

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- closure of Wilpinjong Road and Bungulla Road;
- realignment of two sections of Ulan-Wollar Road (including the relocation of two road-rail crossings);
- relocation of the existing 11 kilovolt (kV) electricity transmission line;
- an on-site temporary construction camp to accommodate up to 100 people during the construction phase;
- a rail spur and rail loop;
- coal handling and train loading infrastructure; and
- transportation of product coal to market via train.

The Project has an expected peak production rate of up to approximately 13 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal. Up to approximately 8.5 Mtpa of the ROM coal would be washed in the CHPP.

A detailed description of the Project, including the indicative timing of parts of the development, is provided in Section 2. The objectives of the Project in relation to environmental performance are provided in Sections 4 and 5.

1.2.2 Project Snapshot

Key Project information is summarised in Table 1-1.

1.2.3 Mining Tenements and Land Tenure

The Minister for Mineral Resources granted EL 6169 to WCPL on 22 December 2003, covering an area of approximately 4,220 ha (Figure 1-3). MLA 1 was lodged in February 2005 over an approximate 2,800 ha portion of EL 6169.

In places, MLA 1 extends beyond the boundary of the Project Development Application (DA) area (Figure 1-3); as it was determined during EIS finalisation that Project development would not extend into these additional areas. An aerial view of the area within and adjacent to MLA 1 is presented on Figure 1-4.

Land tenure within and adjacent to MLA 1 is shown on Figures 1-5 and 1-6.

A number of dwellings within or adjacent to the Project MLA 1 are owned by WCPL and currently vacant or tenanted (Figure 1-5). These dwellings would be progressively vacated, and in some cases demolished, by Year 4 of the Project life. Those WCPL-owned dwellings that would be tenanted during portions of the Project life are assessed in the relevant sections of this EIS.

1.2.4 Proponent

The Project is being developed by WCPL, which is a wholly owned subsidiary of Excel Coal Limited. The registered and principal office of both Excel Coal Limited and WCPL is:

Excel Coal Limited
Level 9
1 York Street
SYDNEY NSW 2000
Telephone: (02) 9247 2900

WCPL's site office is located at Cumbo Creek Homestead near Wollar:

Wilpinjong Coal Pty Limited
1434 Ulan-Wollar Road
WILPINJONG NSW 2850
Telephone: (02) 6373 4310

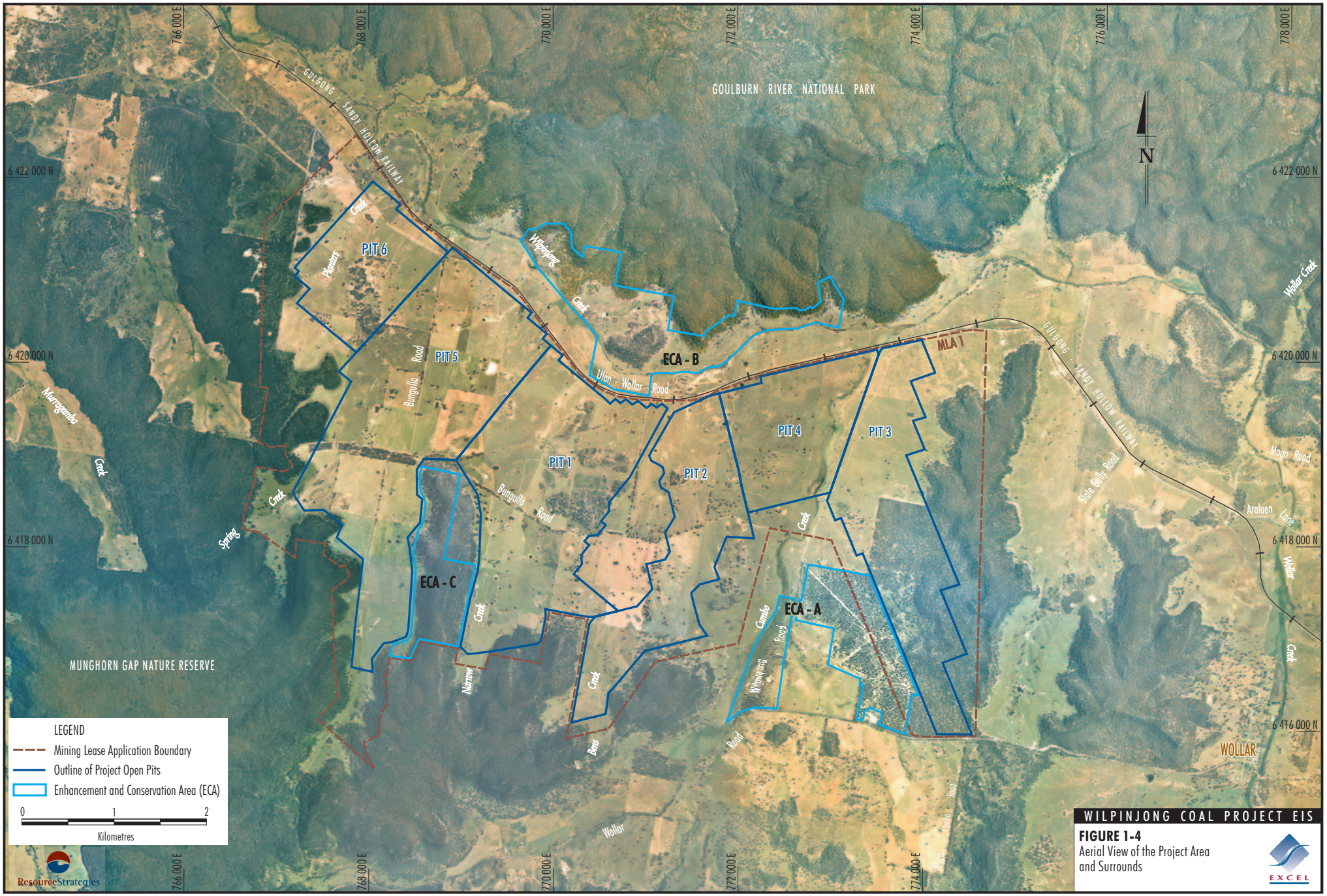
1.3 DEVELOPMENT APPROVAL PROCESS

This section outlines the development approval process relevant to the assessment of the Project. Approval for the Project is sought in the form of a single DA as described in Section 1.2 (Figure 1-3).

The Project DA would be assessed in accordance with the framework established by the *Environmental Planning and Assessment Act, 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulations).

Table 1-1
Project Snapshot

Summary	
Project	Open cut mine, extracting up to 13 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal for processing and supply to both domestic electricity generation and export markets. Construction and operation of rail and coal handling/train loading infrastructure to facilitate transport of product coal to market.
Proponent	Wilpinjong Coal Pty Limited (WCPL), which is a wholly owned subsidiary of Excel Coal Limited.
Tenement Status	WCPL has applied for a mining lease covering a 2,800 hectares (ha) portion of Exploration Licence (EL) 6169.
Mining	Open cut mining at a rate of up to 13 Mtpa of ROM coal with an average stripping ratio of 1.3:1 (bank cubic metres waste rock:tonne ROM coal) and an estimated total open cut reserve of approximately 251 million tonnes (Mt).
Mine Waste Rock Management	Waste rock would be deposited predominantly within mined-out voids.
Coal Washing	Construction and operation of a Coal Handling and Preparation Plant (CHPP) capable of washing up to approximately 8.5 Mtpa of ROM coal.
Water Supply	Peak make-up water demand of approximately 6.2 million litres (ML) per day to be met from runoff recovered from mine operational areas, recovery from tailings disposal areas, open cut dewatering, advanced dewatering of pit areas and supply from a borefield.
Water Supply Borefield and Pipeline	Up to 19 bores proposed at various locations north of MLA 1. Water extracted from the water supply bores would be reticulated to the CHPP water supply storage.
Coarse Rejects and Tailings Management	Coarse rejects would be placed predominantly within mined-out voids. Apart from initial tailings disposal in a partitioned section of the CHPP water supply storage, all tailings would be placed within in-pit tailings disposal areas.
Cumbo Creek Relocation	A block bank would be constructed across Cumbo Creek to direct sub-surface and surface flows into a relocation corridor constructed adjacent to Cumbo Creek.
Project Life	An expected Project life of 21 years (from the date of grant of a mining lease).
Employment	Construction workforce of 200 employees on average and an average operational workforce of 100 employees (with up to 162 employees at peak production).
Construction	Construction of the rail spur and rail loop, coal stockpiling, reclaim and train loading infrastructure, CHPP and mine facilities area would be undertaken over a period of approximately 6 months.
Construction Camp	Accommodation for up to 100 employees on-site during the construction phase.
Hours of Operation	Mining operations would take place 24 hours per day, seven days per week. Construction activities would generally be undertaken between 7.00 am and 6.00 pm, up to seven days per week. Trains would operate 24 hours per day, seven days per week (expected average of four trains per day).
Product Coal	Production of up to 10 Mtpa of coal predominantly for the purpose of fulfilling contractual obligations to Macquarie Generation. Approximately 147 Mt and 33 Mt of product coal would be produced for domestic use and export, respectively.
Product Coal Transport	Product coal would be loaded onto trains and transported to market via the Project rail loop and rail spur connected to the Gulgong-Sandy Hollow railway.
Roadworks	Mine access road, internal access roads, haul roads and temporary access to and from the construction camp. Closure of Wilpinjong Road and Bungulla Road. Realignment of two sections of Ulan-Wollar Road later in the Project life (including the relocation of two road-rail crossings).
Enhancement and Conservation Areas (ECAs)	The ECAs have been developed to help conserve and expand areas of remnant vegetation and protect Aboriginal cultural heritage sites, while enhancing the habitat available to flora and fauna.



WILPINJONG COAL PROJECT EIS

FIGURE 1-4
Aerial View of the Project Area and Surrounds

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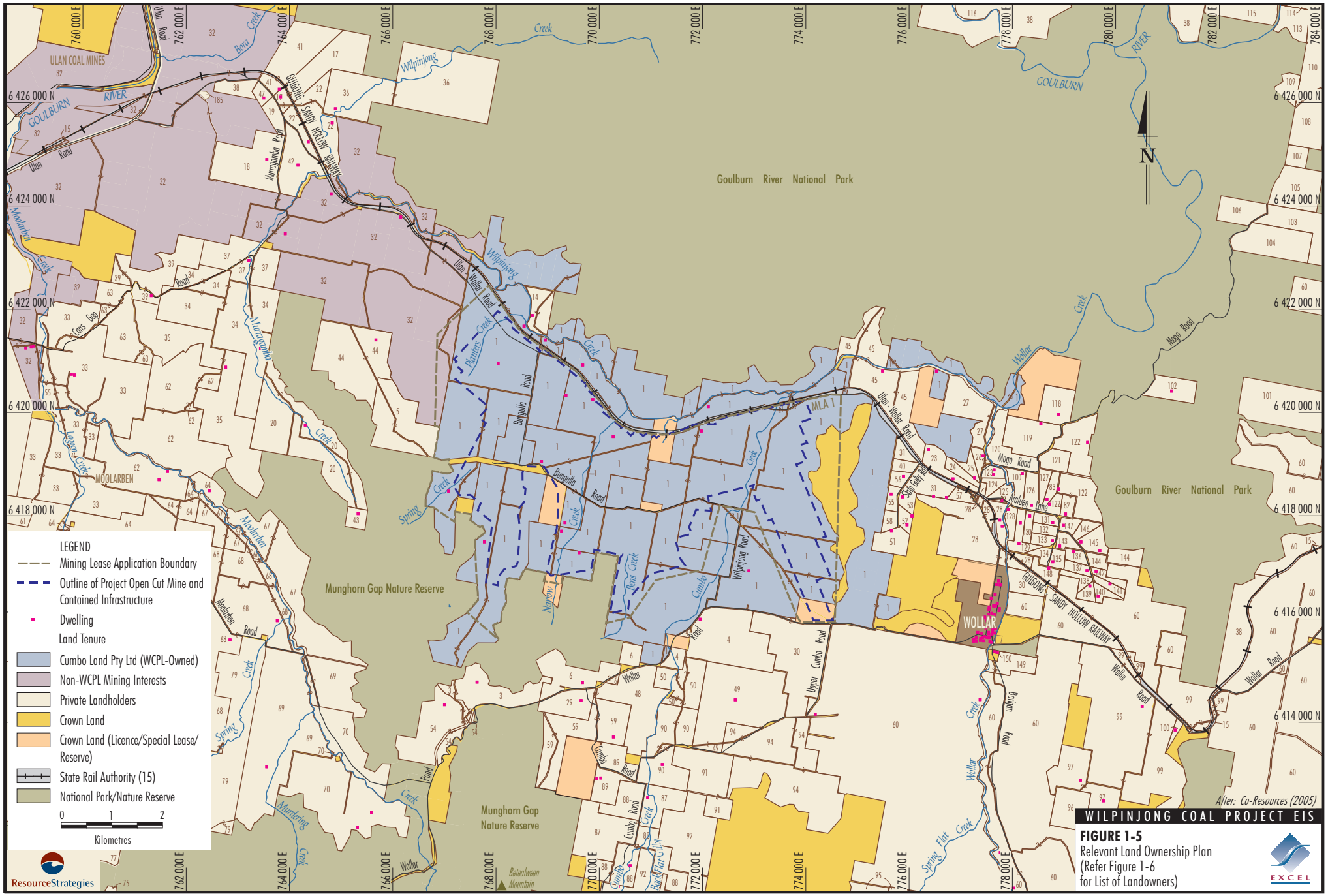

After: Co-Resources (2005)

WILPINJONG COAL PROJECT EIS

FIGURE 1-5
Relevant Land Ownership Plan
(Refer Figure 1-6
for List of Landowners)

EXCEL

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1	Cumbo Land Pty. Ltd.
3	DT Maranda
4	EJ & JE Robinson
5	EM & DH & C Power
6	WC & VM Langshaw
14	SJ Close
15	State Rail Authority
17	PF Renshaw
18	TR & NC Simpson
19	JOJ & SJ Borrowdale
20	BW & HJ Best
22	LA Green
23	PA & ID Bloomfield
24	JA & TS Peach
25	SE & JE Pettit
26	K & VC Christiansen
27	BC McDermott
28	BP & FV & MJ & JM Power
29	JH & ME Kattau
30	WF Gaffney
31	DE & AM Conradt
32	Ulan Coal Mines Limited
33	MJ & PM Swords
34	SE Birt & KM Hayes
35	MJ Carlisle
36	C & C Dalglish
37	CN & HL Davies
38	State Of N.S.W.
39	BJ & MR Wallis
40	CG & EK Plummer
41	M & J Transport & Investments Pty. Ltd.
42	DJ Little & AK Salter
43	M & E McKinna
44	GC & JK Helm
45	JAW Smith
47	DA Herring
48	JR & BM Evans
49	RSM & LD Harkin
50	LD Thompson & RJ Hopper
51	P Bailey
52	CR Long
53	RW & JL Reynolds
54	GC & EM Batty
55	SC & M Fox
56	GJ & GR Rogers
57	F Nagy
58	FN Maher
59	RW & DG Langshaw
60	RWB & NJ & DB Reid
61	J Szymkarczuk
62	MJ Swords
63	MJ & H Swords
64	DJ & Y Rayner
66	M Bloom & R Beheit
67	K & RE Mayberry
68	EC Mayberry
69	DJ & JG Stokes
70	JW & JG O'Sullivan
71	J Asztalos
78	KO Bishop
79	C Mayberry
80	RB Cox
81	D Chinner
82	RJ & LM Jackson
83	G & DJ Hayes
85	MB Cox
87	J & D Conden
88	CB Parker
89	KM Newing
90	CA & CD Pattullo
91	GK & JCM Gordon
92	JL & DE Rheinberger
94	GM & KL McKenzie
95	TW Marskell
96	BJ & LP Egan
97	SA Marks
98	DJ Dean & JM Drabbe
100	TJ & VE Rheinberger
101	NAB Pierce
102	W Filipczyk
103	MR Molloy
104	WB & PA Deane
105	ELM Toombs
106	JA Sales
107	RJ Lee
108	R Campbell
109	MO Vaisey
110	GS & JR Smiles
112	B Ritchie
113	AJ Brett & S & D Hilt
114	BJ Hughes & CA Beinssen & K Aslett
115	E & T Schoenfelder
116	PD & JE Griffiths
117	SA McHugh
118	DS & D Ponton
119	TJ & JA Peach
120	JT & JW Fitzpatrick
121	MJ Fitzpatrick
122	PN Hardiman
123	A & M Zivkovic
124	A Zivkovic
125	AC & FM Bayliss
126	SA & DL Emery
127	P & DJ Standen
128	WG Pongratz
129	KM Reynolds
130	L Batty & D Hirons
131	MR Field
132	SL Cook
133	P & J Harty
134	CL Ammann
135	R & K Roser
136	M & R Bryson
137	A Daniel
138	P & M & B Woolford
139	P & M Woolford
140	A Camilleri
141	C Hull
142	D & S Williams
143	R Bale & K Lawes
144	G & J Hibberd
145	H Andrews
146	D & B Spearpoint
147	D Currington
148	P Noonan
149	K Cross & J Richardson
150	E Tindale & A McDonald & W Wilson
185	Council of the Shire of Mudgee

Source: Co-Resources (2005)

WILPINJONG COAL PROJECT EIS

FIGURE 1-6
Relevant Land Ownership List
(Refer Figure 1-5 for
Land Ownership Plan)

ResourceStrategies

EXCEL

1.3.1 Permissible Development

The Project DA area is situated wholly within the Mid-Western Regional LGA (MWRLGA) and on land zoned as Zone 1(a) (General Rural) by the *Mudgee Local Environmental Plan 1998* (Mudgee LEP) under the EP&A Act.

Mining development is permissible on lands zoned Zone 1(a) (General Rural) with development consent (Section 1.3.5).

1.3.2 State Significant Development

A declaration made by the then Minister for Urban Affairs and Planning on 29 June 2001, under section 76A (7) of the EP&A Act, identifies classes of development that are considered to be State significant development.

Schedule 1 of the declaration includes new coal mines that require a new mining lease under section 63 of the *Mining Act, 1992*. Development covered by the Project DA would require a new mining lease under section 63 of the *Mining Act, 1992* and the Project is therefore State significant development.

In accordance with section 76A (9) of the EP&A Act, the Minister for Infrastructure and Planning is the consent authority for State significant development.

1.3.3 Designated Development

Section 77A of the EP&A Act defines designated development as "*development that is declared to be designated development by an environmental planning instrument or the regulations*".

Schedule 3 of the EP&A Regulations establishes development that is defined as designated development, including the category of "coal mines" presented below.

Clause 11 – Coal Mines

Coal mines that mine, process or handle coal, being:

a) underground mines, or

b) open cut mines:

i) that produce or process more than 500 tonnes of coal or carbonaceous material per day, or

ii) that disturb or will disturb a total surface area of more than 4 hectares of land (associated with a mining lease or mineral claim or subject to a notice under section 8 of the Mining Act 1992) by clearing or excavating, by constructing dams, ponds, drains, roads, railways or conveyors or by storing or depositing overburden, coal or carbonaceous material or tailings, or

c) mines that are located:

i) in or within 40 metres of a natural waterbody, wetland, a drinking water catchment or an environmentally sensitive area, or

ii) within 200 metres of a coastline, or

iii) on land that slopes at more than 18 degrees to the horizontal, or

iv) if involving blasting, within 1,000 metres of a residential zone or within 500 metres of a dwelling not associated with the mine.

Under Part 1 of Schedule 3 of the EP&A Regulations, development covered by the Project DA is designated development under the category of "coal mines", as it includes open cut mining that would produce more than 500 tonnes (t) of coal per day.

Section 78A (8) of the EP&A Act requires that an EIS be prepared for designated development in the form prescribed by the EP&A Regulations. Clause 71 of the EP&A Regulations sets out the form of an EIS and clause 72 states that the contents of an EIS must include the matters referred to in guidelines established by the Director-General, if such guidelines exist for a particular development. This EIS is prepared in accordance with the *Coal Mines and Associated Infrastructure EIS Guideline* (DUAP, 2000).

This EIS has therefore been prepared to accompany the Project DA.

1.3.4 Integrated Development

Integrated development is development that requires development consent and one or more specified approvals from State agencies under the following Acts:

- *Fisheries Management Act, 1994;*
- *Heritage Act, 1977;*

- *Mine Subsidence Compensation Act, 1961;*
- *National Parks and Wildlife Act, 1974;*
- *Protection of the Environment Operations Act, 1997;*
- *Rivers and Foreshores Improvement Act, 1948;*
- *Roads Act, 1993;*
- *Rural Fires Act, 1997;*
- *Water Act, 1912;* and
- *Water Management Act, 2000.*

Where the applicant decides to lodge a DA for integrated development, and any of these approvals are required, the consent authority must obtain the General Terms of Approval from the relevant State agency.

Statutory approvals under these Acts that are expected to be required for the Project are considered in Table 1-2. Based on the requirement for these approvals, the DA is for integrated development in accordance with Section 91 of the EP&A Act.

1.3.5 Environmental Planning Instruments

Mudgee Local Environmental Plan 1998

The Project DA area is wholly within the *Mudgee Local Environmental Plan 1998* (Mudgee LEP) under the EP&A Act. The Mudgee LEP was prepared for the former *Mudgee Local Government Act* and now operates as the local environmental plan for this particular area in the MWRLGA.

Under clause 10 of the Mudgee LEP "Mines" are permissible on lands zoned Zone 1(a) (General Rural) with development consent as that use is not listed as being a prohibited use in the zoning table.

Mudgee LEP refers throughout to "Council" in its capacity as consent authority. The Project is State significant development for which the consent authority is the Minister for Infrastructure and Planning. References to "Council" in the Mudgee LEP should therefore be interpreted as references to the Minister for Infrastructure and Planning for this Project.

Table 1-2
Expected Integrated Approval Requirements

Act	Provision	Requirement
Fisheries Management Act, 1994	s.201	A permit is required under section 201 of the *Fisheries Management Act, 1994* to carry out dredging or reclamation works in a waterway.
	s.219	A permit is required to construct or alter a dam, floodgate, causeway or weir across or within a bay, inlet, river or creek, or across or around a flat, such that the passage of fish could be blocked.
National Parks and Wildlife Act, 1974	s.90	Known Aboriginal objects that would be destroyed, defaced or damaged as a result of Project activities, would require consent under section 90 of the *National Parks and Wildlife Act, 1974*.
Protection of the Environment Operations Act, 1997	ss.43(a), 43(b), 47, 48 and 55	An Environment Protection Licence (EPL) is required for the undertaking of scheduled development works and/or scheduled activities under the *Protection of the Environment Operations Act, 1997*.
Rivers and Foreshores Improvement Act, 1948	Part 3A	A permit is required under section 22B of the Act to excavate or remove material from *protected* land or do anything that obstructs or detrimentally affects the flow of *protected* waters.
Roads Act, 1993	s.138	Under section 138 of the Act, consent is required to: *(a) erect a structure or carry out a work in, on or over a public road, or* *(b) dig up or disturb the surface of a public road, or* *(c) remove or interfere with a structure, work or tree on a public road, or* *(d) pump water into a public road from any land adjoining the road, or* *(e) connect a road (whether public or private) to a classified road.*
Water Act, 1912	ss.10 and 116	A licence is required under section 10 of this Act to divert or dam any stream of water, whether permanent or intermittent, which flows in a natural or artificial channel. A licence is required under section 116 of this Act to sink a bore and to take or use water obtained from any such bore.
Water Management Act, 2000	Selected sections commenced	Licences required under the provisions of the *Water Act, 1912* would be required under the provisions of the *Water Management Act, 2000* once the relevant sections were commenced.

Objectives of the Mudgee LEP

Clause 2(2) of the Mudgee LEP outlines the general aims, objectives, policies and strategies of the Plan, which are:

(a) to encourage sound land management practices and to protect land subject to environmental hazards from inappropriate development and promote sustainable development, and

(b) to protect land of significant agricultural, natural resource and scenic value, and

(c) to encourage development of the area's resources and a broadening of its economic base, with particular emphasis on growth of employment generating activities such as tourism, mining, extractive and rural industries and intensive agriculture, and

(d) to ensure that development is appropriately located having regard to environmental constraints, accessibility and existing land use patterns, and

(e) to provide for the future long term urban development and protect the existing residential amenity of the towns of Mudgee and Gulgong, and

(f) to enhance the environmental heritage of the Mudgee local government area and to ensure the conservation of identified items of historic, archaeological, architectural and scientific interest, and

(g) to provide for the proper control and management of subdivision and other development, consistent with the other aims and objectives of this plan, and

(h) to ensure that development is adequately serviced in an economic, equitable and efficient manner.

Neither the EP&A Act nor the Mudgee LEP require a consent authority to have regard to these general objectives in determining whether to consent to a development. Nonetheless, the Project is consistent with these general objectives. The Project is an employment generating mining project that would result in the development of the area's resources (coal), potentially leading to a broadening of the area's economic base.

In addition, the Project incorporates sustainable development principles (Section 1.6) and impact mitigation and environmental management and monitoring measures (Sections 4 and 5) that provide for the management of the potential environmental impacts of the proposal.

Zone Objectives

Clause 9(4) of the Mudgee LEP provides:

> *Except as otherwise provided by this plan, the Council must not grant consent to the carrying out of development on land to which this plan applies unless the Council has considered the objectives of the zone applying to that land and the extent to which the proposed development is consistent with those objectives*.

The land comprising the Project DA area is wholly situated on land zoned Zone 1(a) (General Rural) (Figure 1-3).

The Mudgee LEP establishes the following objectives for lands zoned Zone 1(a) (General Rural):

(a) to promote the conservation of productive agricultural land for cropping and grazing; and

(b) to discourage fragmentation of landholdings into holdings which are inadequate to support commercial farming practices; and

(c) to permit the development of appropriate agricultural land uses and prevent development of inappropriate non-agricultural land uses, such as small lot rural-residential subdivision; and

(d) to permit the development of mines and extractive, offensive and hazardous industries, but only in an environmentally acceptable manner; and

(e) to encourage consolidation of existing allotments that are too small to support commercial farms and their development into productive commercial farmholdings; and

(f) to ensure that development does not significantly detract from existing rural character or create unreasonable or uneconomic demands for provision or extension of public amenities and services; and

(g) to permit some non-agricultural land uses and agricultural support facilities, such as rural industries, tourist facilities and the like, which are in keeping with the other zone objectives and which will not adversely affect agricultural productivity.

The Project is directly within objective (d), as the development of a mine in an environmentally acceptable manner, as described in Section 4. The environmental acceptability of the Project is confirmed by the application of the proposed environmental management and mitigation measures and the Environmental Protection Plan (EPP) as described in Sections 4 and 5.

The conservation of productive agricultural land for grazing in accordance with objective (a) is supported by the progressive nature of mining and rehabilitation. As set out in Sections 2 and 5, substantial areas are available for grazing throughout the life of the Project prior to and after mining, and substantial parts of the Project DA area will be returned to grazing after the Project.

The concentration of land ownership in the Project area is a secondary consequence of the Project that is consistent with objectives (b), (c) and (e).

The Project is proposed in an area with close proximity to other mining developments. Therefore, the Project will not significantly detract from the existing rural character, and is not inconsistent with objective (f). The Project as described in this EIS will not place unreasonable or uneconomic demands for the provision or extension of public amenities and services (Appendix J).

Objectives (c) and (g) are not relevant to the extent they identify alternative landuses to be permitted in the zone.

Heritage

Division 3 of Part 3 of the Mudgee LEP addresses the conservation of heritage items, which are listed in Schedule 1 of the Mudgee LEP. There are no heritage items listed in Schedule 1 of the Mudgee LEP that are located in the Project area. Project Aboriginal and non-Aboriginal heritage assessments have been conducted and are provided in Appendices F and G, respectively.

Other Matters Required to be Addressed under the Mudgee LEP

Division 4 of Part 3 of the Mudgee LEP provides a number of miscellaneous provisions of relevance to the Project including the following:

Clause 34 Access to main roads

(1) The Council must not grant consent to development involving vehicular access from a site to a main road unless it is satisfied that:

(a) no other reasonable and practicable access is available to the site, and

(b) the design of the vehicular access point will enable the safe entry and exit of vehicles to the site, and

(c) the level of traffic likely to be generated by development on the site will not prejudice the efficiency and safety of the main road.

As described in Section 2, the proposed mine access road would provide access to the Project from Wollar Road (Main Road 208), and would involve the realignment of an existing intersection on this road (i.e. the Wilpinjong Road intersection). The intersection would be designed to suitable standards (Section 2.3.2) and the operation of this intersection is assessed in Section 4.12 and Appendix K. Accordingly, the Minister can be satisfied as to these matters.

Clause 38 Land subject to bushfire hazards

The Council must not grant consent for the subdivision or erection of a building on land to which this plan applies which is subject to bushfire hazards until it has made an assessment of:

(a) whether adequate provision has been made for access for fire-fighting vehicles, fire breaks, reserves and fire radiation zones; and

(b) in the case of a subdivision, whether the depth of any allotments to be created by the subdivision which would adjoin a perimeter road should be enlarged, and

(c) in the case of the erection of buildings:

(d) whether the buildings have been sited in a manner which reduces bushfire hazard, and

(e) the necessity for fireproof building materials, and

(f) the means of access for fire-fighting vehicles, and

(g) the means available to ensure that fire protection measures, including fire radiation zones and hazard reduction, are appropriately maintained.

WCPL would incorporate suitable access for fire-fighting vehicles, utilise fireproof building materials and consider fire breaks and fire radiation zones in the design of infrastructure and buildings. WCPL would also site buildings in a manner which reduces bushfire hazard. A Bushfire Management Plan would also be developed for the Project (Section 5.1.2.3). Accordingly, the Minister can be satisfied as to these matters.

Clause 42 Consultation with the National Parks and Wildlife Service

The DA and accompanying EIS are required to be referred to the Department of Environment and Conservation (DEC) (formerly National Parks and Wildlife Service [NPWS]) because the Project DA area adjoins land within Zone 8(a).

Other Environmental Planning Instruments

State Environmental Planning Policy No. 11 (Traffic Generating Developments)

State Environmental Planning Policy (SEPP) 11 requires the consent authority to refer a copy of the Project DA and accompanying EIS to the Roads and Traffic Authority (RTA) for it to make a representation in relation to the development.

State Environmental Planning Policy No. 33 (Hazardous and Offensive Development)

Clause 13 of SEPP 33 requires the consent authority, in considering a DA for a potentially hazardous or a potentially offensive industry, to take into account:

(c) in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and

(d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application)…

For development of potentially hazardous industry, SEPP 33 requires a preliminary hazard analysis (PHA) to be prepared. Although the Project is not "industry" for the purposes of SEPP 33, a preliminary hazard analysis has been conducted in accordance with the Director-General's requirements (Appendix L). Project alternatives are discussed in Section 1.7.

State Environmental Planning Policy No. 44 (Koala Habitat Protection)

SEPP 44 requires the consent authority for any DA in certain LGAs (including MWRLGA) to consider whether land subject to a DA is "*potential Koala habitat*" or "*core Koala habitat*".

An assessment of potential and core Koala habitat is presented in Appendix HB and Section 4.8.1. This assessment concluded that the lands in the Project area do not fall within the definition of potential or core Koala habitat and there was no evidence of the presence of Koalas. Therefore the provisions of SEPP 44 are not considered applicable to the Project.

State Environmental Planning Policy No. 45 (Permissibility of Mining)

The objective of SEPP 45 is to facilitate development for the purposes of mining within NSW. SEPP 45 only applies where mining is only permissible with development consent in the circumstances where the consent authority must be satisfied as to certain provisions or matters. The SEPP permits mining without such provisions having to be satisfied. There are no such provisions in the Mudgee LEP that constrain the permissibility of the development. SEPP 45 is therefore not applicable.

State Environmental Planning Policy No. 55 (Remediation of Land)

SEPP 55 aims to provide a State-wide planning approach to the remediation of contaminated land. Under SEPP 55, planning authorities are required to consider the potential for contamination to adversely affect the suitability of the site for its proposed use.

A consent authority must consider the following under clause 7(1):

(a) whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

Further under clause 7(2), before determining an application for consent to carry out development that would involve a change of use of land, the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

Because there is a change in use from agricultural activities to mining, a preliminary land contamination investigation has been undertaken (Appendix O). The investigation was undertaken in accordance with the Managing Land Contamination, Planning Guidelines (DUAP, 1998), as required and the investigation included an appraisal of the site's history and a report based on a visual site inspection and assessment. The DA area is considered suitable for a landuse change from agriculture to the development of the Project (Appendix O).

Section 94 Contribution Plans and Development Control Plans

The Mid-Western Regional Council (MWRC) has advised that the current (former Mudgee LGA) Section 94 Contributions Plans will be subject to revision in the near future (MWRC, pers. comm., 1 March 2005).

As part of its consultation programme during the EIS assessment process, WCPL would undertake consultation with the MWRC regarding a dedication or contribution for the provision, extension or augmentation of public services by the Council, having regard to the additional demand on these services that could potentially result from the Project. Under section 94A, the Minister must consider any section 94 contributions plan but may impose conditions that are inconsistent with that plan.

There are no Development Control Plans currently in force that are relevant to the Project (MWRC, pers. comm., 20 April 2005).

1.3.6 Other Statutory Approvals

The following Acts may be applicable to the Project:

- *Coal Mine Health and Safety Act, 2002;*
- *Coal Mines Regulation Act, 1982;*
- *Dams Safety Act, 1978;*
- *Dangerous Goods Act, 1975;*
- *Environmental Planning and Assessment Act, 1979;*
- *Fisheries Management Act, 1994;*
- *Heritage Act, 1977;*
- *Local Government Act, 1993;*
- *Mining Act, 1992;*
- *National Parks and Wildlife Act, 1974;*
- *Native Title (Commonwealth) Act, 1993;*
- *Native Title (New South Wales) Act, 1994;*
- *Native Vegetation Act, 2003;*
- *Native Vegetation Conservation Act, 1997;*
- *Noxious Weeds Act, 1993;*
- *Protection of the Environment Operations Act, 1997;*
- *Rail Safety Act, 2002;*
- *Rivers and Foreshores Improvement Act, 1948;*
- *Road and Rail Transport (Dangerous Goods) Act, 1997;*
- *Roads Act, 1993;*
- *Rural Fires Act, 1997;*
- *Soil Conservation Act, 1938;*

- *Threatened Species Conservation Act, 1995;*
- *Water Act,1912;*
- *Water Management Act, 2000;* and
- *Wilderness Act, 1987.*

The Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) may also be applicable to the Project as described below.

1.3.7 Environment Protection and Biodiversity Conservation Act, 1999

The EPBC Act commenced operation on 16 July 2000 and repealed a number of existing Commonwealth environmental laws, particularly those aspects of the environment that are of *"national environmental significance"* as its primary objective. The EPBC Act defines proposals that are likely to have a significant impact on a matter of environmental significance as a *"controlled action"*. Proposals that are, or may be, a controlled action are required to be referred to the Commonwealth Minister for the Environment and Heritage for a determination as to whether or not the action is a controlled action. The Project will be referred to the Commonwealth Minister for the Environment and Heritage for an assessment of whether or not it includes a controlled action under the EPBC Act. If the action is a controlled action, either a separate approval process will be required for those aspects of the proposal that form part of the controlled action or the Commonwealth Minister may declare that the assessment under the NSW EP&A Act is sufficient and a separate assessment will therefore not be required.

1.4 DOCUMENT STRUCTURE

This EIS has been prepared to accompany the Project DA, in accordance with the provisions of Part 4 of the EP&A Act and considering the matters referred to in the Department of Infrastructure, Planning and Natural Resources (DIPNR) *Coal Mines and Associated Infrastructure - EIS Guideline* (DUAP, 2000).

The EIS comprises a main text component and supporting study components, which include Appendices A through O. An overview of the main text, incorporating Sections 1 to 7, is presented below.

Section 1 Provides background information on the Project including: location; an overview of the Project; consultation undertaken; development alternatives considered; legislative requirements; and the principles of ecologically sustainable development.

Section 2 Describes the Project.

Section 3 Provides a description of the existing environment in the vicinity of the Project.

Section 4 Describes the potential impacts of the Project and associated mitigation measures.

Section 5 Outlines the EPP for the Project which incorporates environmental management and monitoring, rehabilitation areas, regeneration areas and ECAs.

Section 6 Provides a summary of the key EIS requirements of Integrated/Other Authorities and identifies where these requirements have been addressed in the EIS.

Section 7 Lists documents referenced within Sections 1 to 6.

Section 8 Defines abbreviations, acronyms and terms used in Sections 1 to 6.

The EIS has been prepared in accordance with Director-General's Requirements (DGRs) issued by DIPNR (Section 1.5.3), as well as EIS requirements provided by Integrated/Other Authorities including DIPNR, DEC, Department of Primary Industries – Mineral Resources (DPI-MR) (formerly DMR), RTA, Department of Primary Industries – Fisheries (DPI-Fisheries) (formerly NSW Fisheries) and MWRC (formerly Mudgee Shire Council), following the Planning Focus Meeting conducted in April 2004 (Section 1.5 and Attachment 1).

During the course of an August 2004 public meeting, community members were invited to make formal submissions to DIPNR highlighting aspects of the Project that were of specific interest, that could then be included in the DGRs for the EIS. No relevant written submissions from the community were provided to WCPL by the time of EIS printing.

Subsequent issues raised by government agencies and the public during the EIS consultation programme are not included in the EIS reconciliation tables (Section 6), however, they have been considered in the development of the EIS. Section 1.5 provides a summary of the consultation conducted for the Project and the issues that were raised during this consultation.

As shown on Figure 1-2, the Ulan Coal Mines are located approximately 11 km to the north-west of the Project, near the village of Ulan. The Ulan Coal Mines incorporate both underground and open cut mining areas and associated surface infrastructure including a CHPP, rail loop, rail loading and administrative facilities. The Ulan Coal Mines operate under a number of consents. It is noted that a 2 Mtpa underground mining operation comprising Underground Mine No. 4, a new CHPP, rail loop and train loading facility was approved in October 1985 as part of Stage 2 of the Ulan Coal Mines (hereafter referred to as Ulan Stage 2). The Underground Mine No. 4 and associated surface facilities that comprised part of Ulan Stage 2 were not developed at that time.

Other components of Ulan Stage 2 were however developed (i.e. the Ulan Stage 2 open cut and Underground Mine No. 3 commenced in the 1980s [Kinhill, 1998]) and form part of the existing Ulan Coal Mines development. The potential cumulative impacts of the Ulan Coal Mines (including the as yet undeveloped components of Stage 2) are considered where relevant in this EIS.

Appendices A to O contain supporting documentation, including a number of independent specialist reports:

Appendix A	Surface Water Assessment
Appendix B	Groundwater Impact Assessment
Appendix C	Assessment of the Acid Forming Potential and Salinity of Overburden, Coal and Coal Washery Waste
Appendix D	Construction, Operation and Transportation Noise and Blasting Impact Assessment
Appendix E	Air Quality Impact Assessment
Appendix F	Aboriginal Cultural Heritage Assessment
Appendix G	Non-Aboriginal Heritage Impact Assessment
Appendix HA	Flora Assessment
Appendix HB	Terrestrial Fauna Assessment
Appendix HC	Bat Fauna Assessment
Appendix HD	Aquatic Ecosystem Assessment
Appendix HE	Eight Part Tests of Significance
Appendix I	Economic Assessment
Appendix J	Community Infrastructure Assessment
Appendix K	Road Transport Assessment
Appendix L	Preliminary Hazard Analysis
Appendix M	Soils, Rural Land Capability and Agricultural Suitability Assessment
Appendix N	Visual Impact Assessment
Appendix O	Land Contamination Assessment

1.5 CONSULTATION REPORT

WCPL is committed to an open and constructive consultation programme, which aims to:

- inform government and public stakeholders of the nature and status of the Project;
- present information to stakeholders to facilitate a clear understanding of the Project;
- identify local concerns or interests in the Project; and
- establish dialogue between WCPL and government and community stakeholders that would be on-going, should the Project be approved.

Consultation undertaken to date is summarised in the following sections and includes a synopsis of relevant issues raised.

1.5.1 Public Consultation

The Minister for Mineral Resources appointed Ms Margaret MacDonald-Hill to chair a Project Community Consultative Committee (CCC). The Project CCC was formed on 11 February 2004 and comprises four community representatives, a local council representative and representatives from WCPL and DPI-MR. Several Project CCC meetings have been held which has enabled WCPL to inform the community of its plans and assessment findings and community representatives to raise any concerns identified by the wider community. The Project CCC has met on eight occasions since its formation: 11 February, 5 May, 3 August, 5 October and 7 December 2004; and 8 February, 23 March and 3 May 2005. The Project CCC will continue to meet on a monthly basis.

Public meetings/forums held in August 2004, December 2004 and March 2005 at Wollar have also been utilised to encourage the community to raise any concerns they might have during the environmental assessment period. During the course of the August 2004 meeting, community members were invited to make formal submissions to DIPNR. No relevant written submissions were provided to WCPL by the time of EIS printing.

WCPL appointed a Community Liaison Officer to act as a primary point of contact for members of the community wishing to have direct discussions with the company. The role of the Community Liaison Officer is to respond to information requests and provide information on the status of the approval process and associated studies.

Consultation has also been undertaken in other forms including regular contact with surrounding landowners during the exploration drilling programme throughout 2004, conduct of EIS baseline studies in 2004/2005 (i.e. flora and fauna, noise, visual, Aboriginal heritage and water resources) and conduct of a bore census in February 2005.

During the CCC and public meeting/forums, updates of the status of environmental studies were provided and on 23 March 2005, preliminary EIS assessment findings in relation to issues of community interest were presented and discussed at a public meeting in Wollar.

Post lodgement of the EIS, WCPL will continue to consult with the public regarding the Project and proposes to:

- discuss the Project individually with interested neighbours;
- conduct an informal information session at Wollar during the EIS exhibition period, where interested parties can attend and discuss issues of concern or interest to them; and
- provide an opportunity for local people in the Project area to make an appointment with the company to discuss EIS assessment findings that are of specific relevance to them.

Table 1-3 provides a synopsis of relevant issues raised by local landowners and the general public during the consultation programme and outlines where these issues have been addressed in the EIS main text.

WCPL is a member of the Wilpinjong Landcare Group. WCPL would co-operate with Landcare in regard to land management initiatives within the Project area.

1.5.2 Aboriginal Groups

Consultation with the Aboriginal community included the following groups:

- Mudgee Local Aboriginal Land Council (MLALC);
- Warrabinga Native Title Claimants Aboriginal Corporation (WBNTCAC); and
- Murong Gialinga Aboriginal and Torres Strait Islander Corporation (MGATSIC).

Introductory consultation meetings were held on 5 August 2004 to describe the Project, discuss assessment methodology, archaeological and cultural heritage assessment timing, aims and expectations. The meetings were attended by the specialist archaeologist, representatives of WCPL and representatives of the MLALC, WBNTCAC and MGATSIC. Representatives of the Aboriginal groups accompanied specialist archaeologists and provided cultural heritage assessments during three stages of field survey conducted in August 2004 and January 2005 as part of the Aboriginal Cultural Heritage Assessment presented in Appendix F.

A site visit for Elders and Aboriginal community members was facilitated by WCPL on 14 and 15 January 2005. The visit included discussion of the nature of the Project, a tour of sites of interest to the Aboriginal participants and discussion of cultural values and proposed cultural heritage management measures.

Table 1-3
Summary of Relevant Issues Raised by the Public during Consultation

Relevant Issues Raised	Section of EIS where Addressed
Description of the Project, including timing of commencement.	Sections 1.2.1 and 2
Design of the Cumbo Creek relocation (including groundwater/salinity aspects).	Sections 2.9, 4.3 and 5.1.2.6
Project water requirements and on-site water management.	Sections 2.9, 4.3, 4.4, 5.1.2.4, 5.1.2.5 and 5.1.2.6
Description of the Project assessment process.	Section 1.3
Economic benefits and employment/contracting opportunities.	Sections 2.12, 4.14 and 4.15
Review process for the Project monitoring programme.	Section 5.1
Modification process for the Project following consent.	If required – would follow EP&A Act requirements
Contributions from the Project to local community infrastructure in Wollar.	Section 1.3.5
Fate of Landcare regeneration areas.	Section 1.5.1
Project potential environmental impacts and management:	
• Groundwater issues (e.g. salinity, monitoring programme, drawdown and potential for contamination by tailings).	Sections 4.4, 5.1.2.5 and 5.1.3.7
• Surface water issues (e.g. potential impact on Wilpinjong Creek).	Sections 4.3, 4.4, 5.1.2.4 and 5.1.3.6
• Blasting (e.g. timing, frequency).	Sections 2.4.5, 4.5.6 and 5.1.3.4
• Flora/fauna (e.g. potential impact on threatened species).	Sections 4.7 to 4.9, 5.1.2.7, 5.2 to 5.4
• Noise (operational and train noise).	Sections 4.5 and 5.1.3.3
• Greenhouse gas emissions.	Section 4.6.4
• Dust (health risks).	Sections 4.6 and 5.1.3.2
• Increased train movements and associated risk to vehicles and people.	Sections 4.13 and 4.16
• Land management at the Project site (during and post-mining).	Sections 4.1 and 5
• Road upgrades required, including the need for lighting at the access road intersection with Wollar Road.	Sections 2.3.2, 4.2, 4.12 and 5.1.2.9
• Ulan-Wollar Road relocation.	Sections 2.3.9 and 5.1.2.9
• Groundwater bore drawdown monitoring programme and mitigation measures for bores potentially impacted by the Project.	Sections 4.4, 5.1.2.5 and 5.1.3.7
• Mine dewatering and use of water from dewatering.	Sections 2.9, 4.4 and 5.1.2.4

Reports were provided to the Aboriginal groups after each stage of site survey and the January 2005 report included the findings of the surveys and proposed Project cultural heritage management measures for discussion and review by the Aboriginal community.

WCPL representatives also attended two further public meetings advertised/called by the MLALC on 9 and 28 February 2005 to discuss the Project and proposed cultural heritage management measures.

Relevant issues arising during the Aboriginal cultural heritage assessment and associated consultation included:

- discussion on various survey methods and strategies;
- Aboriginal cultural heritage values;
- heritage management measures;
- the role of Aboriginal people according to their relationship to the Project area;
- description of the Project mining and rehabilitation process;
- survey of areas outside of the immediate Project disturbance area;
- Aboriginal representation on the Project CCC;
- provision of an Aboriginal cultural heritage management committee;
- development of and participation in the implementation of a Project Aboriginal Cultural Heritage Management Plan (ACHMP);

- conservation outcomes with respect to Aboriginal cultural heritage; and
- opportunities for the employment of Aboriginal people.

Where practicable, relevant issues raised by Aboriginal stakeholders were addressed in the Aboriginal Cultural Heritage Assessment (Appendix F). Relevant issues raised were also incorporated into the management measures described in Appendix F and Section 4.10 and were considered in the siting and design of the Project, to minimise impacts on Aboriginal cultural heritage where practicable.

Further detail on the Aboriginal community consultation programme conducted for the EIS is provided in Section 3.9 and Appendix F.

1.5.3 Government Agencies

State and Local Government

Consultation with relevant NSW Government agencies commenced in early 2004.

On 23 March 2004, WCPL made a Conceptual Mine Development Plan presentation to the DPI-MR that outlined the development plan and sought the department's support for the Project. The presentation included the following components:

- resource assessment (including a JORC Statement);
- mining constraints and plans;
- coal handling and preparation;
- raw coal versus washed coal plans;
- key planning and environmental issues; and
- a development programme.

In a letter to DIPNR dated 26 March 2004, the DPI-MR advised DIPNR they had approved the Conceptual Mine Development Plan following the presentation.

A Planning Focus Document was prepared by WCPL and a Planning Focus Meeting was held on 20 April 2004. The meeting was attended by representatives of the following agencies:

- DIPNR;
- DEC;
- DPI-MR;
- DPI-Fisheries;
- RTA; and
- MWRC.

The objective of the Planning Focus Meeting was to familiarise government stakeholders with the development proposal and to identify key issues that should be addressed in the EIS. From this consultation, DIPNR developed the DGRs for the EIS, and the Integrated/Other Authorities developed their EIS requirements and provided them to DIPNR (Attachment 1).

A summary of the requirements of the Director-General of DIPNR is provided in Table 1-4. Table 1-4 also provides an indication of where each DGR is addressed in the main text of the EIS. As described in Section 1.4, additional key requirements of Integrated/Other Authorities are provided in Section 6.

Issue-focussed meetings were conducted with DIPNR and other regulatory agencies throughout the EIS preparation period. These included formal and informal progress meetings with input from regulatory agencies during the assessment process.

Federal Government

The Project will be referred to the Commonwealth Minister for Environment and Heritage for an assessment of whether or not it includes a controlled action under the EPBC Act.

1.5.4 Identification and Prioritisation of Issues

The scoping of potential environmental impacts, the Planning Focus Meeting, issue of the DGRs and associated EIS requirements of Integrated/Other Authorities and meetings with members of the public has resulted in the identification of five key issues that are of particular interest to regulators and the public. These are:

- surface water;
- groundwater and environmental geochemistry;
- noise and blasting;
- air quality; and
- flora/fauna, rehabilitation and long-term conservation outcomes associated with the Project.

The above key issues have been addressed on a priority basis in Section 4 and in various specialist appendices.

Table 1-4
Director-General's EIS Requirements – Reference Summary

Specific Issues to be Addressed	Main Text Reference
Under clause 73(1) of the *Environmental Planning and Assessment Regulation, 2000*, the Director-General requires the following specific issues to be addressed in the EIS:	
Description of the Proposal Describe and justify the proposal, clearly identifying the resource, the proposed site, the proposed works (including any rehabilitation works), and the proposed intensity and duration of mining operations.	Sections 1, 2 and 5
Permissibility Demonstrate that the proposal is permissible with consent.	Section 1.3.1
Statutory Instruments/Policies Assess the proposal against the relevant provisions in: • *State Environmental Planning Policy No. 11 – Traffic Generating Developments*; • *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development*; • *State Environmental Planning Policy No. 44 – Koala Habitat Protection*; • *State Environmental Planning Policy No. 55 – Remediation of Land*; • *Mudgee Local Environmental Plan 1998*; and • any relevant development control plan or Section 94 contribution plan.	Section 1.3
Key Issues Assess the following potential impacts of the proposal, and describe what measures would be implemented to avoid, mitigate, off-set and/or manage these potential impacts:	
(a) surface water and groundwater;	Sections 4.3, 4.4, 5.1.2.4, 5.1.2.5, 5.1.2.6, 5.1.3.6 and 5.1.3.7
(a) noise;	Sections 4.5 and 5.1.3.3
(b) blasting and vibration;	Sections 4.5 and 5.1.3.4
(c) air quality (including odour);	Sections 4.6 and 5.1.3.2
(d) heritage, both Aboriginal and non-Aboriginal;	Sections 4.10, 4.11 and 5.1.2.10
(e) fauna and flora, particularly on critical habitats, threatened species, populations, or ecological communities (including potential off-sets);	Sections 4.7 to 4.9, and 5
(f) soil;	Sections 4.1 and 5
(g) traffic, transport, utilities and services;	Sections 2.10, 4.12, 4.13, 5.1.2.9 and 5.1.3.10
(h) hazards;	Section 4.16
(i) visual;	Section 4.2
(j) waste management;	Sections 2.8 and 2.11
(k) social; and	Sections 1.5 and 4.14
(l) economic (including detailed benefit-cost analysis).	Section 4.15
Environmental Monitoring and Management Plans Describe in detail how the environmental performance of the proposal would be monitored and managed over time.	Sections 4 and 5
Water Resources During the preparation of the EIS, pay particular attention to the potential surface water, groundwater and water supply impacts of the proposal, both locally and regionally, and to consider the proposal's consistency and compliance with relevant water management legislation and policies.	Sections 4.3, 4.4, and 4.7 to 4.9
Flora and Fauna/Vegetation Clearing The flora and fauna assessment in the EIS should explicitly consider the potential impacts of the proposal on the adjoining National Parks and Nature Reserves.	Sections 4.7 to 4.9

Table 1-4 (Continued)
Director-General's EIS Requirements – Reference Summary

Specific Issues to be Addressed	Main Text Reference
Under clause 73(1) of the *Environmental Planning and Assessment Regulation, 2000*, the Director-General requires the following specific issues to be addressed in the EIS (Continued):	
EIS Guidelines During preparation of the EIS, consider the Department's EIS guideline on *Coal Mines and Associated Infrastructure*.	Section 1.4
Integrated Authorities The agencies that administer integrated approvals should be consulted and their requirements addressed in the EIS.	Attachment 1 and Section 6
Consultation During the preparation of the EIS, relevant local, State and Commonwealth government authorities, service providers and community groups in the area should be consulted and address any issues they may raise in the EIS. In particular, consult the surrounding landowners and occupiers that are likely to be affected by the proposal. The EIS must include a report indicating who was consulted, what consultation occurred and what issues were raised during this consultation.	Section 1.5 Table 1-3 and Section 1.5
Pursuant to Schedule 2 and Clause 72 of the *Environmental Planning and Assessment Regulation, 2000*, an EIS must include:	
1. A summary of the EIS.	Executive Summary
2. A statement of the objectives of the development or activity.	Section 1.2.1
3. An analysis of any feasible alternatives to the carrying out of the development or activity, having regard to its objectives, including the consequences of not carrying out the development or activity.	Sections 1.7 and 1.8
4. An analysis of the development or activity including:	
(a) a full description of the development or activity;	Section 2
(b) a general description of the environment likely to be affected by the development or activity, together with a detailed description of those aspects of the environment that are likely to be significantly affected;	Section 3
(c) the likely impact on the environment of the development or activity;	Section 4
(d) a full description of the measures proposed to mitigate any adverse effects of the development or activity on the environment; and	Section 4
(e) a list of any approvals that must be obtained under any Act or law before the development or activity may be lawfully carried out.	Section 1.3
5. A compilation (in a single section of the EIS) of the measures referred to in item 4(d).	Section 4
6. The reasons justifying the carrying out of the development or activity in the manner proposed, having regard to biophysical, economic and social considerations, including the following principles of ecologically sustainable development: (a) The precautionary principle. (b) Inter-generational equity. (c) Conservation of biological diversity and ecological integrity. (d) Improved valuation, pricing and incentive mechanisms.	Section 1.6

Source: DIPNR (2004a)

1.6 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

1.6.1 Background

The concept of sustainable development came to prominence at the World Commission on Environment and Development 1987, in the report entitled *Our Common Future*, which defined sustainable development as:

> *Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*

In recognition of the importance of sustainable development the Commonwealth Government (Commonwealth of Australia, 1992) developed a National Strategy for Ecologically Sustainable Development (NSESD) that defines ecologically sustainable development (ESD) as:

> *using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.*

The NSESD was developed with the following core objectives:

- enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- provide for equity within and between generations; and
- protect biological diversity and maintain essential processes and life support systems.

In accordance with these core objectives the NSESD challenges the mining industry in Australia (Commonwealth of Australia, 1992):

> *to further develop the mining industry in a way which manages the renewable and non-renewable resources on which it depends in an efficient manner which is also consistent with the principles of ESD.*

Australia's commitment to the principles of ESD is further enshrined in the EPBC Act, which defines ecologically sustainable use of natural resources as:

> *use of natural resources within their capacity to sustain natural processes while maintaining the life-support systems of nature and ensuring that the benefit of the use to the present generation does not diminish the potential to meet the needs and aspirations of future generations.*

This definition is supported at the State (NSW) level by the EP&A Regulations, which require an EIS to justify a proposed development:

> *having regard to biophysical, economic and social considerations, including the following principles of ecologically sustainable development:*
>
> *(a) the precautionary principle, namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*
>
> *(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
>
> *(ii) an assessment of the risk-weighted consequences of various options,*
>
> *(b) inter-generational equity, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,*
>
> *(c) conservation of biological diversity and ecological integrity, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*

(d) *improved valuation, pricing and incentive mechanisms, namely, that environmental factors should be included in the valuation of assets and services, such as:*

(i) *polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*

(ii) *the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,*

(iii) *environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

1.6.2 ESD Assessment

Project design, planning and assessment have been carried out in due recognition of the principles of ESD, through:

- incorporation of risk assessment within decision-making processes;
- adoption of high standards for environmental and occupational health and safety performance;
- consultation with regulatory and community stakeholders; and
- optimisation of the economic benefits to the community arising from the development of the Project.

Assessment of potential long-term impacts of the Project was carried out during the preparation of this EIS on aspects of water management (surface water and groundwater), waste management, air quality emissions (including greenhouse emissions), noise and blasting emissions, ecology (flora and fauna), cultural heritage, landscape assessment (including visual modification), economics, community infrastructure and rehabilitation.

The Project design takes into account biophysical, economic and social considerations, including the principles of ESD identified in the EP&A Regulations. The following section describes the consideration and application of the four main principles of ESD to the Project.

Precautionary Principle

Consideration of the precautionary principle in the design, planning and assessment of the Project is evident in the identification of risks and the range of mitigation measures presented throughout this EIS. A PHA (Appendix L) was conducted to identify risks and develop appropriate mitigation measures and strategies. The PHA focuses on short-term, sudden and unexpected events, while longer-term expected risks are considered by the specialist studies conducted in support of this EIS (Section 1.4). The findings of these specialist assessments are presented in Section 4 and relevant appendices. Measures designed to mitigate potential environmental impacts arising from the conduct of the Project are also presented in Section 4.

A number of measures have been adopted to minimise the potential for serious and/or irreversible damage to the environment, including:

- mine design and planning such that the Goulburn River National Park and Munghorn Gap Nature Reserve would not be directly impacted with Project mining activities managed to minimise indirect effects on these areas;
- the development of the Project EPP (Section 5) which incorporates environmental management and monitoring, rehabilitation areas, regeneration areas and enhancement and conservation initiatives;

- the proposed creation of designated ECAs that provide for:
  - enhancement and conservation of remnant vegetation and establishment of woodland vegetation in grazing land (to improve flora and fauna habitat);
  - improved connectivity between existing remnants (including Goulburn River National Park and Munghorn Gap Nature Reserve) as well as connection with the rehabilitation areas and regeneration areas; and
  - conservation of Aboriginal cultural heritage.
- relocation of Cumbo Creek in a manner that incorporates improvement of riparian vegetation and condition of aquatic habitat in the relocation corridor over the current conditions, including upstream of the relocated section;
- alteration of the mine plan to avoid mining a minor ridgeline that is located in close proximity to a rock shelter with Aboriginal art; and
- management/minimisation of greenhouse gas emissions associated with the Project operation via:
  - regular maintenance of plant and equipment to minimise fuel consumption and associated emissions;
  - consideration of energy efficiency in plant and equipment selection/purchase; and
  - a net increase of some 1,095 ha of woodland vegetation over the Project life in comparison to the 290 ha of woodland to be cleared for the Project.

Social Equity

Social equity is defined by inter and intra-generational equity. Inter-generational equity is the concept that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations, while intra-generational equity is applied within the same generation.

The principles of social equity are addressed through:

- Development of the EPP (Section 5) which provides for:
  - Environmental Management and Monitoring – comprising environmental management plans and monitoring programmes covering the Project life (i.e. construction, operation and closure) (Section 5.1).
  - Rehabilitation Areas – rehabilitation and revegetation of areas disturbed by the Project undertaken progressively as mining proceeds and the formation of a final (mine waste rock emplacement) landform behind the advancing face of the open cut (Section 5.2). The Project revegetation programme provides for a combination of woodland and pasture outcomes.
  - Regeneration Areas – to be established on areas of WCPL-owned land proximal to Project disturbance areas/ rehabilitation areas. Woodland vegetation would be established in the regeneration areas which currently comprise predominantly cleared agricultural land.
  - ECAs – to be established on areas of land (containing remnant vegetation and proximal grazing land as well as known and potential Aboriginal archaeological sites) owned by WCPL (Section 5.3). As described in Section 5.3.3, enhancement is to be achieved by the implementation of appropriate enhancement measures and conservation is to be achieved by applying to rezone the land for the purpose of conservation.
- Management measures to be implemented in relation to the potential impacts of the Project on land resources, water resources, visual amenity, noise and blasting, air quality, flora and fauna, Aboriginal and non-Aboriginal heritage, transport, hazard and risks, economics and community infrastructure.
- Management of greenhouse gas emissions as described above.

- Direct employment of an average of 200 people during the construction phase and an average of 100 people during the operational phase and net production benefits in the order of $1,454 million (M) (Appendix I).

Biological Diversity and Ecological Integrity

Biodiversity is considered to be the variability among living organisms from all sources (including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part) and includes diversity within species and between species as well as diversity of ecosystems.

The Project addresses the principles of ecological integrity and biodiversity by proposing an environmental management framework designed to conserve, wherever possible, ecological values and integrity. This is to be supported through measures including:

- design of infrastructure to minimise impacts on the existing environment where practicable;
- incorporation of environmental management and monitoring, progressive rehabilitation, regeneration, and ECAs in the EPP (Section 5) as described above;
- compliance with statutory conditions and guidelines (Section 1.3);
- commitment to an on-going programme of environmental protection monitoring and reporting (Section 5);
- a significant net gain in woodland at the completion of the Project and the linkage of the Munghorn Gap Nature Reserve and Goulburn River National Park through development of habitat corridors (Sections 5.2 to 5.4); and
- establishment of woodland vegetation and the conservation and enhancement of existing natural resources (to improve associated flora and fauna habitats) (Section 5).

Valuation

Historically, environmental costs have been considered external to project development costs. Improved valuation and pricing methods attempt to internalise environmental costs and include them within project costing.

The Economic Assessment presented in Appendix I discusses potential environmental impacts from an economic perspective. Environmental costs associated with Project greenhouse gas emissions were valued and incorporated within the final calculation of the net production benefit to Australia, which was estimated at $1,454M (Appendix I).

Other environmental costs that are not readily quantifiable are considered predominantly through the pricing of measures that would be adopted to mitigate environmental impacts (Sections 4 and 5) and inclusion of these within Project costing.

1.7 PROJECT ALTERNATIVES

The Project location is determined by the coal resource that the NSW Government has tendered to WCPL and is not considered further in this section.

1.7.1 Coal Resource Recovery and Production Rate

The scale of a mining project is determined by the optimum recovery of the resource and production rate that ensures profitability and on-going viability whilst enabling compliance with statutory conditions and guidelines.

WCPL has undertaken an analysis of a number of different schedules of raw coal production and washed coal production. The schedules included variations to the mining sequence and direction, number of open pits, mining methods, loss/dilution assumptions and selective mining of certain plies and partings within the Ulan Seam.

The proposed mine schedule (Section 2.4.1) contains a combination of raw coal and washed coal production over the life of the Project, carried out in a sequence and manner that can permit compliance with statutory conditions and guidelines.

Consideration of the cost of Project development, associated infrastructure and on-going expenses, such as coal transportation costs, resulted in the selection of a schedule of approximately 251 Mt of ROM coal over the 21 year life of the Project, with the mine operating 24 hours per day, seven days per week.

1.7.2 Mining Method

Coal reserves are typically mined in one of two ways:

- underground methods (whereby the coal is accessed via a small surface opening leading to sub-surface excavations which expose the coal); or
- open cut methods (whereby mining occurs from the surface downwards to progressively expose the coal).

The Project would utilise open cut mining methods to recover the coal, as the Ulan Seam which is to be mined at Wilpinjong is shallow and subcrops in the Project area. Large scale underground mining methods were not considered to be economically or technically viable, given the shallow nature of the coal seam, the working thicknesses of the coal plies and the low overburden strip ratios which average 1.3:1 (bank cubic metres [bcm] waste rock:t ROM coal).

WCPL examined a range of open cut mining methods that could be employed including:

- dragline mining;
- truck/shovel;
- throw blast/dozer push; and
- BOSMIN overburden slusher mining technology (comprising winches pulling a hoe to strip waste rock material).

The throw blast/dozer push mining method would be employed for the Project (Section 2.4). This mining method provides for operational and planning flexibility. Highwall mining from the open cut would also be used to maximise resource recovery (Section 2.4.7).

1.7.3 Mine Access Road

Two options were considered for the location of the mine access road including:

- a northern access road from the Ulan-Wollar Road; or
- a southern access road from Wollar Road via parts of the existing Wilpinjong Road.

The southern access road was selected because:

- the majority of the workforce and services are expected to be located in Mudgee, the major population centre located some 40 km south-west of the Project;
- Wollar Road is fully sealed and in better condition than the Ulan-Wollar Road, and so would provide a better route to the site from Mudgee;
- traffic coming to and from the site would be separated from the mining operations and rail line; and
- unlike the northern access road option, there would be no potential requirement for an additional level crossing on the Gulgong-Sandy Hollow railway.

A temporary access from the Project to Ulan-Wollar Road would be established for access to and from the Project mine facilities area and construction camp during construction of the Project (Section 2.3.1). This would avoid the need for the construction camp workers to travel to the site via the village of Wollar during construction activities.

1.7.4 Transport of Product Coal

Alternatives considered for the transportation of product coal included:

- road haulage of product coal to the nearest coal loader (e.g. Ulan Coal Mines) for transportation to market at a rate of up to approximately 10 Mtpa; or
- construction of a rail spur and rail loop and coal handling and train loading infrastructure to enable the transportation of product coal by rail directly from the Project to market (i.e. requiring no public road haulage of product coal).

Public road haulage of product coal at rates of up to 10 Mtpa would require a substantial number of truck movements on the public road network. The selection of the rail option follows consideration of a range of economic, social and environmental factors (e.g. potential impacts of haulage of coal on the public road network). The rail spur and rail loop has been centrally located to minimise on-site haulage and sterilisation of the coal resource and has advantages in containing potential noise and dust impacts of coal stockpiling and rail loading activities in the central Project area.

1.7.5 Waste Rock Management

Mined material that does not contain economic coal is termed waste rock. Waste rock is conventionally disposed of in open cut voids and/or out-of-pit mine waste rock emplacements and progressively rehabilitated. Options considered for disposal of Project mine waste rock included:

- disposal of mine waste rock to adjacent open cut voids and permanent out-of-pit mine waste rock emplacements; or
- disposal of mine waste rock to adjacent open cut voids and some limited storage of mine waste rock material in temporary out-of-pit mine waste rock emplacements followed by rehandling of mine waste rock to backfill the open cut.

The second option was selected for the Project. It permits more progressive rehabilitation and revegetation of mine landforms, reduction of potential visual impacts during the mine life and the progressive covering of tailings disposal areas. No permanent out-of-pit mine waste rock emplacements are proposed however mine waste rock would be used for the construction of safety bunds and other contained infrastructure (e.g. ROM pad, rail/road embankments, water diversion/containment bunds).

1.7.6 Coarse Reject and Tailings Management

Mine waste rock materials generated by the washing of ROM coal in the CHPP consist of coarse rejects and tailings. Coarse rejects are hauled from the CHPP to the open cut for backfilling and are progressively covered with mine waste rock which is then rehabilitated as part of on-going mining operations.

Conventionally, tailings are produced from the CHPP as slurry and are placed in a wet storage containment to recycle the water.

Alternatives considered for the disposal of tailings included:

- disposal within an out-of-pit purpose-built tailings emplacement;
- disposal within open cut voids;
- co-disposal with coarse rejects; or
- any of the above three methods with mechanical dewatering of tailings (e.g. belt press filters or centrifuges) prior to disposal.

Co-disposal and mechanical dewatering options were not adopted, after evaluating current capital and operating costs and the likely effectiveness of these methods.

Mine scheduling indicates that the open cut operation would not have advanced sufficiently during the initial stages of the development to create a void for the disposal of tailings. Initially, tailings would be placed in a partitioned section of the CHPP water supply storage (Section 2.8.3). Subsequently, tailings would be progressively disposed in open cut voids.

A series of cells would be constructed in the open cut voids to establish a water collection sump which would move as required to maximise recycling of water. Further details are provided in Section 2.8.3.

1.7.7 Water Supply

Mining operations at Wilpinjong would intersect aquifers associated with the Ulan Seam. As such, a considerable but variable proportion of the Project water supply will be obtained directly as part of open cut mining operations. Three supplementary water supply options were considered for the Project, *viz.*:

- a water supply dam on Wilpinjong Creek;
- extracting additional groundwater from the Ulan Seam and underlying Marrangaroo Sandstone by means of a borefield; or
- accessing mine water from the Ulan Coal Mines.

The option to install a water supply dam on Wilpinjong Creek was examined; however, it was excluded as there is currently an embargo on the issue of new entitlements for dams for commercial purposes under Part 2 of the *Water Act, 1912* in the Hunter River catchment.

Discussions were held with Ulan Coal Mines regarding the option to access mine water. This would have provided an opportunity to utilise waste water from the Ulan Coal Mines and avoid the potential impacts associated with the provision of the Project supplementary water supply. Ulan Coal Mines have indicated that they are currently unable to commit to the supply of excess mine water for the life of the Project due to possible future use of this water within future Ulan Coal Mines operations. Notwithstanding, WCPL propose to continue to consult with the Ulan Coal Mines during the life of the Project on water supply issues.

As described in Appendix B, a groundwater investigation and modelling programme was undertaken to investigate the nature and extent of local groundwater aquifers and the potential of these aquifers to supply supplementary Project water requirements. The extraction of groundwater from the Ulan Seam and Marrangaroo Sandstone was selected as groundwater investigations indicated that these aquifers had suitable capacity to supplement the Project during periods when groundwater recovered as part of open cut mining operations is insufficient to match Project demand.

1.7.8 Final Voids

Final voids are generally left at the conclusion of open cut mining and the size and nature of these voids are dictated by the depth of the open cut, the extent of backfilling of the voids that is undertaken and the post-mining groundwater table. Where the post-mining groundwater table is higher than the bottom of the final void, a void waterbody occurs.

Two main options were considered with respect to the final voids at the Project, these were:

- to fill the final open pits to above the post-mining groundwater table, so that no water filled voids would occur at the end of mining; or
- to create final pit voids that would act as evaporative storages in the long-term.

Two final voids would be left at the completion of mining (Section 2.4.9). These voids would both extend below the post-mining groundwater table and would act as localised sinks for groundwater. Post-mining, water levels in the voids would slowly increase until they reach an equilibrium level and the voids would increase in salinity as they accumulate salt from saline inflows and evapo-concentration effects.

1.7.9 Cumbo Creek Relocation

Cumbo Creek has been highly modified by vegetation clearance and grazing activities, as well as by nutrient and sediment runoff. The banks of the creek have suffered erosion and grazing by cattle and invasion by weeds.

Three options were considered for the portion of Cumbo Creek that is within the Project disturbance area, *viz.*:

- preservation of the existing creek corridor and sterilisation of the significant coal resource beneath the corridor;
- straightening of the creek (to reduce the amount of coal sterilisation); and
- relocation of the creek within an adjacent corridor which has been previously mined (no sterilisation of coal resource required).

The first and second options would result in the sterilisation of approximately 13 Mt and 6 Mt of coal, respectively. Restricting mining in the Cumbo Creek corridor would therefore reduce the life of the Project by approximately 1.5 to 0.75 years for the first and second options, respectively. Associated state royalties and taxes and economic benefits would also be forgone.

The relocation of the creek within an adjacent corridor was therefore selected for the Project. The relocation works are described in Section 2.9.1. The potential environmental impacts associated with the relocation would be minimised through the detailed geotechnical, hydrological and hydraulic design that would be implemented prior to construction. The Cumbo Creek relocation corridor and bunds would be revegetated with native riparian vegetation.

The revegetation, livestock access management and weed control in the relocation corridor and upstream of the relocation corridor (in ECA-A – Figure 1-4) should lead to an improvement in the habitat value of Cumbo Creek over time. A Cumbo Creek Relocation Plan (CCRP) would be developed for the Project in consultation with relevant authorities (Section 5.1.2.6).

1.7.10 Clearing of Remnant Vegetation in Pit 3

Approximately 150 ha of remnant vegetation occurs within Pit 3 (Figure 1-4), comprising the largest intact remnant to be disturbed by the Project. The flora and fauna values of the remnant in Pit 3 are described in Sections 3.6 and 3.7 and Appendices HA to HE.

Alternatives considered in relation to the mining of coal reserves beneath this remnant included use of an alternative mining method for this area (i.e. underground mining) or sterilising the coal in this area by restricting the mining operation to avoid the remnant.

Section 1.7.2 provides a discussion of alternative mining methods. As the coal reserves are shallow, underground mining methods are not considered to be technically or economically feasible for the area under the remnant vegetation in Pit 3 (excluding limited highwall mining which may be utilised to maximise resource recovery). Because of the shallow nature of the coal in Pit 3, it is highly amenable to efficient mining using open cut methods with minimal overburden removal. The Pit 3 area contains some of the lowest cost to mine (i.e. highest potential value) coal contained within the Project area.

An assessment of the consequences of restricting the mining operations in Pit 3 has been conducted. The potential impacts on the Project would include:

- loss of some 18 Mt of ROM coal;
- loss of blending capability associated with the loss of low cost to mine coal;
- significant alteration of the mine plan to adjust for the loss of coal and associated blending capability;
- significant reduction in the state taxes and royalties generated by the Project; and
- a minimum two year reduction in the mine life and associated direct employment opportunities, flow-on employment generation and expenditure in the region. This reduction is potentially greater should the loss of blending capability lead to other reserves becoming uneconomical to mine.

Considering the economic significance of the coal reserves in this area, the potential loss of the remnant vegetation in Pit 3 has been the subject of considerable attention during the EIS assessment process, with WCPL looking to find a balanced outcome. The issue has been discussed with the DEC and DIPNR and potential mitigation measures and alternative conservation outcomes have been considered. As a result of this analysis, a series of management and mitigation measures have been developed, including a series of initiatives outlined in Section 5.

1.7.11 Energy Source

The estimated maximum power supply requirement for the Project when the CHPP is fully operational is 9 mega volt amps (MVA). Alternatives considered to supply this capacity are being assessed under a separate approval process (Part 5 of the EP&A Act).

1.7.12 Enhancement and Conservation Areas

The ECAs are to be developed on areas of land (containing remnant vegetation and proximal grazing land as well as known and potential Aboriginal archaeological sites) owned by WCPL (Figure 1-4 and Section 5.4).

A number of alternative areas were considered for inclusion in the ECAs.

An Aboriginal cultural heritage survey conducted within the ECAs has demonstrated that ECA-B and ECA-C contain Aboriginal archaeological sites of conservation value. In addition, ECA-A includes a significant area of the Cumbo Creek riparian corridor that is expected to have archaeological potential for *in-situ* deposits (Appendix F). The local Aboriginal community believe these areas provide a valuable opportunity to conserve a sample of sites from the Project area (Appendix F).

The main flora and fauna attributes of the ECAs that contributed to their adoption for the Project include provision of:

- a mixture of existing vegetation remnants and cleared land available for natural regeneration and selective revegetation;
- existing remnants of the White Box, Yellow Box, Blakely's Red Gum Woodland Endangered Ecological Community (EEC) and the Grassy White Box Woodlands EEC and cleared land which provide opportunities for the establishment of the community (Section 5.4);
- opportunity for selective planting of riparian vegetation along Wilpinjong and Cumbo Creeks;
- known and potential habitat for threatened fauna species (e.g. Regent Honeyeater); and
- similar landforms to those represented within the Project disturbance area.

In addition, two of the three ECAs are located on the margins of Goulburn River National Park or Munghorn Gap Nature Reserve (Figure 1-4).

1.8 CONSEQUENCES OF NOT PROCEEDING WITH THE PROJECT

In accordance with the DGRs, an assessment of the consequences of not proceeding with the Project has been conducted. Were the Project not to proceed, the following consequences are inferred:

- long-term low cost supply of fuel to Macquarie Generation's Bayswater and Liddell power stations to generate electricity for NSW users would be compromised;
- a peak of up to 250 direct construction and up to 162 direct operational phase employment opportunities and associated flow-on effects, would not be created (Section 2.12 and Appendix I);
- net production benefits of $1,454M (including export income) would not occur (Section 4.15 and Appendix I);
- tax revenue from the Project would not be generated (Appendix I);
- royalties to the State of NSW would not be generated (Appendix I); and
- the Project ECAs and other vegetation regeneration areas (e.g. along Cumbo and Wilpinjong Creeks) would not be created.

1.9 PROJECT CONSULTANTS

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

- Gilbert and Associates (Surface Water Assessment);
- Australasian Groundwater and Environmental Consultants (Groundwater Impact Assessment and Land Contamination Assessment);
- Dr Noel Merrick (technical review - Groundwater Impact Assessment);
- Environmental Geochemistry International (Assessment of the Acid Forming Potential and Salinity of Overburden, Coal and Coal Washery Waste);
- Richard Heggie Associates (Construction, Operation and Transportation Noise and Blasting Impact Assessment);
- Holmes Air Sciences (Air Quality Impact Assessment);
- Navin Officer Heritage Consultants (Aboriginal Cultural Heritage Assessment);
- Heritage Management Consultants (Non-Aboriginal Heritage Impact Assessment);
- FloraSearch (Flora Assessment);
- Mount King Ecological Services (Terrestrial Fauna Assessment);
- Greg Richards and Associates (Bat Fauna Assessment);
- BIO-ANALYSIS: Marine, Estuarine and Freshwater Ecology (Aquatic Ecosystem Assessment);
- Gillespie Economics (Economic Assessment);
- Martin and Associates (Community Infrastructure Assessment);
- TRAFFIX (Road Transport Assessment);
- JAMMEL Environmental and Planning Services (soil survey and mapping); and
- EDAW Gillespies Australia (Visual Impact Assessment).