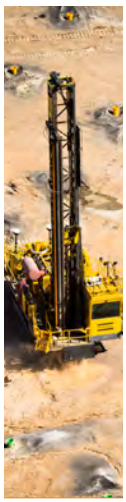

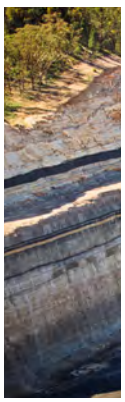



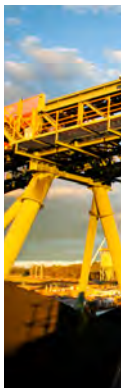

MOOLARBENCOAL

Moolarben Coal Complex
UG4 Ancillary Works Modification

Modification Report

MODIFICATION REPORT

YANCOAL
兖煤澳大利亚有限公司

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Appendix B	Biodiversity Development Assessment Report
Appendix C	Flooding Review
Appendix D	Surface Water Review
Appendix E	Noise Review
Appendix F	Air Quality Review
Appendix G	Road Transport Review
Appendix H	Groundwater Review

1 INTRODUCTION

The Moolarben Coal Complex is located approximately 40 kilometres (km) north of Mudgee in the Western Coalfields of New South Wales (NSW) (Figure 1).

Moolarben Coal Operations Pty Ltd (MCO) is the operator of the Moolarben Coal Complex on behalf of the Moolarben Joint Venture (Moolarben Coal Mines Pty Ltd [MCM], Sojitz Moolarben Resources Pty Ltd and a consortium of Korean power companies). MCO and MCM are wholly owned subsidiaries of Yancoal Australia Limited (Yancoal).

The Moolarben Coal Complex comprises four approved open cut mining areas (OC1 to OC4), three approved underground mining areas (UG1, UG2 and UG4) and other mining related infrastructure (including coal processing and transport facilities) (Figure 2).

Mining operations at the Moolarben Coal Complex are currently approved until 31 December 2038 in accordance with Project Approval (05_0117) (Moolarben Coal Project Stage 1) (as modified) and Project Approval (08_0135) (Moolarben Coal Project Stage 2) (as modified).

Since the commencement of coal mining operations in 2010, mining activities have occurred within OC1, OC2, OC4 and UG1 (Figure 2).

This Modification Report is a Statement of Environmental Effects to support a request to modify the Stage 1 Project Approval (05_0117) under section 4.55(2) of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act) (the UG4 Ancillary Works Modification [the Modification]).

The Modification involves development of ancillary infrastructure to support the safe and efficient operation of the approved UG4 underground mining area. This includes the construction and operation of a new downcast ventilation shaft and compound, a remote services infrastructure area, and augmentations to the approved dewatering borefield and associated access and infrastructure corridors (Figure 3).

The Modification would not change the approved mining operations at UG4 (e.g. layout, method, mine life, production rate or workforce).

1.1 BACKGROUND

1.1.1 Moolarben Coal Complex History

The Moolarben Coal Project Stage 1 was approved by the NSW Minister for Planning on 6 September 2007 (Project Approval [05_0117]).

Stage 1 of the Moolarben Coal Complex comprises open cut operations in OC1, OC2 and OC3, underground mining operations in UG4 and the handling, processing and rail transport of coal from both Stage 1 and Stage 2.

The Moolarben Coal Project Stage 2 was approved by the Planning Assessment Commission (as delegate of the NSW Minister for Planning) on 30 January 2015 (Project Approval [08_0135]).

Stage 2 of the Moolarben Coal Complex comprises open cut operations in OC4 and underground operations in UG1 and UG2. All ROM coal produced by the Stage 2 operations is transported to the Stage 1 coal handling and processing facilities.

1.2 SITE LOCATION AND TENURE

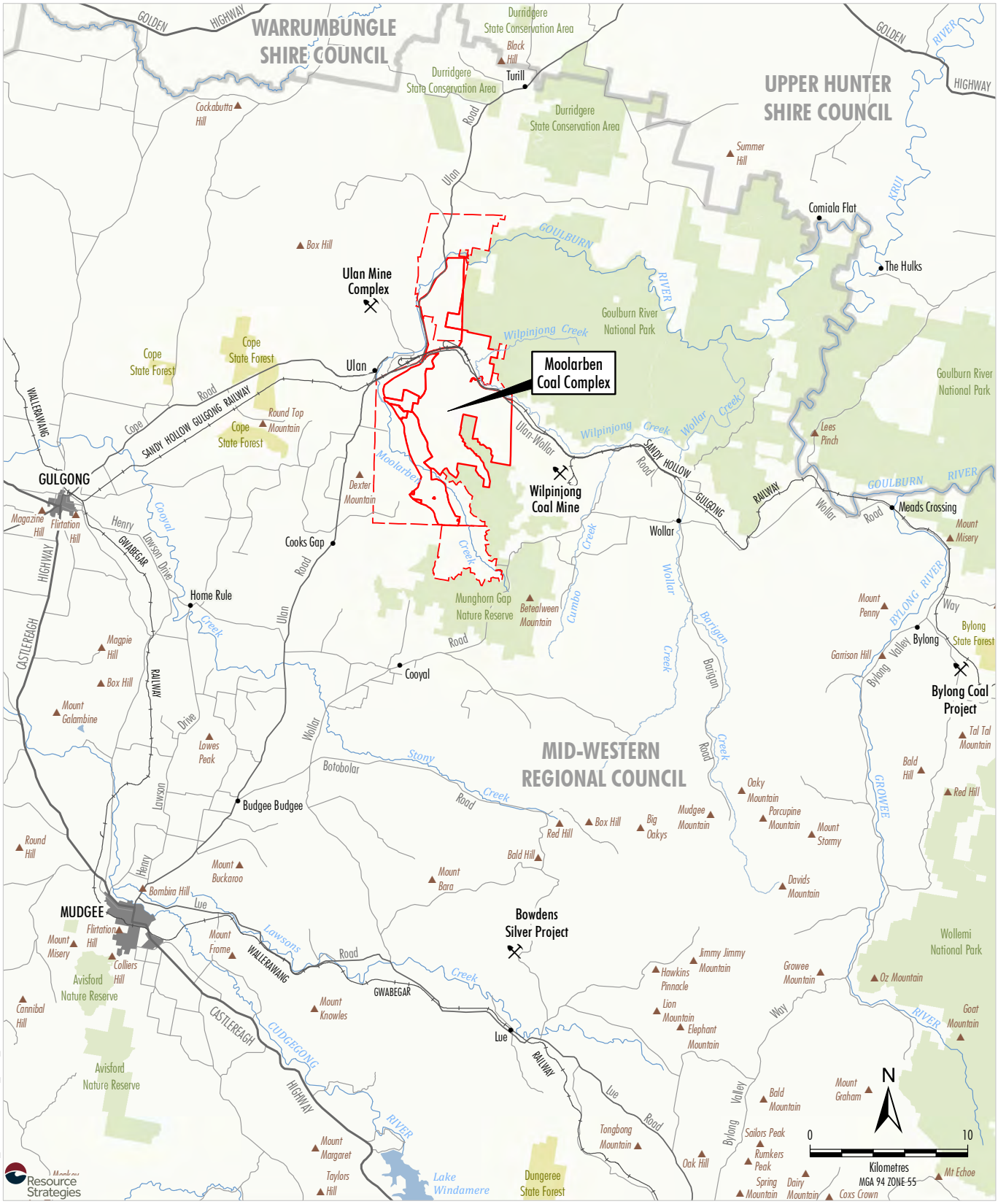
The Moolarben Coal Complex is located within Mining Lease (ML) 1605, ML 1606, ML 1628, ML 1691 and ML 1715. MCO also holds Exploration Licence (EL) 6288, EL 7073 and EL 7074.

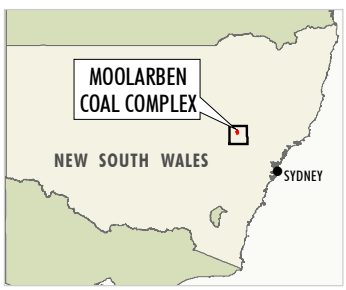
The additional surface infrastructure associated with the Modification is located above ML 1605.

The Project Application Areas and the real property descriptions are provided in Appendix 1 of the Stage 1 Project Approval, which is provided as Attachment 1 to this Modification Report. MCO owns all the land that is the subject of this Modification, with the exception of road easements and minor areas of Crown Lands.

Relevant land ownership information in the immediate vicinity of the Moolarben Coal Complex is provided on Figures 4 and 5 (note, Figure 5 includes recent landownership changes for properties 61, 99, 110, 217 and 255).

The Moolarben Coal Complex is located within the Mid-Western Regional Local Government Area (LGA).





LEGEND
- State Forest
- NSW National Parks and Wildlife Service
- Local Government Boundary
- Exploration Licence Boundary
- Mining Lease Boundary
- Mining Operation

Source: NSW Land & Property Information (2017); NSW Department of Industry (2019); Office of Environment and Heritage NSW (2019)

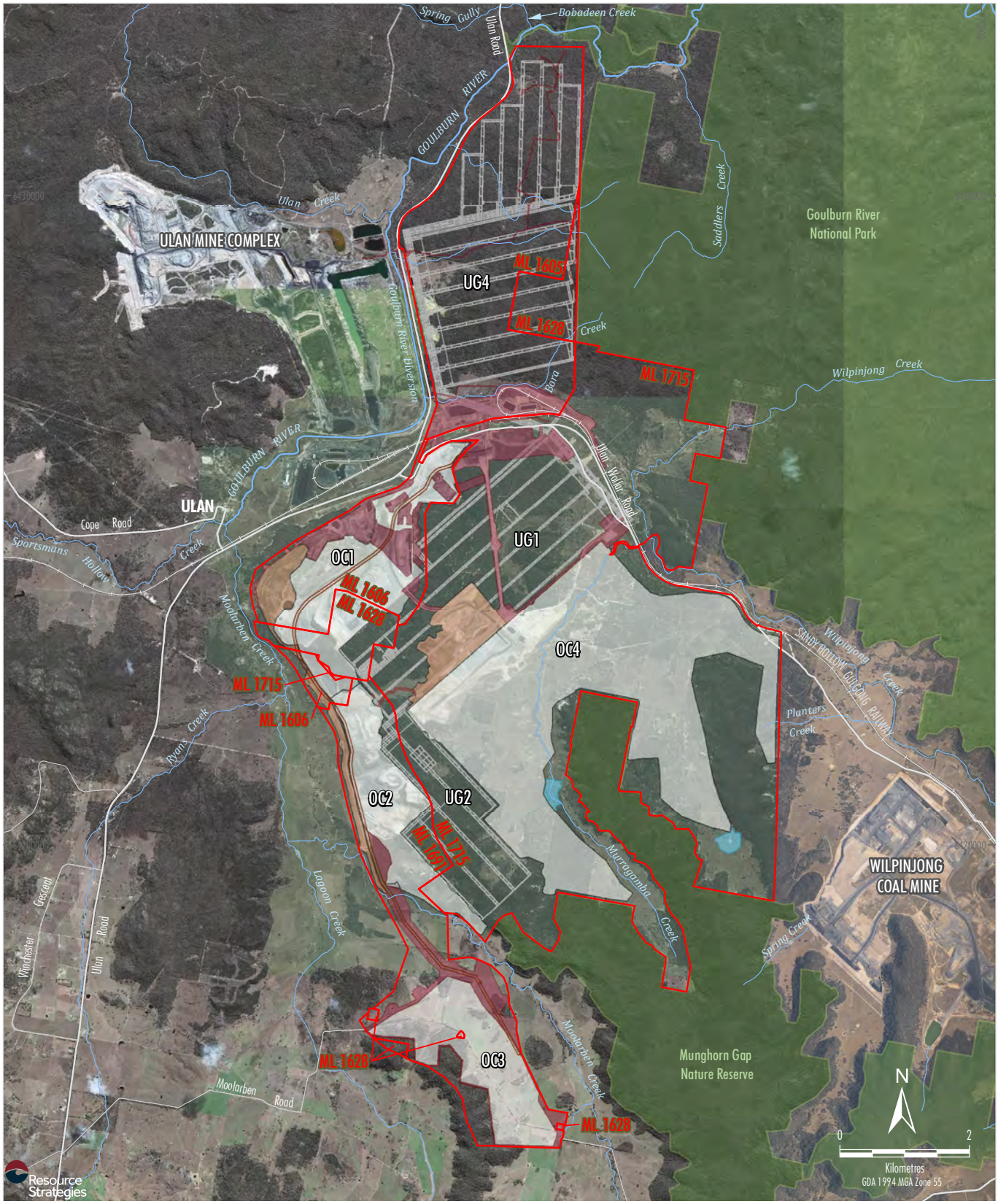
MOOLARBENCOAL

MOOLARBEN COAL COMPLEX

Regional Location

Figure 1

MCM-16-15_MOD15 UG4 AWMod_Sect1_2024



LEGEND

- NSW National Parks and Wildlife Service
- Mining Lease Boundary

Existing/Approved Development

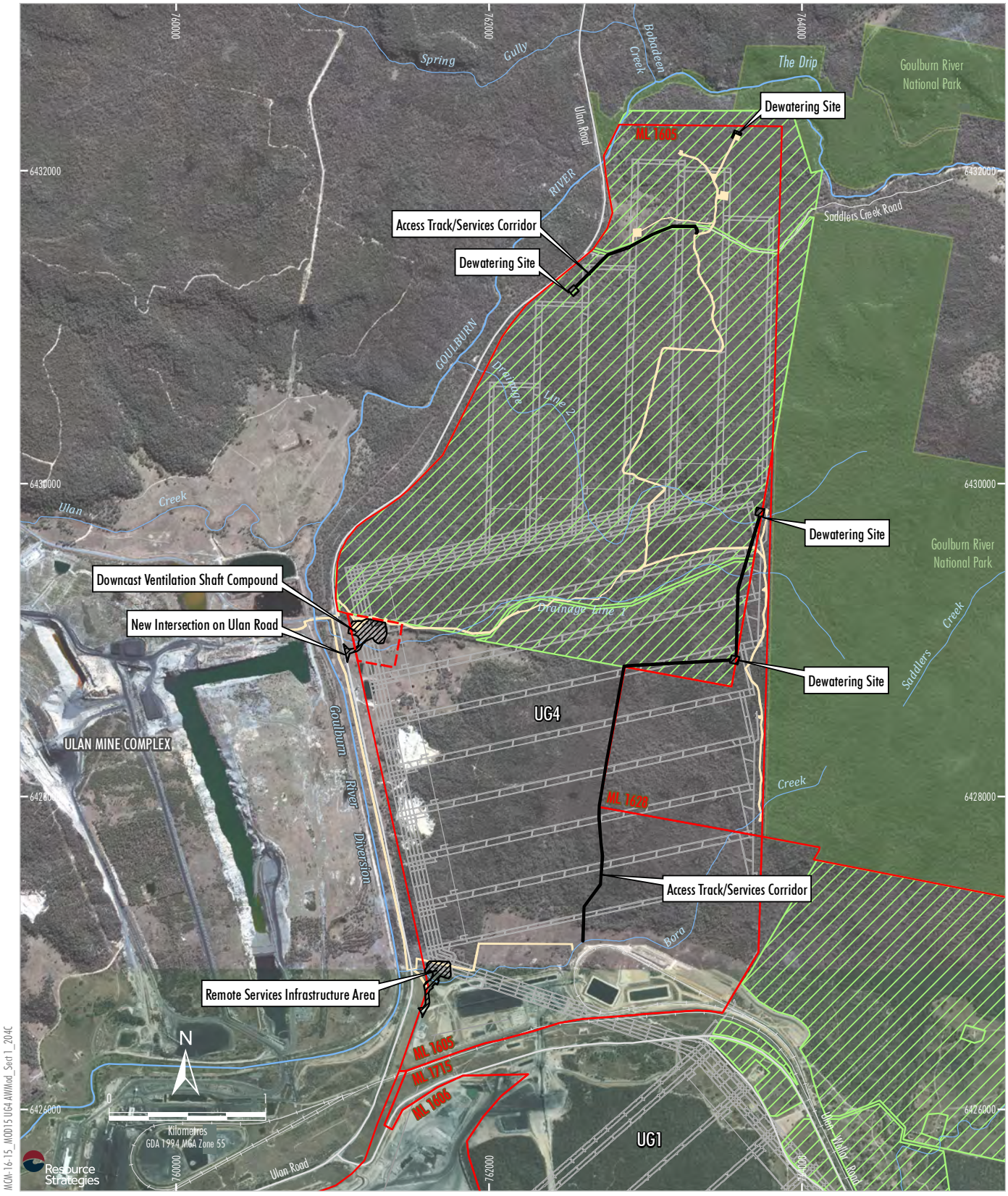
- Open Cut Mining Area
- Out-of-pit Emplacement
- Surface Infrastructure Area
- Clean Water Diversion Infrastructure
- Underground Longwall Layout
- Haul Road
- Road Realignment (not yet constructed)

Source: MCO (2018); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBEN COAL COMPLEX

Approved Moolarben Coal Complex

Figure 2



LEGEND

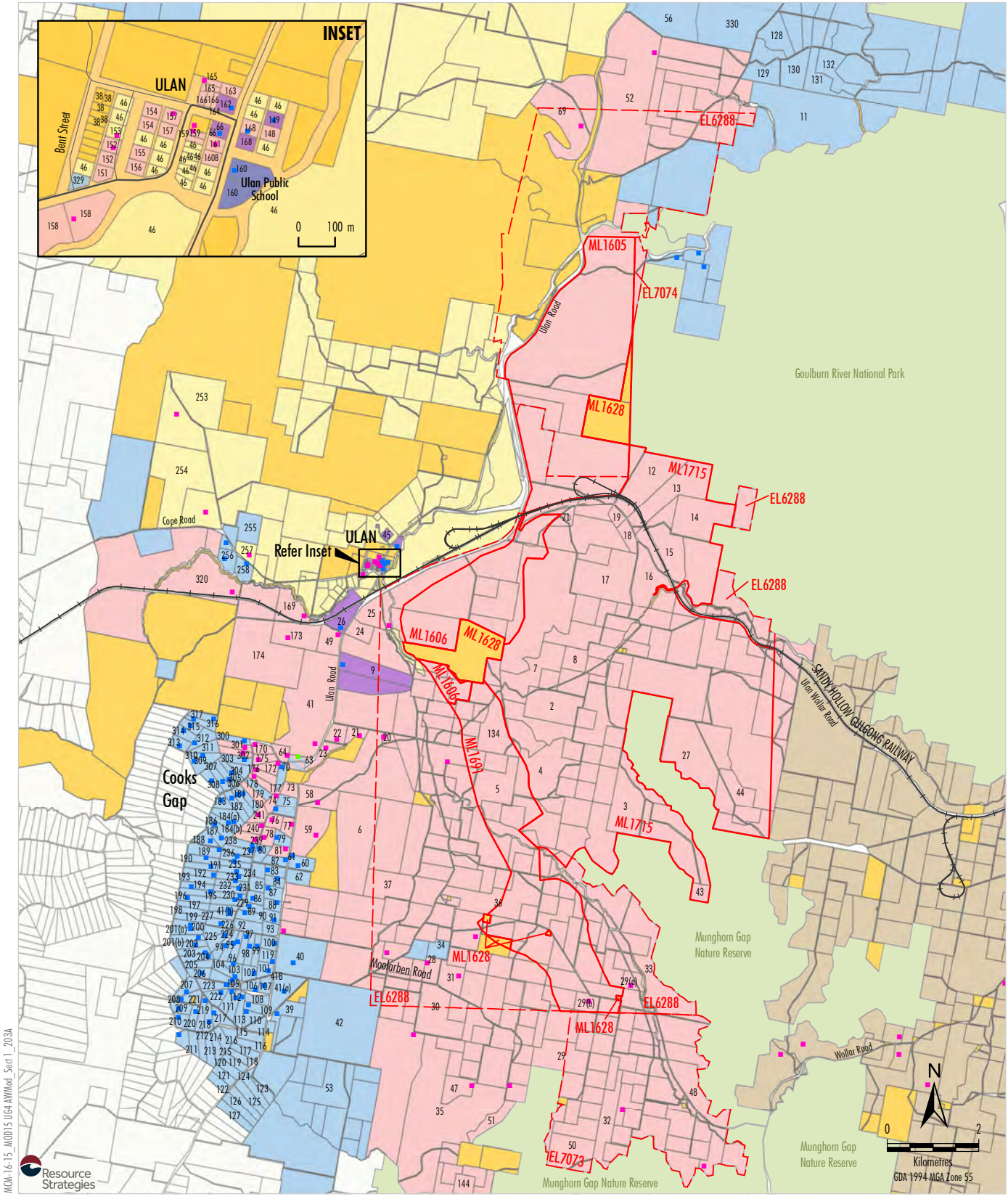
- Mining Lease Boundary
- Mining Lease Application Boundary
- Existing Biodiversity Offset Area
- Existing/Approved Development
- Underground Longwall Layout
- Pipeline and Borefield Infrastructure
- UG4 Ancillary Works Modification
- Indicative Surface Infrastructure Area

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBEN COAL COMPLEX

Indicative Surface Infrastructure Location

Figure 3



LEGEND

- Railway
- National Park/Nature Reserve
- Exploration Licence Boundary
- Mining Lease Boundary
- Mine Owned Receiver
- Private Receiver (Under Contract to MCO)
- Private Receiver

Land Ownership

- Moolarben Coal Operations Pty Ltd
- Moolarben Coal Operations Pty Ltd – Under Contract/Purchase Agreement
- Ulan Coal Mines Limited
- Wilpinjong Coal Mine
- Commercial
- Minister for Education
- Crown/State of NSW
- Privately Owned
- Unidentified Land

Source: MCO (2018); NSW Department of Planning, Industry and Environment (2019)

MOOLARBENCOAL

MOOLARBEN COAL COMPLEX

Relevant Land Ownership Plan

Figure 4

Ref No	Landholder
1-8	Moolarben Coal Operations Pty Ltd
9	Orica Australia Pty Limited
10	Moolarben Coal Operations Pty Ltd
11	JE Mullins & CD Imrie
12-25	Moolarben Coal Operations Pty Ltd
26	Forty North Pty Limited
27-33	Moolarben Coal Operations Pty Ltd
34	T Rheinberger
35-37	Moolarben Coal Operations Pty Ltd
38	The State of New South Wales
39	RM & DJ Sprigg
40	JM Devenish
41	Moolarben Coal Operations Pty Ltd
41(a&b)	PP Libertis
42	C & L Schmidt
43-44	Moolarben Coal Operations Pty Ltd
45	Advance Energy
46	Moolarben Coal Operations Pty Ltd/ Ulan Coal Mines Limited
46(b)	North-Eastern Wiradjuri Wilpinjong Community Fund Limited
47-52	Moolarben Coal Operations Pty Ltd
53	WD & MS Bryant
56	V Cundy
58-59	Moolarben Coal Operations Pty Ltd
60	CL Rayner & DM Mundey
61	TJ O'Malley
62	R Menchin
63	BF & B Whiticker
64	Moolarben Coal Operations Pty Ltd
66	Rostherne Pty Limited
69	Moolarben Coal Operations Pty Ltd
70	DJ & A Coventry
71	Moolarben Coal Operations Pty Ltd
73-74	Moolarben Coal Operations Pty Ltd
75	P Ban
76-78	Moolarben Coal Operations Pty Ltd
79	PTJ & SE Nagle
80	W & D Sebelic
81	Moolarben Coal Operations Pty Ltd
82	SC Hungerford & MC Clemens
83	CF & CR Wall
84	DS Sebelic
85	J & Z Nikolovski
86	NW Harris
87	BJ & K Howe
88	BC Mayers
89	MV & HM Glover & E & BJ Tomlinson
90	SA Powell
91	HM Graham
92	VA Pullicino & J, S & G Bonnici
93	F & M Fenech
94	LK Mittemayer
95	BJ Withington
96	D Lazicic
97	DJ & MD Smith
98	ME & JJ Piper
99	JR Moles & AJ Newton
100	W Ellem
101	RD & DMZ Hull
101(a)	PJ Kearns
102	KA Roberts
103	SB Burnett & SL Grant
104	RA & LA Deeben
105	DJ & N Katsikaris
106	TB & JH Reid
107	ZJ & M & AA Raso
108	R Varga
109	DA Evans
110	SM & JH Papps
111	GJ & NJ McEwan
112	MJ & LM Croft
113	CPG Ratcliff
114	TF & K Holland
115	PR McLean
116	DJ & SM Reid
117	JM Dick
118	A Scott
119	PJ Kearns
120	PS & DR Ord
121	EJ Cullen
122	WF Wirth
123	G Tuck-Lee & Symons
124	WJ & HE Bailey
125	DB McBride
126	MP Julian
127	BKT & SA Bracken
128	AW Sims
129	M Yelds
130	GP McEwen
131	GR & RA King
132	N Atkins
134	Moolarben Coal Operations Pty Ltd
144	Moolarben Coal Operations Pty Ltd
148	Moolarben Coal Operations Pty Ltd
149	Mid-Western Regional Council
151-152	Moolarben Coal Operations Pty Ltd
153	Ulan Coal Mine Limited
154-159	Moolarben Coal Operations Pty Ltd
160	Minister For Education And Training
160(b)	Moolarben Coal Operations Pty Ltd
161	Moolarben Coal Operations Pty Ltd
162	Rowmint Pty Limited
163-166	Moolarben Coal Operations Pty Ltd
168	PJL Constructions Pty Limited
169-170	Moolarben Coal Operations Pty Ltd
171	AD & SA McGregor
172-177	Moolarben Coal Operations Pty Ltd
178	PR Stone
179	Moolarben Coal Operations Pty Ltd
180	CD & LL Barrett
181	SM Forster
182	J Dutoitcook
183	R & EA Steines
184	(a&b) LA Stevenson
186	RW & IJ Adamson
187	BT & KM Feeney
188	KR & T Fielding
189	GA Fay
190	T & LK Sahyoun
191	BW & TS Lasham
192	D Williams
193	DJ Moloney
194	PM & K Potts
195	R Cottam
196	F Saxberg & M Weir
197	PGG & I Neilsen
198	GR & ME Metcalfe
199	PGG & I Nielsen
200	VK Grimshaw
201	KR & GM Towerton
202	H & VF Butler
203	DJ Miller
204	RB & JE Donnan
205	DW Sparrow & M Tallan
206	CA Marshall & R Vella
207	AA & DM Smith
208	SA & CR Hasaart
209	F Mawson
210	JM & AM Tebutt
211	SA McGregor & WJ Gray
212	E & M Lepik
213	D & J Parsonage
214	RK & EG O'Neil
215	SG & PM Green
216	G Holland & FA Handicott
217	CA Francis
219	T & S Riger
220	SJ Rusten & NJ Smith
221	The State of New South Wales
222	BJ Purtell
223	EW Palmer & JM Stewart
224	RS & PCC Dupond
225	G & RF Doualetas
226	LAA & FC Muscat
227	WP & JA Hughes
229	JJ & BA Lowe
230	DA Hoole & DT Rawlinson
231	T Morrison & SM Benny
232	L & JA Haaring
233	K & D Boal
234	D & L Gaw
235	LM & RS Wilson
236	RG & CA Donovan
237	B & S Stokes
238	B Powell
239-241	Moolarben Coal Operations Pty Ltd
253-254	Ulan Coal Limited
255	M Puckeridge
256	RC Campbell
257	Ulan Coal Limited
258	PM & CD Elias
300	CM Collins & CY Marshall
301-302	Moolarben Coal Operations Pty Ltd
303	HJ Ungaro
304	G Balajan
305	L Barisic & M Aul
306	E Armstrong
307	M Chant & NK Young
308	NA Dower
309	GS Maher
310	KI Death
311	BJ & LC Williamson
312	MS & JJ Ioannou
313	NJ & BDE Pracy
314	SL Ford
315	WJ Richards & BJ Uzelac
316	CR Vassel & CM Williams
317	RJ Hore & V Bingham
320	Moolarben Coal Operations Pty Ltd
329	G Tuck-Lee
330	Nwiran Pty Limited

Resource Strategies

MCOA-16-15_MOD15 UG4 AMWod_Sect1_0018

Source: MCO (2019); NSW Land & Property Information (2019)

MOOLARBENCOAL

MOOLARBERN COAL COMPLEX

Relevant Landholder List

Figure 5

1.3 APPROVALS HISTORY

Moolarben Coal Project (Stage 1)

The Moolarben Coal Project Stage 1 was approved under Part 3A of the EP&A Act by the NSW Minister for Planning on 6 September 2007 (Project Approval [05_0117]). Fourteen Modifications to Project Approval (05_0117) have since been approved under section 75W of the EP&A Act, as summarised below.

- **MOD 1:** In August 2008, MCO submitted an application to reconfigure the Coal Handling Preparation Plant (CHPP), emergency tailings dam, transfer stations and conveyors, rail loop, coal stockpiles, UG4 conveyor, groundwater treatment ponds and a water storage dam, and to amend the wording of three clauses in the Project Approval. The Modification was approved by the NSW Minister for Planning on 26 November 2008.
- **MOD 2:** In December 2008, MCO submitted an application to permit minor construction activities to commence at the site prior to completion of the main mine site access intersection off Ulan-Cassilis Road. The modification was approved by the NSW Minister for Planning on 18 December 2008.
- **MOD 3:** In February 2009, MCO submitted an application to allow for Stage 1 infrastructure to receive, handle and process Stage 2 coal for the life of Stage 2 (to 31 December 2038). An additional void in OC1 was also proposed to allow access to UG4. The modification was approved by the NSW Planning Assessment Commission (as delegate of the NSW Minister for Planning) on 30 January 2015.
- **MOD 4:** In April 2009, MCO submitted an application to change the configuration of the rail loop from a figure-eight to a balloon loop layout. The modification was approved by the NSW Minister for Planning on 30 June 2009.
- **MOD 5:** In June 2009, MCO submitted an application to relocate the ROM coal facility and develop a water sharing pipeline from the Ulan Mine Complex. The modification was approved by the NSW Minister for Planning on 5 October 2009.
- **MOD 6:** In December 2009, MCO submitted an application to relocate and double the capacity of the rejects bin. The modification was approved by the NSW Minister for Planning on 11 January 2010.
- **MOD 7:** In March 2010, MCO submitted an application for the development and operation of a water supply and dewatering borefield and associated ancillary facilities above UG4. The modification was approved by the NSW Minister for Planning on 3 February 2011.
- **MOD 8:** In April 2010, MCO submitted an application to establish and operate a ROM coal stockpile adjacent to the ROM coal dump hopper. The modification was approved by the NSW Minister for Planning on 27 May 2010.
- **MOD 9:** In May 2013, MCO submitted an application to increase the extents of the approved Stage 1 open cuts. The modification was approved by the NSW Planning Assessment Commission (as delegate of the NSW Minister for Planning) on 16 June 2014.
- **MOD 10:** In February 2015, MCO submitted an application to increase the Stage 1 open cut ROM coal production rate from 8 to 9 million tonnes per annum (Mtpa) for calendar years 2015 and 2016. The modification was approved by the Department of Planning and Environment (DPE) (as delegate of the NSW Minister for Planning) on 17 April 2015.
- **MOD 11:** In April 2015, MCO submitted an application to construct a new haul road, backfill the OC1 void, adjust the site water management systems and refine surface mine infrastructure. The modification was approved by the DPE (as delegate of the NSW Minister for Planning) on 21 August 2015.
- **MOD 12:** In June 2015, MCO submitted an application to increase UG1 footprint, the amount of ROM coal that can be extracted from underground mining from 4 to 8 Mtpa, adjust mine infrastructure and increase rail departures to seven per day on average and nine per day at peak and backfill of the OC1 void. The modification was approved by the NSW Planning Assessment Commission (as delegate of the NSW Minister for Planning) on 29 April 2016.
- **MOD 13:** In November 2016, MCO submitted an application to temporarily increase ROM coal washing from 13 Mtpa to 13.5 Mtpa for the 2017 calendar year. The modification was approved by the DPE (as delegate of the NSW Minister for Planning) on 20 January 2017.

- **MOD 14:** In November 2017, MCO submitted an application to increase the coal production and product coal transport limits. MOD 14 also involved additional surface disturbance, changes to surface infrastructure, changes to the rehabilitation strategy and water management and inclusion of a water treatment facility. The modification was approved by the Independent Planning Commission on 19 June 2019.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Approvals

The Moolarben Coal Project Stage 1 operates in accordance with Approval Decisions under the EPBC Act, as summarised below:

- **EPBC 2007/3297:** In February 2007, MCO referred relevant components of Stage 1 of the Moolarben Coal Project to the Department of Environment and Energy (DEE). Approval under the EPBC Act was granted on 24 October 2007 and was varied by notice on 25 February 2009, 11 May 2010, 20 July 2016 and 21 August 2019.
- **EPBC 2013/6926:** In July 2013, MCO referred relevant components of the Stage 1 Optimisation Modification (MOD 12) to the DEE. Approval under the EPBC Act was granted on 13 November 2014 and was varied by notice on 20 July 2016.
- **EPBC 2017/7974:** In June 2017, MCO referred relevant components of the Open Cut Optimisation Modification (MOD 14) to the DEE. Approval under the EPBC Act was granted on 6 September 2019.

1.4 MODIFICATION OVERVIEW

Proposed changes to the approved Moolarben Coal Complex for the Modification are related to the following:

- construction and operation of a new downcast ventilation shaft and associated compound above the western extent of UG4;
- construction of a new access road (with appropriate surface drainage and sediment control infrastructure) and intersection with Ulan Road to access the new ventilation shaft compound;
- construction and operation of a new remote services infrastructure area above the UG4 mains, including a new internal access road that crosses Bora Creek;
- augmentations to the approved dewatering borefield, including relocating/expanding four of the ten approved dewatering sites above UG4, and construction of additional access tracks and infrastructure corridors; and
- other minor ancillary infrastructure to support the safe and efficient operation of the UG4 underground mining area, such as service dropholes.

The Modification would not involve any changes to the approved mining operations at UG4, including no changes to the approved mining layout, mining method, mine life, production limits or peak workforce numbers.

1.5 MODIFICATION JUSTIFICATION

The Modification would provide for the safe and efficient mining of the approved UG4 underground mining area.

1.6 STRUCTURE OF THE MODIFICATION REPORT

This Modification Report is structured as follows:

Section 1	Provides a description of the existing/approved Moolarben Coal Complex and an overview of the Modification.
Section 2	Provides a description of the Modification.
Section 3	Provides a description of the strategic context for the proposed Modification.
Section 4	Provides the key relevant statutory requirements for the project.
Section 5	Provides a summary of community engagement undertaken for the project.
Section 6	Provides a summary of the existing environment, assesses the potential impacts associated with the Modification and describes the existing MCO environmental management systems and measures in place to manage and monitor any potential impacts and identifies any additional controls required.
Section 7	Provides a description of the Moolarben Coal Complex Rehabilitation Strategy.

Section 8	Evaluates the merits of the proposed modifications.
Section 9	Provides references and abbreviations.

Attachments 1 and 2 and Appendices A to H provide supporting information as follows:

Attachment 1	Stage 1 Project Approval (05_0117)
Attachment 2	Revised Development Application Boundary
Appendix A	Aboriginal Cultural Heritage Assessment
Appendix B	Biodiversity Development Assessment Report
Appendix C	Flooding Review
Appendix D	Surface Water Review
Appendix E	Noise Review
Appendix F	Air Quality Review
Appendix G	Road Transport Review
Appendix H	Groundwater Review

2 DESCRIPTION OF THE MODIFICATION

The proposed changes to the approved Moolarben Coal Complex are described below. The additional surface infrastructure covers a total area of approximately 12.5 ha.

2.1 DOWNCAST VENTILATION SHAFT COMPOUND

The Modification would involve the construction and operation of a new downcast ventilation shaft with a nominal construction diameter of 5.5 metres (m) and a completed lined diameter of 5 m and associated compound above the western extent of UG4 (Figure 3). The ventilation shaft compound would include the following infrastructure:

- new site access road and intersection with Ulan Road, including crossing of an unnamed drainage line, referred to as Drainage Line 1;
- appropriate surface drainage and sediment control infrastructure;
- other ancillary services and infrastructure (e.g. ballast and concrete drop holes, ballast storage area, water tanks, fencing, etc.); and
- temporary site office, lay-down area, drill sumps and drying pads during the construction phase.

The location of the downcast ventilation shaft compound and associated Ulan Road access is shown on Figure 3. The indicative general arrangement for the ventilation shaft compound is shown on Figure 6.

The new intersection with Ulan Road would be designed to be consistent with the *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* (Austroads, 2017) and in consultation with NSW Roads and Maritime Services (RMS) to enable safe access to the downcast ventilation shaft compound, particularly for vehicles travelling from the south, turning right across Ulan Road (Figure 3).

2.2 REMOTE SERVICES INFRASTRUCTURE AREA

The Modification would involve the construction and operation of a new remote services infrastructure area above the UG4 mains.

The remote services infrastructure area would include the following infrastructure:

- service boreholes (up to a nominal diameter of about 550 mm) to support the underground mine, for services including, but not limited to:
  - electrical;
  - concrete;
  - ballast;
  - stonedust; and
  - compressed air;
- a new (internal) access track including crossing of Bora Creek, power lines and water pipelines;
- appropriate surface drainage and sediment control infrastructure;
- other ancillary services and infrastructure (e.g. water tanks, shed, electrical equipment, ballast and stonedust storage, compressors, sediment dam, soil stockpiles, fencing, etc); and
- temporary site office, lay-down areas and drill sumps during the construction phase.

The location of the remote services infrastructure is shown on Figure 3. The indicative general arrangement for the remote services infrastructure area is shown on Figure 7.

Bora Creek Crossing

The Modification would involve the construction of a culvert crossing at Bora Creek (and subsidiary minor drainage line) to allow for access to the remote services infrastructure area. This would include the following:

- earthworks to facilitate the positioning and installation of new culverts;
- upstream and downstream erosion protection structures; and
- vehicle safety fixtures.

2.3 DEWATERING SITES

A dewatering borefield (referred to in previous assessment documentation as the “northern borefield”) is approved to be developed above UG4 for dewatering in advance of, and during, underground operations.

LEGEND

UG4 Ancillary Works Modification

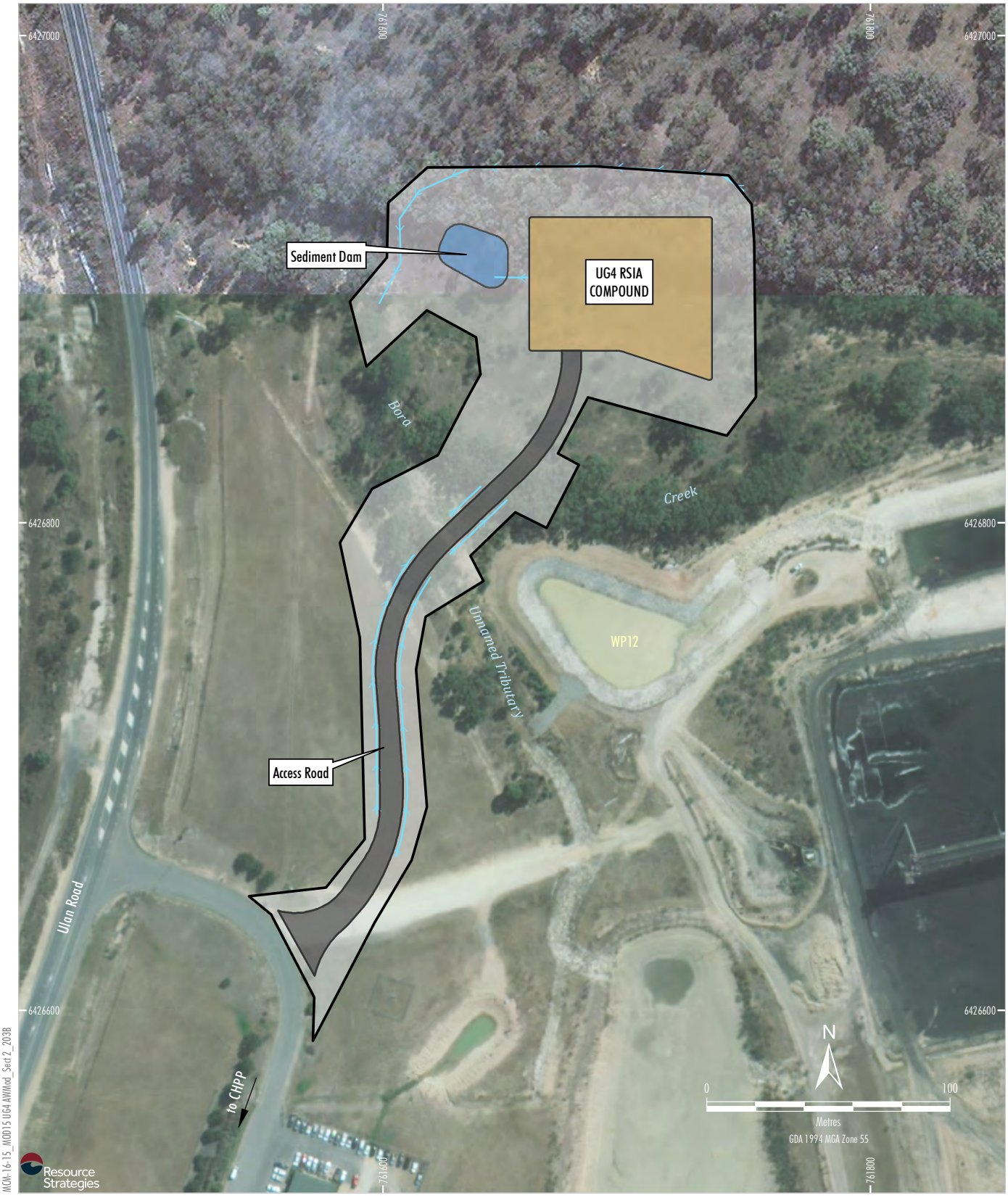
- Indicative Surface Infrastructure Area
- Pad
- Water Management Diversion

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBEN COAL COMPLEX

Ulan Road Intersection and Vent Shaft Compound Indicative General Arrangement

Figure 6



MCM-16-15_MOD15 UG4 AWMod_Sect 2_2038

LEGEND

UG4 Ancillary Works Modification

Indicative Surface Infrastructure Area

Pad

Water Management Diversion

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBEN COAL COMPLEX

Remote Services Infrastructure Area
Indicative General Arrangement

Figure 7

The Modification would involve augmentations of the approved dewatering sites, including relocating/expanding four sites, and construction and realignment of the associated access tracks and services corridors (Figure 3). This would include:

- drilling up to three boreholes per site with a nominal diameter of 700 mm, construction and operation of dewatering bore headworks, and allowance for additional surface disturbance at these four sites to allow for vehicle access, infrastructure and drill sumps; and
- constructing approximately 4 km of additional access tracks and services corridors within an approximate 10 m corridor (including a 5 m wide access track, surface drainage and sediment control infrastructure, a buried power line, wherever possible [i.e. not overhead lines], communications and pipeline) to connect to the existing mine infrastructure (Figure 3).

The indicative locations of the four relocated/expanded dewatering sites and associated access and infrastructure corridors are shown on Figure 3.

Disturbance will be minimised as much as possible by using existing tracks along the proposed services corridors.

2.4 CONSTRUCTION ACTIVITIES

Downcast Ventilation Shaft Compound

Construction of the downcast ventilation shaft compound would occur 24 hours per day, seven days per week. Earth works and access would take approximately 12 weeks and construction of the shaft itself would take approximately 6 months.

Remote Services Infrastructure Area

Construction of the remote services infrastructure area would occur during daytime hours, seven days per week. Earth works and access would take approximately 12 weeks with total construction taking approximately three to four months.

Dewatering Sites

Construction activities at most dewatering site would occur during daytime hours, seven days per week. Earth works for the construction of the northernmost dewatering site would be undertaken during daytime hours, Monday to Friday, while drilling would occur during daytime hours 7 days per week.

Earth works and access would take approximately eight weeks while construction of the boreholes at each dewatering site would take approximately eight to 12 weeks.

Construction of the two southern dewatering sites (Figure 3) would likely overlap with construction activities of the downcast ventilation shaft and the remote services infrastructure area.

Construction at the two northern dewatering sites would occur approximately three years after the southern dewatering sites (i.e. prior to secondary extraction of the adjacent north-south orientated longwall panels in UG4).

2.5 WORKFORCE

The number of workers required for the Modification would be within the peak construction workforce (250 personnel) previously assessed for the Moolarben Coal Complex.

The Modification would not require an increase to the peak operational workforce of 740 personnel previously assessed for the Moolarben Coal Complex.

2.6 CLARIFICATION OF SCHEDULE 3, CONDITION 78A OF PROJECT APPROVAL 05_0117

In the Planning Assessment Commission's Determination Report for UG1 Optimisation Modification (Stage 1 MOD 12), it stated that "*…an additional level of monitoring, reporting and government oversight*" was warranted for Longwall Panels A9-A14 to ensure appropriate management practices are deployed in the vicinity of The Drip.

To that end, Condition 78A in the Stage 1 Project Approval (05_0117) requires the preparation of an expert report in regard to subsidence, surface water and groundwater impacts to be submitted and approved by the Secretary prior to the commencement of secondary extraction in the subsequent longwall panel.

MCO is seeking a clarification on the timing of satisfying this condition to ensure the report is submitted **as soon as** sufficient monitoring results are available on the previous panel. This clarification will provide for:

i) Early confirmation of compliance with the Table 14 Performance Measures; and

ii) Minimisation of the potential for longwall discontinuity (and employment discontinuity).

Importantly, all of the other conditions that regulate and provide certainty in regard to the environmental performance of secondary extraction of UG4 (e.g. no change to subsidence impact performance measures or the requirement for the preparation and approval by the Secretary of an Extraction Plan) are proposed to be retained unamended.

2.7 COMPONENTS OF MOOLARBEN COAL COMPLEX NOT BEING MODIFIED

The Modification **does not** involve changes to the following components of the Moolarben Coal Complex (Table 1):

- operational mine life;
- annual production limits;
- open cut or underground extraction limits or mine layouts;
- hours of operation;
- blasting frequency limits;
- method of reject disposal; or
- peak workforce.

The Modification does not involve changes to any components of Stage 2 of the Moolarben Coal Complex.

Table 1
Summary Comparison of Approved and Modified Moolarben Coal Project

Relevant Approval Component	Moolarben Coal Complex Stage 1 (05_0117)	Moolarben Coal Complex Stage 1 (05_0117) (including the Modification)
Operational Mine Life	Mining operations can be carried out until 31 December 2038.	Unchanged.
Hours of Operation	Mining operations can be carried out 24 hours per day, seven days per week.	Unchanged.
Coal Extraction Limits	Up to 10 million tonnes (Mt) of ROM coal can be extracted from the open cut mining operations in any calendar year.	Unchanged.
	Up to 16 Mt (total) of ROM coal can be extracted from the open cut operations at the Moolarben Coal Complex in any calendar year.	Unchanged.
Underground Coal Extraction Limits	Up to 8 Mt (total) of ROM coal can be extracted from the underground mining operations at the Moolarben Coal Complex in any calendar year.	Unchanged.
Coal Processing and Offsite Transport	Up to 16 Mt (total) of ROM coal from the Moolarben Coal Complex can be processed (washed) in any calendar year, except in the year 2017.	Unchanged.
	Total coal production of 22 Mtpa.	
	All coal is to be transported from the site by rail (average of eight trains per day and peak of 11 trains per day).	
Blasting Frequency Limits	A maximum of two blasts per day and nine blasts per week (averaged over a calendar year) can be carried out at the Moolarben Coal Complex.	Unchanged.
	Blasting can be carried out on site between 9:00 am and 5:00 pm Monday to Saturday inclusive. No blasting allowed on Sundays, public holidays, or at any other time without written approval of the Secretary.	
Biodiversity Offset Strategy	The Biodiversity Offset Strategy is shown in Appendix 8 of the Project Approval (05_0117).	Updated Biodiversity Offset Strategy to account for additional disturbances as required.
Site Access	Site access via Ulan Road and Ulan-Wollar Road.	Additional site access to the Downcast Ventilation Shaft Compound via Ulan Road.

Table 1 (Continued)
Summary Comparison of Approved and Modified Moolarben Coal Project

Relevant Approval Component	Moolarben Coal Complex Stage 1 (05_0117)	Moolarben Coal Complex Stage 1 (05_0117) (including the Modification)
Water Management Design and Objectives	Design, install and generally maintain the dams in accordance with the series *Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries*.	Unchanged.
	Ensure there is sufficient water for all stages of the project in accordance with Condition 29, Schedule 3 of Stage 1 Project Approval (05_0117).	
	Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site.	
	Mine water storage infrastructure is designed to store a 50 year average recurrence interval 72-hour storm event.	
	On-site storages (including tailings dams, mine infrastructure dams, groundwater storage and treatment dams) are suitably lined to comply with a permeability standard of less than 1×10^{-9} metres per second (m/s).	
	Unless an EPL authorises otherwise, MCO will comply with section 120 of the NSW *Protection of the Environment Operations Act, 1997* (PoEO Act).	
Coal rejects	Co-disposal of coal rejects with waste rock in the open cut voids.	Unchanged.
Employment	Peak operational workforce of 740 personnel. Average operational workforce of 667 personnel. Peak construction workforce of 250 personnel. Average construction workforce of 120 personnel.	Unchanged.
Management of Dangerous Goods	Conducted in accordance with *Storage and Handling of Dangerous Goods – Code of Practice 2005* (Workcover, 2005).	Unchanged
Water Management Performance Measures	As per Condition 32 of Schedule 3 of Project Approval 05-0117.	Unchanged.
Air Quality Criteria	As per Condition 17 of Schedule 3 of Project Approval 05-0117.	Unchanged.
Noise Criteria	As per Condition 1 of Schedule 3 of Project Approval 05-0117.	Unchanged.
Subsidence Impact Performance Measures	As per Condition 73 and 75 of Schedule 3 of Project Approval 05-0117.	Unchanged.
Blasting Criteria	As per Condition 8 of Schedule 3 of Project Approval 05-0117.	Unchanged.
Waste Management	As per Condition 64 of Schedule 3 of Project Approval 05-0117.	Unchanged

3 STRATEGIC CONTEXT

The need for the additional/relocated ancillary surface infrastructure associated with the Modification has been identified through additional planning and engineering studies undertaken since UG4 was approved in 2007, and in consideration of operational experience since the commencement of operations in UG1.

UG4 contains a significant resource that the State and Commonwealth Governments have approved to be mined, subject to the approval conditions of the relevant State and Commonwealth approvals identified in Section 1.3.

UG4 is of strategic importance to MCO, as the ability to mine this approved area was a critical consideration in the decision to invest in longwall mining operations at the Moolarben Coal Complex, and employ an underground mining workforce.

The proposed Modification is important to MCO given:

- it would facilitate safe and efficient recovery of underground coal, with no material change to potential environmental impacts;
- it would result in reduced operational costs compared to other alternatives; and
- the Modification can be constructed and operated in accordance with all other existing environmental limits and performance measures for the Moolarben Coal Complex.

The importance of the individual components of the Modification to MCO is provided below.

Downcast Ventilation Shaft Compound

Following life-of-mine ventilation modelling, MCO has identified that the proposed ventilation shaft is required to supply sufficient fresh air to support operations, and to keep mine pressures as low as practical to avoid the risk of spontaneous combustion.

Remote Services Infrastructure Area

The remote services infrastructure area proposed as part of the Modification is required to support safe and efficient operation of the UG4 workings.

The existing UG1 remote services infrastructure area is located approximately 2 km from the UG4 underground workings, and this distance would continue to increase as UG4 mining progresses.

The proximity of the proposed remote services infrastructure area to the longwall mining area would allow for the following efficiencies for MCO, relative to the existing UG1 remote services infrastructure area:

- minimise transportation distances for everyday consumables (e.g. stonedust, concrete, and ballast);
- minimise the use of diesel equipment required for transport of materials;
- reduce the number of heavy loads on underground roadways, that contribute to road degradation, underground dust generation and potential safety issues; and
- increase supply of compressed air to the underground workings, which is of primary importance for the underground services.

Relocated/Augmented Dewatering Sites

During detailed design, MCO has identified that it would be beneficial to augment approved dewatering sites to allow for the efficient transfer of water from the mine workings to the surface during mining operations to maintain a safe underground working environment (a critical safety consideration).

The revised construction method at the relocated/expanded sites involves drilling of multiple holes per dewatering site. While this is expected to increase disturbance at an individual dewatering site, it would reduce the total number of sites required to facilitate dewatering of the mine workings.

4 STATUTORY CONTEXT

This section outlines the planning framework and statutory context relevant to the assessment of the Modification. It also provides a consideration of the Modification against the objects of the EP&A Act.

4.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

The Moolarben Coal Project (Stage 1) was approved under Part 3A of the EP&A Act by the NSW Minister for Planning on 6 September 2007 (Project Approval [05_0117]).

Amendments made to the EP&A Act that removed the ability for Part 3A project approvals to be modified under the former section 75W of the EP&A Act took effect on 1 March 2018.

The Moolarben Coal Project (Stage 1) was declared a State Significant Development (SSD) under Clause 6 of Schedule 2 to the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* via the Government Gazette on the 28 June 2019.

Given the SSD status, approval for the proposed Modification has been sought under section 4.55(2) of the EP&A Act.

> **4.55(2) Other modifications**
>
> *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*
>
> *(a.) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all), and*
>
> *…*

Clause 3BA of Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* relevantly provides:

> ***3BA Winding-up of transitional Part 3A modification provisions on cut-off date of 1 March 2018 and other provisions relating to modifications***
>
> *…*
>
> *(6) In the application of section 4.55 (1A) or (2) or 4.56 (1) of the Act to the following development, the consent authority need only be satisfied that the development to which the consent as modified relates is substantially the same development as the development authorised by the consent (as last modified under section 75W):*
>
> *(a) development that was previously a transitional Part 3A project and whose approval was modified under section 75W,*
>
> *…*

The Modification involves minor relocated and/or additional surface infrastructure to support mining of the approved UG4 mining area. As shown in Table 1, the approved Moolarben Coal Complex would be largely unchanged by the Modification.

As such the Modification is considered substantially the same development to the existing operations for which consent was originally granted for Moolarben Coal Project (Stage 1) (Project Approval [05_0117]), as modified.

EP&A Act Objects

The EP&A Act and the *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation) set the framework for planning and environmental assessment in NSW.

Section 1.3 of the EP&A Act describes the objects of the EP&A Act as follows:

> *(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
>
> *(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
>
> *(c) to promote the orderly and economic use and development of land,*
>
> *(d) to promote the delivery and maintenance of affordable housing,*
>
> *(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
>
> *(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*
>
> *(g) to promote good design and amenity of the built environment,*

(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,

(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,

(j) to provide increased opportunity for community participation in environmental planning and assessment.

The Modification is considered to be generally consistent with the objects of the EP&A Act, because it is a modification which:

- incorporates measures for the management and conservation of natural resources (Section 6);
- facilitates the safe and efficient recovery of underground coal with no material change to potential environmental impacts (when considering the implementation of proposed environmental management measures);
- would result in no significant impact on threatened species, their population and ecological communities or their habitats;
- facilitates development of the State's mineral resources (i.e. coal resources) in a manner that minimises environmental impacts through the implementation of the Moolarben Coal Complex Environmental Management Strategy and other measures (Section 6); and
- allows public involvement and participation through consultation activities (Section 5), which would be ongoing following the public exhibition of this Modification Report and NSW Department of Planning, Industry and Environment (DPIE) assessment of the Modification in accordance with the requirements of the EP&A Act.

4.2 APPROVALS, LICENCES AND PLANS

This section describes potential changes to MCO's existing Project Approval and licence conditions that may be required should the Modification be approved. Table 2 provides a summary of the separate approvals that MCO would require prior to commencement of the Modification.

4.2.1 Project Approval Conditions

Table 12 (Condition 34, Schedule 3) and Appendix 8 of Project Approval (05_0117) would require amendment to incorporate the biodiversity offset strategy for the Modification. Other updates to Project Approval (05_0117) would be required, including updates to general arrangement and monitoring figures to reflect the Modification.

4.2.2 Mining Operations Plan

The Moolarben Coal Complex Mining Operations Plan (MOP) would be updated to incorporate the Modification.

Table 2
Separate Regulatory Approvals Required for the Modification

Legislation	Approval	Relevance to Project
Commonwealth Legislation		
EPBC Act	EPBC Act Approval (if required)	MCO will lodge an EPBC Act Referral for the Modification to the Commonwealth Department of the Environment and Energy (DEE). Should the DEE determine that the Modification is likely to have a significant impact on Matter of National Environmental Significance, an EPBC Act Approval would be required.
New South Wales Legislation		
Mining Act, 1992	Mining Operations Plan	The Moolarben Coal Complex MOP would be updated to incorporate the Modification.
Protection of the Environment Operations Act, 1997	EPL 12932	EPL 12932 would be varied, as required, for the additional sediment control infrastructure for the Modification.
Roads Act, 1993	Approval under section 138 of the *Roads Act, 1993* to construct the new proposed intersection and other works associated with the Modification.	As part of the Modification, MCO is seeking to develop a new intersection off Ulan Road to the proposed ventilation shaft compound (Section 2.1) and install pipe, power and communications lines within Crown road reserves.

4.2.3 Environment Protection Licence Conditions

EPL 12932 would be varied, as required, for the additional sediment control infrastructure for the Modification.

4.2.4 Management/Monitoring Plans

Some management plans may require revision to reflect updated environmental management measures or changes to Project Approval conditions resulting from the Modification.

4.3 GENERAL STATUTORY REQUIREMENTS

4.3.1 Other State Legislation

In addition to the EP&A Act, the following NSW Acts may be applicable to the Moolarben Coal Complex incorporating the Modification:

- *Biodiversity Conservation Act, 2016*;
- *Crown Land Management Act, 2016*;
- *Dams Safety Act, 2015;*
- *Dangerous Goods (Road and Rail Transport) Act, 2008;*
- *Heritage Act, 1977*;
- *Mining Act, 1992*;
- *Native Title (New South Wales) Act, 1994;*
- *National Parks and Wildlife Act, 1974*;
- *Protection of the Environment Operations Act, 1997;*
- *Roads Act, 1993*;
- *Water Act, 1912;*
- *Water Management Act, 2000*; and
- *Work Health and Safety (Mines and Petroleum Sites) Act, 2013.*

Relevant licences or approvals required under these Acts would continue to be obtained for the Moolarben Coal Complex as required. Key plans and licences that would require revision to incorporate the Modification are outlined in Section 4.2.

Additional detail on the likely requirements under the key Acts is provided below.

Water Management Act, 2000

The *Water Management Act, 2000* contains provisions for the licensing, allocation, capture and use of water resources.

Under the *Water Management Act, 2000*, water sharing plans establish rules for sharing water between different users and between the various environmental sources (namely rivers or aquifers).

The Modification would not change water licencing requirements for the Moolarben Coal Complex. MCO would continue to obtain and hold licences required under the *Water Management Act, 2000*.

Biodiversity Conservation Act, 2016

The Biodiversity Conservation Act, 2016 (BC Act) came into effect in NSW in August 2017 and replaces the *Threatened Species Conservation Act, 1995*.

The status of threatened species and community listings as per the BC Act has been considered in the Biodiversity Development Assessment Report (Appendix B).

Ecological Australia (ELA) (2019) prepared the Biodiversity Development Assessment Report in accordance with the *Biodiversity Assessment Method* (OEH, 2017).

Roads Act, 1993

Under section 138 of the *Roads Act, 1993,* consent from the appropriate roads authority is required to:

- erect a structure or carry out a work in, on or over a public road; or
- dig up or disturb the surface of a public road; or
- remove or interfere with a structure, work or tree on a public road; or
- pump water into a public road from any land adjoining the road; or
- connect a road (whether public or private) to a classified road.

MCO would separately seek approval under section 138 of the *Roads Act, 1993* for the proposed new intersection with Ulan Road and any other works associated with the Modification within Road Corridors.

4.3.2 Environmental Planning Instruments

State environmental planning policies and local environmental plans that may be relevant to the Modification are discussed below.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

The *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP) imposes planning controls to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources.

Part 3 of the Mining SEPP outlines some of the matters to be considered when determining development applications (noting that State Environmental Planning Policies are but one of a number of considerations that are required to be taken into account). Relevant clauses of the Mining SEPP are discussed further below.

Clause 2

Clause 2 sets out the aims of the Mining SEPP as follows:

> *(a) to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State, and*
>
> *(b) to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources, and*
>
> *(b1) to promote the development of significant mineral resources, and*
>
> *(c) to establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources, and*
>
> *(d) to establish a gateway assessment process for certain mining and petroleum (oil and gas) development—*
>
> *(i) to recognise the importance of agricultural resources, and*
>
> *(ii) to ensure protection of strategic agricultural land and water resources, and*
>
> *(iii) to ensure a balanced use of land by potentially competing industries, and*
>
> *(iv) to provide for the sustainable growth of mining, petroleum and agricultural industries.*

Clause 7

Clause 7(1) (a) and (b) of the Mining SEPP states that development for any of the following purposes may be carried out only with development consent:

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

The Modification would be carried out on land where industry or agriculture may be carried out under the *Mid-Western Regional Local Environmental Plan 2012* (MWR LEP).

Clause 12 and Clause 13

Clauses 12 and 13 of the Mining SEPP require that, before determining an application for consent the consent authority must consider the following:

> ***12 Compatibility of proposed mine, petroleum production or extractive industry with other land uses***
>
> *(a) consider—*
>
> *(i) the existing uses and approved uses of land in the vicinity of the development, and*
>
> *(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and*
>
> *(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and*
>
> *(b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a) (i) and (ii), and*

(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).

13 Compatibility of proposed development with mining, petroleum production or extractive industry

…

(2) (a) consider—

(i) the existing uses and approved uses of land in the vicinity of the development, and

(ii) whether or not the development is likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials (including by limiting access to, or impeding assessment of, those resources), and

(iii) any ways in which the development may be incompatible with any of those existing or approved uses or that current or future extraction or recovery, and

(b) evaluate and compare the respective public benefits of the development and the uses, extraction and recovery referred to in paragraph (a) (i) and (ii), and

(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).

As the Modification would facilitate safe and efficient mining of the approved UG4 area, the Modification is considered compatible with existing and approved land uses.

Public benefits of the Modification include ongoing employment at the Moolarben Coal Complex and ongoing expenditure in the local and regional economies.

The potential impact of the Modification on surrounding land uses are described in Appendices A to H and summarised in Section 6.

MCO would, where practicable, implement a range of measures to avoid or minimise incompatibility of the Modification with existing and future land uses in the area.

Clause 14

Clause 14(1) of the Mining SEPP requires that, before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the approval should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner, including conditions to ensure the following:

(a) that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable,

(b) that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable,

(c) that greenhouse gas emissions are minimised to the greatest extent practicable.

In addition, clause 14(2) requires that, without limiting clause 14(1), in determining a development application for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions.

The potential impact of the Modification on surface water and groundwater resources are described in Sections 6.3 and 6.7, along with measures to minimise potential impacts.

The potential impact of the Modification on threatened species and biodiversity are described in Section 6.2, along with measures to avoid and minimise potential impacts.

The potential changes in annual greenhouse gas emissions associated with the Modification and associated measures to minimise greenhouse gas emissions at the Moolarben Coal Complex are described in Section 6.8.4. The Modification would not result in any change to scope 3 emissions associated with the combustion of the coal approved to be produced at the Moolarben Coal Complex.

Clause 15

Clause 15 of the Mining SEPP requires that:

> *(1) Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider the efficiency or otherwise of the development in terms of resource recovery.*
>
> *(2) Before granting consent for the development, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at optimising the efficiency of resource recovery and the reuse or recycling of material.*
>
> *(3) The consent authority may refuse to grant consent to development if it is not satisfied that the development will be carried out in such a way as to optimise the efficiency of recovery of minerals, petroleum or extractive materials and to minimise the creation of waste in association with the extraction, recovery or processing of minerals, petroleum or extractive materials.*

The Modification would facilitate safe and efficient recovery of underground coal, with no material change to potential environmental impacts.

Clause 16

Clause 16(1) of the Mining SEPP requires that, before granting consent for development for the purposes of mining that involves the transport of materials, the consent authority must consider whether or not the consent should be issued subject to conditions that do any one or more of the following:

> *(a) require that some or all of the transport of materials in connection with the development is not to be by public road,*
>
> *(b limit or preclude truck movements, in connection with the development, that occur on roads in residential areas or on roads near to schools,*
>
> *(c require the preparation and implementation, in relation to the development, of a code of conduct relating to the transport of materials on public roads.*

The Modification would involve some transport of construction material to the Moolarben Coal Complex modification and open cut mining areas on public roads. The Modification would result in redistribution of some materials deliveries to the remote services infrastructure area and ventilation shaft compound. There are no residential areas or schools along the proposed transport route between the Modification areas and the Moolarben Coal Complex open cuts.

Clause 17

Clause 17 of the Mining SEPP requires that, before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the approval should be issued subject to conditions aimed at ensuring the rehabilitation of land that will be affected by the development.

In particular, the consent authority must consider whether conditions of the consent should:

> *(a) require the preparation of a plan that identifies the proposed end use and landform of the land once rehabilitated, or*
>
> *(b) require waste generated by the development or the rehabilitation to be dealt with appropriately, or*
>
> *(c) require any soil contaminated as a result of the development to be remediated in accordance with relevant guidelines (including guidelines under section 145C of the Act and the Contaminated Land Management Act 1997), or*
>
> *(d) require steps to be taken to ensure that the state of the land, while being rehabilitated and at the completion of the rehabilitation, does not jeopardize public safety.*

The rehabilitation strategy for the Moolarben Coal Complex, incorporating the Modification, is presented in Section 7.

The approved rehabilitation objectives for the Moolarben Coal Complex would continue for the Modification.

The Rehabilitation Management Plan and MOP would be revised to incorporate the Modification.

State Environmental Planning Policy No 44 (Koala Habitat Protection)

The *State Environmental Planning Policy No 44 (Koala Habitat Protection)* (SEPP 44) requires the consent authority for any development application in certain LGAs to consider whether land subject to the application is "potential Koala habitat" or "core Koala habitat".

ELA (2019) considers the Modification area comprises potential Koala habitat, but does not comprise core Koala habitat (Appendix B).

A consent authority is therefore not prevented from granting consent to the Modification under SEPP 44.

Mid-Western Regional Local Environmental Plan 2012

The Moolarben Coal Complex is located wholly within the Mid-Western Regional LGA and is covered by the Mid-Western Regional Local Environmental Plan 2012 (MWR LEP).

Clause 2.3(2) of the MWR LEP relevantly provides:

> *The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.*

The Modification would occur on Land Zones RU1 (Primary Production) and E3 (Environmental Management). The Modification is classified as being 'permitted with consent' as outlined in the land-use objectives of the MWR LEP

In addition, the approved Stage 1 of the Moolarben Coal Complex was considered by the relevant consent authorities to be consistent with the land-use objectives of the MWR LEP.

4.4 COMMONWEALTH LEGISLATION

4.4.1 Environment Protection and Biodiversity Conservation Act 1999

The Stage 1 operations are approved to be undertaken in accordance with Approval Decisions (EPBC 2007/3297) granted on 24 October 2007, (EPBC 2013/6926) granted on 13 November 2014 and (EPBC 2017/7974) granted on 6 September 2019 under the EPBC Act.

The potential impacts of the Modification on flora and fauna have been assessed in Appendix B and summarised in Section 6.2. The assessment indicates that there would be no significant impact on threatened species, populations and communities, and migratory species listed under the EPBC Act as a result of the Modification.

The potential impacts of the Modification on water resources have been assessed in Appendices C, G and H and summarised in Sections 6.3 and 6.7. These assessments indicate that there would be no significant impact on water resources as a result of the Modification.

Notwithstanding the above, MCO would refer the Modification to the Commonwealth Department of the Environment and Energy to determine whether assessment and approval by the Commonwealth is required.

Objects of the EPBC Act

Section 3 of the EPBC Act describes the objects of the EPBC Act as follows:

> *(1) The objects of this Act are:*
>
> *(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and*
>
> *(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and*
>
> *(c) to promote the conservation of biodiversity; and*
>
> *(ca) to provide for the protection and conservation of heritage; and*
>
> *(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples; and*
>
> *(e) to assist in the co-operative implementation of Australia's international environmental-responsibilities; and*
>
> *(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and*
>
> *(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.*

The Modification is considered to be generally consistent with the objects of the EPBC Act, because it is a Modification that:

- incorporates a range of measures for the protection of the environment, including listed threatened species and ecological communities, water resources and heritage (Section 6);
- incorporates relevant ecologically sustainable development (ESD) considerations (refer below);
- includes the involvement and participation of the community, landholders and Indigenous people through the ongoing operational consultation and consultation regarding the Modification (Section 5), the public exhibition of the Modification Report and DPIE assessment of the Modification in accordance with the requirements of the EP&A Act;

- would not result in a significant impact on migratory species protected under international agreements; and
- includes the involvement of Registered Aboriginal Parties through the Heritage Management Plan.

Ecologically Sustainable Development

If the Modification is determined to be a Controlled Action, in deciding whether or not to approve the proposed Action, the Commonwealth Minister must take into account the principles of ESD pursuant to section 136(2) of the EPBC Act. The relevant definition of the principles of ESD is provided in section 3A of the EPBC Act.

The objects of the EP&A Act also require encouragement of ESD. Section 6(2) of the NSW *Protection of the Environment Administration Act, 1991* provides a definition of ESD.

The principles of ESD as outlined in section 3A of the EPBC Act and clause 7(4) of Schedule 2 of the EP&A Regulation are presented and compared in Table 3.

Table 3
Principles of Ecologically Sustainable Development – EPBC Act and EP&A Regulation

Section 3A of the EPBC Act	Clause 7(4) of Schedule 2 of the EP&A Regulation
(a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;	-
(b) 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;	*(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,*
(c) the principle of inter-generational equity—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;	*(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,*
(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;	*(c) conservation of biological diversity and ecological integrity, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*
(e) improved valuation, pricing and incentive mechanisms should be promoted.	*(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.*

The design, planning and assessment of the Modification have been carried out applying the principles of ESD, through:

- incorporation of risk assessment and analysis at various stages in the Modification design, environmental assessment and decision-making;
- adoption of high standards for environmental and occupational health and safety performance;
- consultation with regulatory and community stakeholders;
- assessment of potential greenhouse gas emissions associated with the Modification; and
- optimisation of the economic benefits to the community, arising from the development of the Modification.

In addition, it can be demonstrated that the Modification can be undertaken in accordance with ESD principles through the application of measures to avoid, mitigate and offset the potential environmental impacts of the Modification.

The following sub sections describe the consideration and application of the principles of ESD to the Modification.

Precautionary Principle

Environmental assessment involves predicting the likely environmental outcomes of a development. The precautionary principle reinforces the need to take risk and uncertainty into account, especially in relation to threats of irreversible environmental damage.

An Assessment of Impacts (Section 6 and Appendices A to H) has been prepared to identify potential impacts associated with the Modification and to develop appropriate mitigation measures and strategies.

Minimal uncertainty regarding the information used in the Assessment of Impacts is expected, given:

- the period of operational experience and number of site-based surveys and assessments conducted at the Moolarben Coal Complex to date;
- the comprehensive nature of the assessments; and
- the consultation process conducted with key stakeholders (Section 5).

Mitigation and management measures would continue to be adopted for the Modification to minimise the potential for serious and/or irreversible damage to the environment, including:

- physical controls (e.g. avoidance of impacts);
- operational controls (e.g. the Vegetation Clearance Protocol);
- the implementation of environmental management and monitoring programs (Section 6); and
- identification of contingency measures and controls (Section 6).

Social Equity

Social equity is defined by inter-generational 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:

- the continued use of existing infrastructure and workforce;
- ongoing socio-economic benefits associated with employment and stimulus to the local and regional economies;
- implementation of management measures and monitoring programs in relation to the potential impacts of the Modification on ecology, heritage, noise, air quality and water resources (Section 6);
- design of the Modification to maintain the biodiversity values of the region in the medium to long term with progressive rehabilitation and the ongoing implementation of the biodiversity offset strategy; and
- continued contributions to the local community through ongoing support for community initiatives.

Conservation of Biological Diversity and Ecological Integrity

Biological diversity or 'biodiversity' is considered to be the number, relative abundance, and genetic diversity of organisms from all habitats (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 (Lindenmayer and Burgman, 2005).

The assessment in Section 6.2 (and Appendix B) describes the potential impacts of the Modification on local and regional biodiversity.

The Modification addresses the conservation of biodiversity and ecological integrity by proposing that a range of impact avoidance and mitigation measures would be implemented for the Modification to maintain or improve the biodiversity values of the surrounding region in the medium- to long term, as described in Section 6.2 and Section 7.

Valuation

One of the common broad underlying goals or concepts of sustainability is economic efficiency, including improved valuation of the environment.

Consideration of economic efficiency, with improved valuation of the environment, aims to overcome the underpricing of natural resources and has the effect of integrating economic and environmental considerations in decision-making, as required by ESD.

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

Direct environmental costs at the Moolarben Coal Complex are internalised through the adoption and funding of mitigation measures by MCO to mitigate potential environmental impacts; for example, implementation of dust mitigation measures, securing water entitlements, progressive rehabilitation, the purchase of offset properties and the retirement of biodiversity credits.

5 ENGAGEMENT

5.1 CONSULTATION

MCO consults with relevant State Government agencies on a regular basis in regard to the approved Moolarben Coal Complex.

Consultation for the Modification has been conducted with key State and Commonwealth Government agencies, local councils, asset owners, affected landowners, the local community, Aboriginal stakeholders and neighbouring mines during the preparation of this Modification Report. A summary of consultation to date is provided below. Consultation will continue during both the public exhibition of this Modification Report and the assessment of the Modification.

Department of Planning, Industry & Environment

Briefings with the DPIE were conducted in July and September 2019 to provide an overview of the proposed Modification, approvals pathway and proposed scope of environmental assessment.

Regulatory Agencies and Local Council

MCO consulted with the following regulatory authorities, providing an overview description of the Modification and proposed scope of environmental assessment:

- NSW Division of Resources and Geoscience (DRG);
- Resources Regulator;
- NSW Environment Protection Authority (EPA);
- DPIE – Biodiversity and Conservation Division (formally OEH);
- Natural Resources Access Regulator (NRAR);
- National Parks and Wildlife Services (NPWS);
- Crown Lands;
- NSW Roads and Maritime Services (RMS); and
- Mid-Western Regional Council (MWRC).

Neighbouring Mines

No direct interaction between the Modification and the neighbouring Ulan Mine Complex and Wilpinjong Coal Mine is expected (i.e. beyond the currently approved Moolarben Coal Complex).

Potential cumulative impacts with the Ulan Mine Complex and Wilpinjong Coal Mine have been considered where relevant in this Modification Report.

Notwithstanding, MCO consulted with Ulan Coal Mines Limited (UCML) and Wilpinjong Coal Pty Ltd (WCPL) to provide an overview of the Modification.

Asset Owners

MCO sent briefing letters providing an overview description of the Modification to the following asset owners, which have an interest in the lands relevant to the Modification:

- Dronvisa;
- Santos NSW Pty Ltd;
- Tilt Renewables Limited;
- Hunter Gas Pty Limited;
- Bowdens Silver Pty Limited;
- Telstra;
- Essential Energy; and
- MWRC.

Registered Aboriginal Parties

MCO consulted with Registered Aboriginal Parties (RAPs) as part of the Aboriginal Cultural Heritage Assessment (ACHA) prepared for the Modification. A copy of the proposed methodology was provided to the RAPs for comment on 3 July 2019 and the draft ACHA was provided on 23 August 2019. Comments received from the RAPs were incorporated into the final ACHA (Appendix A).

5.1.1 Community Consultation

Local Community

The current Community Consultative Committee (CCC) was established in accordance with both Project Approvals (05_0117 and 08_0135) in March 2015.

The CCC provides a mechanism for ongoing communication between MCO and the local community. MCO briefed the CCC in September 2019, providing an overview of the Modification and proposed scope of environmental assessment.

MCO also engaged directly with potentially affected landholders to provide a briefing on the activities proposed as part of the Modification.

Public Consultation

The MCO website (www.moolarbencoal.com.au) provides up to date information on the Moolarben Coal Complex, and provides access to relevant environment and community information, including Modification Report documents, compliance reports and approval documents.

The Moolarben Coal Complaints Hotline (1800 556 484) allows members of the public to contact MCO with enquiries or complaints.

A copy of this Modification Report will be made available on the Moolarben Coal website.

5.2 KEY COMMENTS AND CONCERNS

A number of comments/concerns were raised by members of the CCC and affected landholders during consultation for the Modification. A summary of these comments is provided in Table 4, along with a description of where in the Modification Report these issues have been addressed, and a brief response demonstrating how the concern has been considered and addressed.

Table 4
Summary of Comments Raised by the CCC and Affected Landholders

Summary of Comment	Relevant Section of the Modification Report	Response Summary
Proximity of dewatering sites to The Drip and the Goulburn River.	Sections 6.3, 6.7 and 6.8.1 and Appendices C, D and H	The Modification does not involve changes to underground mining layout (i.e. no additional impact to groundwater beyond the already approved mining and associated dewatering). Groundwater take associated with the approved UG4 mining operations will be appropriately licensed under the requirements of the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009* and the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources*. The disturbance areas associated with the Modification are small and would be managed using suitable best practice measures in accordance with Landcom (2004) and the Surface Water Management Plan.
Disturbance of existing offsets and identifying suitable replacement offset.	Section 6.2 and Appendix B	MCO would provide a replacement offset that contains the same vegetation communities (in a similar, or better condition) as those being removed by the Modification within Offset Area 2. An additional offset would also be provided to account for the minor increase in disturbance.
Proximity of the remote services infrastructure area to watercourses and the potential for spills.	Sections 6.3 and 6.8.1 and Appendices C and D	The disturbance areas associated with the Modification are small and would be managed using suitable best practice measures in accordance with Landcom (2004) and the Surface Water Management Plan. MCO would continue to implement surface water monitoring, mitigation and management measures in accordance with the Surface Water Management Plan, which would be reviewed and updated to incorporate the Modification.
Proposed impacts to the heritage site at Bora Creek and whether it is possible to avoid this impact.	Section 6.1 and Appendix A	Disturbance associated with the Bora Creek crossing has been minimised as far as possible. Potential impacts to the heritage site would be managed consistent with the existing Heritage Management Plan. The Heritage Management Plan would be reviewed and updated to incorporate the Modification (e.g. to include additional sites identified during the July 2019 survey). MCO would continue to liaise with the RAPs throughout surface disturbance activities for the Modification.
The portions of the access track and services corridor that have not been subject to heritage surveys prior to submission of the Modification Report.	Section 6.1 and Appendix A	The portion of the access track and services corridor that was not surveyed was determined by Niche (2019) to be likely to have identical archaeological character as the adjacent area, which was subject to detailed surveys. In addition, this area would be subject to additional surveys prior to the construction of the proposed access track and services corridor.
Impacts to Saddlers Creek Road Reserve on visual amenity	Section 6.8.1	The northern dewatering site services corridor has been located adjacent to Saddlers Creek Road to minimise the extent of disturbance.
Condition of Saddlers Creek Road during construction.	Section 6.6.3	Affected parts of Saddlers Creek Road will be repaired/maintained as required during construction works of the northern dewatering sites and services corridor.

6 ASSESSMENTS OF IMPACTS

The following sub-sections present the environmental assessment for the Modification, including a description of the existing environment, an assessment of the potential impacts of the Modification on the environment, and where relevant, a description of the measures that would be implemented to avoid, minimise, mitigate and/or offset the potential impacts.

6.1 ABORIGINAL HERITAGE

An ACHA was prepared for the Modification by Niche Environment and Heritage Pty Ltd (Niche) (2019) and is presented in Appendix A.

6.1.1 Background

The ACHA for the Modification has been undertaken in consideration of the following codes, guidelines and regulations (Appendix A):

- *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005);
- *Aboriginal cultural heritage consultation requirements for proponents* (DECCW, 2010a);
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b);
- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010c);
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011);
- *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS, 2013);
- *NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects* (NSW Minerals Council, 2010);
- *Engage Early – Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environmental Protection and Biodiversity Act, 1999* (EPBC Act) (Commonwealth Government, 2016); and
- NSW *National Parks and Wildlife Regulation 2009* (NPW Regulation).

Previous Archaeological Investigations

A number of Aboriginal heritage surveys and assessments have previously been undertaken for Stages 1 and 2 of the Moolarben Coal Project, including:

- Hamm (2006, 2008 and 2009), AECOM (2013), South East Archaeology (2013); and
- Niche (2015a, 2015b, 2017a, 2017b and 2017c).

A detailed description of previous archaeological assessments and surveys undertaken at the Moolarben Coal Complex and surrounds is provided in Appendix A.

Aboriginal sites identified at the Moolarben Coal Complex and surrounds include artefact scatters, isolated finds, grinding grooves and rock shelters (with or without artefacts, art and/or potential archaeological deposits).

Aboriginal Cultural Heritage Management

The management of Aboriginal heritage at the Moolarben Coal Complex is currently conducted in accordance with the measures outlined in the approved Heritage Management Plan.

6.1.2 Environmental Review

Consultation and Assessment Programme

The ACHA prepared for the Modification included consultation with eight RAPs, identified via a previous registration process consistent with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010a) (Appendix A).

Consultation with RAPs regarding the existing Moolarben Coal Complex has been extensive and involved various methods of communication including meetings, written and verbal correspondence, archaeological survey attendance and site inspections.

A detailed description of the consultation undertaken with the RAPs for the Modification is provided in Appendix A.

An Aboriginal Heritage Information Management System (AHIMS) search was undertaken on 12 April 2019 and 6 August 2019 (Appendix A) for the Modification area and surrounds.

Based on the AHIMS search and the Moolarben Coal Complex Aboriginal Heritage Sites Database, six previously recorded Aboriginal sites are located within the vicinity of the Modification area (S1MC278, S1MC230, S1MC426, Ulan ID #86, Ulan ID #87 and S1MC357) (Figure 8). The previously recorded sites are all open sites containing stone artefacts, which is typical for the local area.

Field surveys within the Modification area were undertaken by Niche (2019) on 22 and 23 July 2019 with participation by representatives of the RAPs, including Mudgee Local Aboriginal Land Council and Murong Gialinga Aboriginal and Torres Strait Islanders (i.e. consistent with the protocols outlined in the Heritage Management Plan).

The survey provided an opportunity to inspect areas for open sites, and to inspect ridge slopes and tops for closed sites such as rock shelters and overhangs.

Archaeological Findings

Two new Aboriginal heritage sites were identified in the Modification area during the surveys: these were comprised of isolated artefacts S1MC460 and S1MC461. Two previously recorded sites were relocated, comprising an isolated find (S1MC278) and artefact scatter (S1MC230). In addition, an isolated artefact (S1MC357) has been previously identified within the proposed Modification Footprint (Appendix A).

Detailed descriptions of these sites are presented in the ACHA (Appendix A).

Archaeological and Cultural Heritage Values

Of the five known sites within the Modification area (three previously recorded and two recently recorded), one site has been assessed as being of high scientific significance (S1MC230), while the other four sites have been assessed as having low scientific significance (S1MC357, S1MC460, S1MC461 and S1MC278) (Appendix A). It is noted that site S1MC230 has been previously subject to surface salvage works (Appendix A).

The locations of these sites are shown on Figure 8.

Overall the subject area has low cultural heritage value, an exception being the Bora Creek area which is of high value due to the high number of sites, high number and diversity of artefacts present, and sub-surface potential. Previous assessments and surveys have identified and documented cultural values for the Moolarben Coal Complex and surrounds, which are summarised in Appendix A.

Potential Direct Impacts

Findings from the July 2019 surveys have been used to inform the proposed locations of infrastructure for the Modification, with identified heritage sites avoided where possible.

The final extent of surface disturbance for the Modification has the potential to directly impact five Aboriginal heritage sites (S1MC460, S1MC461, S1MC278, S1MC230 and S1MC357) (Figure 8).

The consequences of harm are assessed as a "partial loss of value", as the sites would be managed (i.e. salvaged) as detailed in the Heritage Management Plan, thereby salvaging some heritage value and resulting in a partial loss of value.

Potential Indirect Impacts

The northern dewatering site and associated access track and services corridor sits in close proximity to the rockshelter sites S1MC289, S1MC290, S1MC294 and the open artefact site S1MC291. The area of the dewatering sites has been previously disturbed without adverse indirect impacts to these sites and it is expected there would be no harm as a result of the Modification.

Other potential indirect impacts, such as accidental disturbance by peripheral activities, and inappropriate visitation of known Aboriginal cultural heritage sites, would be avoided and managed as per the protocols of the existing Heritage Management Plan.

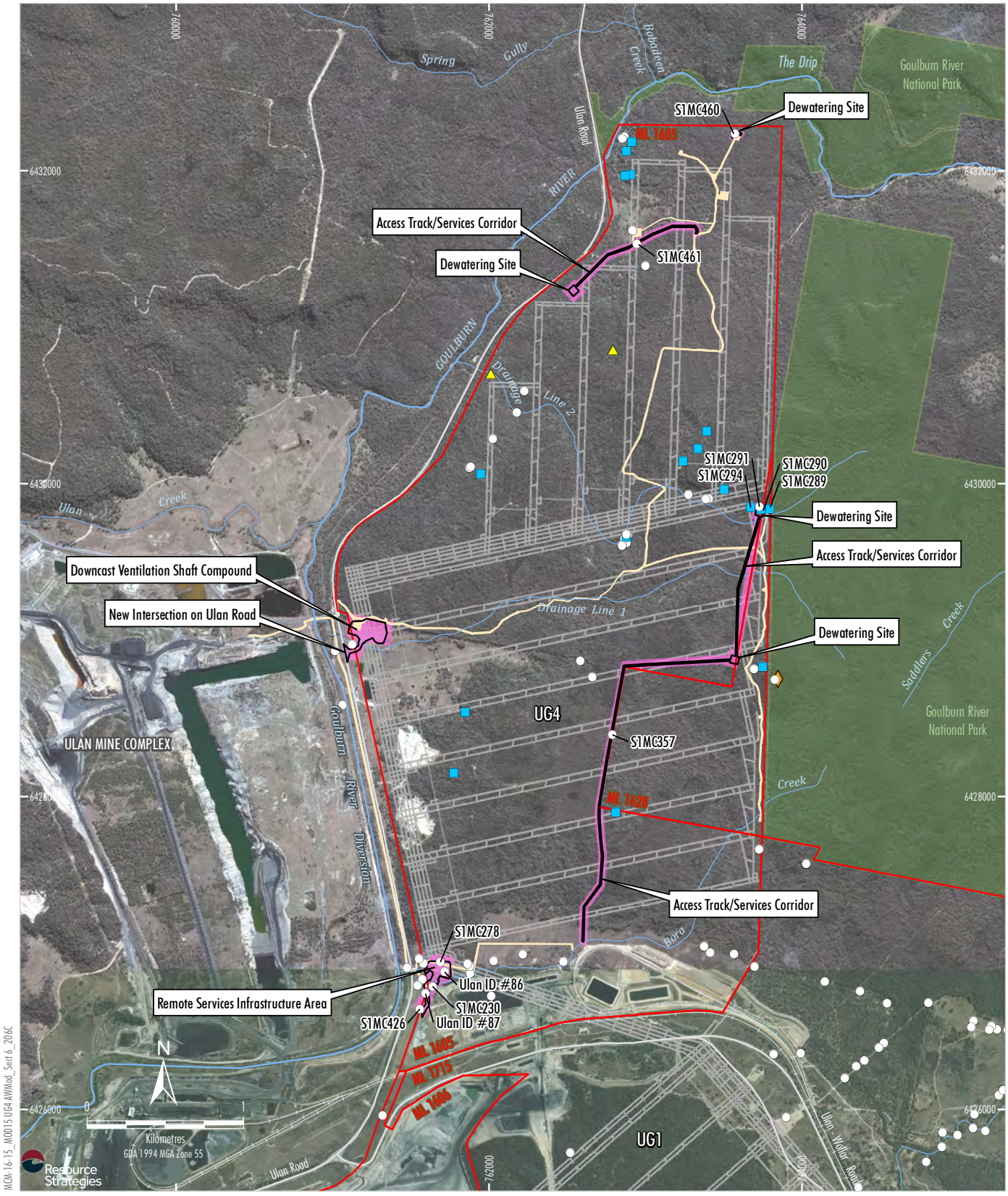
6.1.3 Management and Mitigation Measures

MCO would implement the management and mitigation measures described in Appendix A, which are consistent with the protocols of the Heritage Management Plan.

The Heritage Management Plan would be reviewed and updated to incorporate the Modification (e.g. to include additional sites identified during the July 2019 survey).

Previously unrecorded Aboriginal heritage sites identified during the Modification will be managed consistent with the requirements outlined in the Heritage Management Plan.

MCO would continue to liaise with the RAPs throughout surface disturbance activities for the Modification.



MCH-16-15_MOD15 UG4 AWMod_Sect 6_206C

LEGEND

Mining Lease Boundary

Existing/Approved Development

Underground Longwall Layout

Pipeline and Borefield Infrastructure

UG4 Ancillary Works Modification

ACHA Field Survey Study Area

Indicative Surface Infrastructure Area

Aboriginal Heritage Sites

Open Artefact Scatter with or without PAD

Grinding Grooves with or without Artefact Scatter

Rockshelter with or without Art, Grinding Grooves, Artefacts or PAD

Potential Archaeological Deposit (PAD)

Source: MCO (2019); NSW Dept of Industry (2019); NSW Land & Property Information (2017); Office of Environment and Heritage NSW (2019); Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBENCOAL

MOOLARBEN COAL COMPLEX

Recorded Aboriginal Cultural Heritage Sites

Figure 8

6.2 BIODIVERSITY

A Biodiversity Development Assessment Report (BDAR) has been prepared by ELA (2019) in accordance with the *Biodiversity Assessment Method* (BAM) (OEH, 2017) and is presented in Appendix B.

The BAM (OEH, 2017) requires the use of an online program, i.e. the BAM *Credit Calculator for Major Projects and BioBanking* (the Credit Calculator) to assess biodiversity impacts and determine the biodiversity offset requirements for those impacts.

6.2.1 Background

The Modification area is located within the (Appendix B):

- Sydney Basin Interim Biogeographic Regionalisation for Australia (IBRA) Region;
- Kerrabee IBRA subregion; and
- Lees Pinch Foothills, Talbragar-Upper Macquaire Terrance Sands and Gravel Slopes, Upper Gouldburn Valley and escarpments, and Goulburn River channels and floodplains (Mitchell Landscapes).

Land use in the region outside of conservation areas is dominated by rural landholdings, agriculture, mining, and proposed biodiversity conservation areas associated with the Moolarben Coal Complex and neighbouring mines.

Surveys for the Modification

Specific flora surveys were conducted in the Modification area and surrounds to identify the Plant Community Types (PCTs) and target potentially occurring threatened flora species and ecological communities. These surveys were undertaken in August 2018 and July 2019 by ELA.

Fauna surveys were undertaken in August, September, October and November 2018, and July and August 2019. Survey techniques included habitat search, remote and infrared camera traps, random meander, call playback, spotlighting and scat and signs search.

Vegetation Communities

ELA (2019) mapped three PCTs within the Modification area, comprising a total of approximately 10 ha.

These include (Figure 9):

- Rough-Barked Apple – Red Gum – Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion (PCT 281);
- Narrow-leaved Ironbark – Black Cypress Pine – stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion (PCT 479);
- Tantoon – Lepyroodia leptocaulis shrubland on sandstone drainage lines of the Sydney Basin (PCT 1711).

Other areas within the Modification area were either degraded land dominated by exotic species or previously cleared land. These areas did not conform to a native PCT.

Threatened Flora Species and Populations

No threatened flora species or populations listed under the BC Act and/or EPBC Act have been recorded within the Modification areas (Appendix B).

One flora species, *Tylophora linearis*, could not be surveyed during the required timing outlined in the Bionet Database. Although ELA (2019) determined that this species is unlikely to occur, *Tylophora linearis* was conservatively assumed to be present for the purposes of the Credit Calculator and the Offset Strategy (Appendix B).

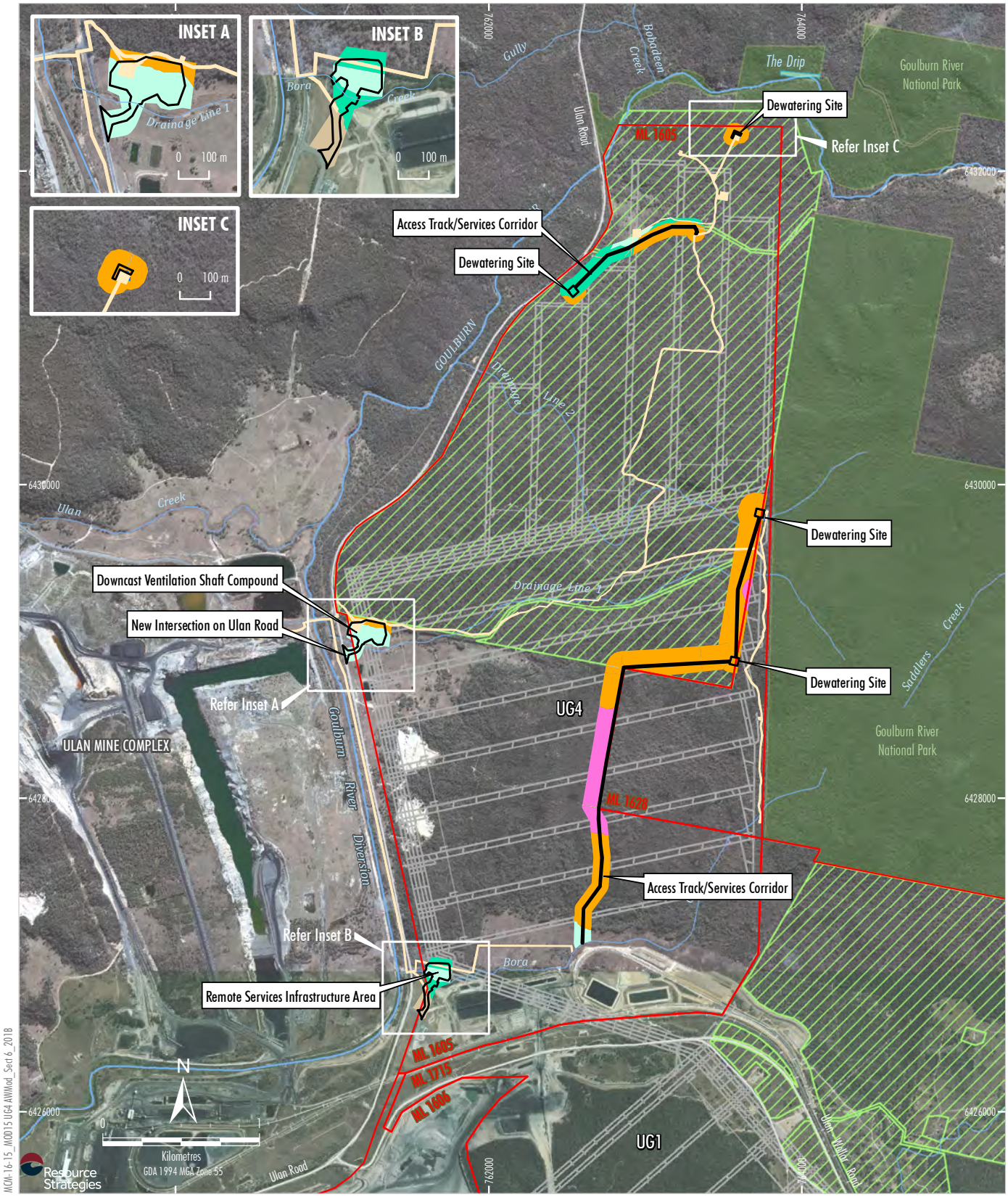
Threatened Ecological Communities

One threatened ecological community (represented by PCT 281) was identified within the Modification area, namely the *White Box Yellow Box Blakely's Red Gum Woodland* (Endangered under the BC Act and Critically Endangered under the EPBC Act[1]) (Box Gum Woodland) (Figure 10).

The condition of this community varies within the Modification area. While the areas of PCT 281 in low, moderate and good condition conform to the listing under the BC Act, only the areas of PCT 281 in good condition conform to the listing under the EPBC Act (Appendix B).

Representative photos of the threatened ecological community present within the Modification area are provided in Plates 1, 2 and 3.

[1] White Box-Yellow Box-Blakely's Red Gum Grass Woodland and Derived Native Grassland



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LEGEND

- NSW National Parks and Wildlife Service
- Mining Lease Boundary
- Existing Biodiversity Offset Area

Existing/Approved Development

- Underground Longwall Layout
- Pipeline and Borefield Infrastructure

UG4 Ancillary Works Modification

- Indicative Surface Infrastructure Area

Vegetation Community Mapping

- Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion
- Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion Grassland
- Rough-Barked Apple - Red Gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion
- Rough-Barked Apple - Red Gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion Grassland
- Tantoon - *Lepyrodia leptocaulis* shrubland on sandstone drainage lines of the Sydney Basin Cleared/Exotic Grassland

Source: MCO (2019); EcoLogical Australia (2019); NSW Department of Planning, Industry and Environment (2019) Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBEN COAL

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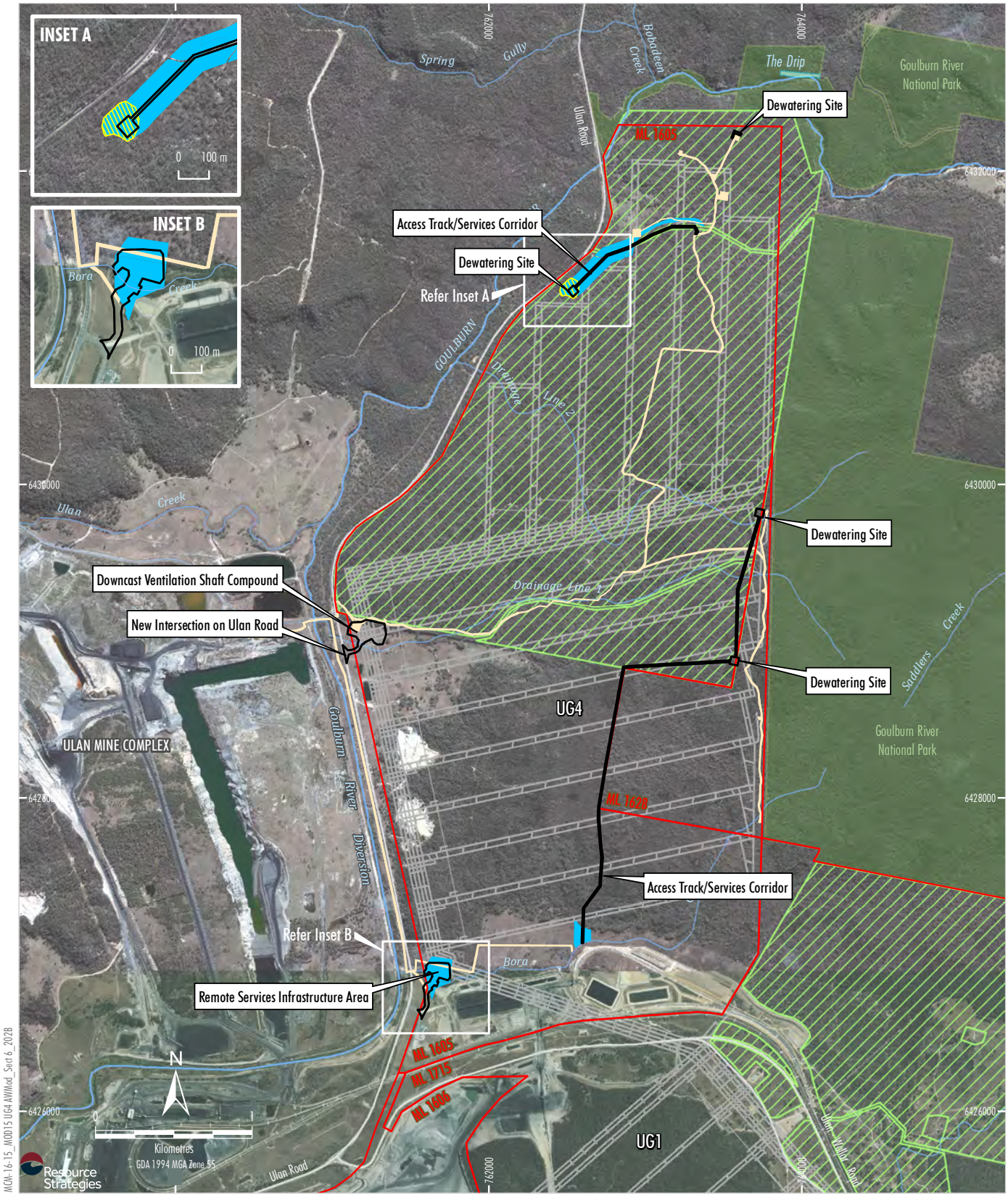
Vegetation Community Mapping

Figure 9



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LEGEND

NSW National Parks and Wildlife Service
Mining Lease Boundary
Existing Biodiversity Offset Area

Existing/Approved Development
Underground Longwall Layout
Pipeline and Borefield Infrastructure

UG4 Ancillary Works Modification
Indicative Surface Infrastructure Area

Threatened Ecological Communities
White Box Yellow Box Blakely's Red Gum Woodland and Derived Native Grassland EEC
White Box Yellow Box Blakely's Red Gum Woodland CEEC

Source: MCO (2019); EcoLogical Australia (2019); NSW Department of Planning, Industry and Environment (2019) Orthophoto Mosaic: MCO (April 2016 - May 2012)

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Threatened Ecological Communities

Figure 10

Plate 1: PCT 281 – Low Condition (listed under the BC Act)

Plate 2: PCT 281 – Moderate Condition (listed under the BC Act)

Plate 3: PCT 281 – Good Condition (listed under the BC and EPBC Acts)

Fauna Habitat

Fauna habitat in the Modification area consists of a suite of broad habitat elements including:

- exotic grassland/pasture;
- woodlands; and
- creekline and riparian habitat.

Threatened Fauna Species and Populations

The locations of threatened fauna species recorded over the UG4 mining area are shown on Figure 11.

As described in Appendix B, the Modification timeline did not allow for targeted fauna surveys to be undertaken at the required times for all potential species. As such, in addition to those species determined likely to occur, ELA (2019) has conservatively assumed that one further species credit species is present. The species credits species known/likely to occur within the Modification area include:

- Large-eared Pied Bat (*Chalinolobus dwyeri*);
- Eastern Cave Bat (*Vespadelus troughtoni*); and
- Glossy Black-Cockatoo (*Calyptorhynchus lathami*).

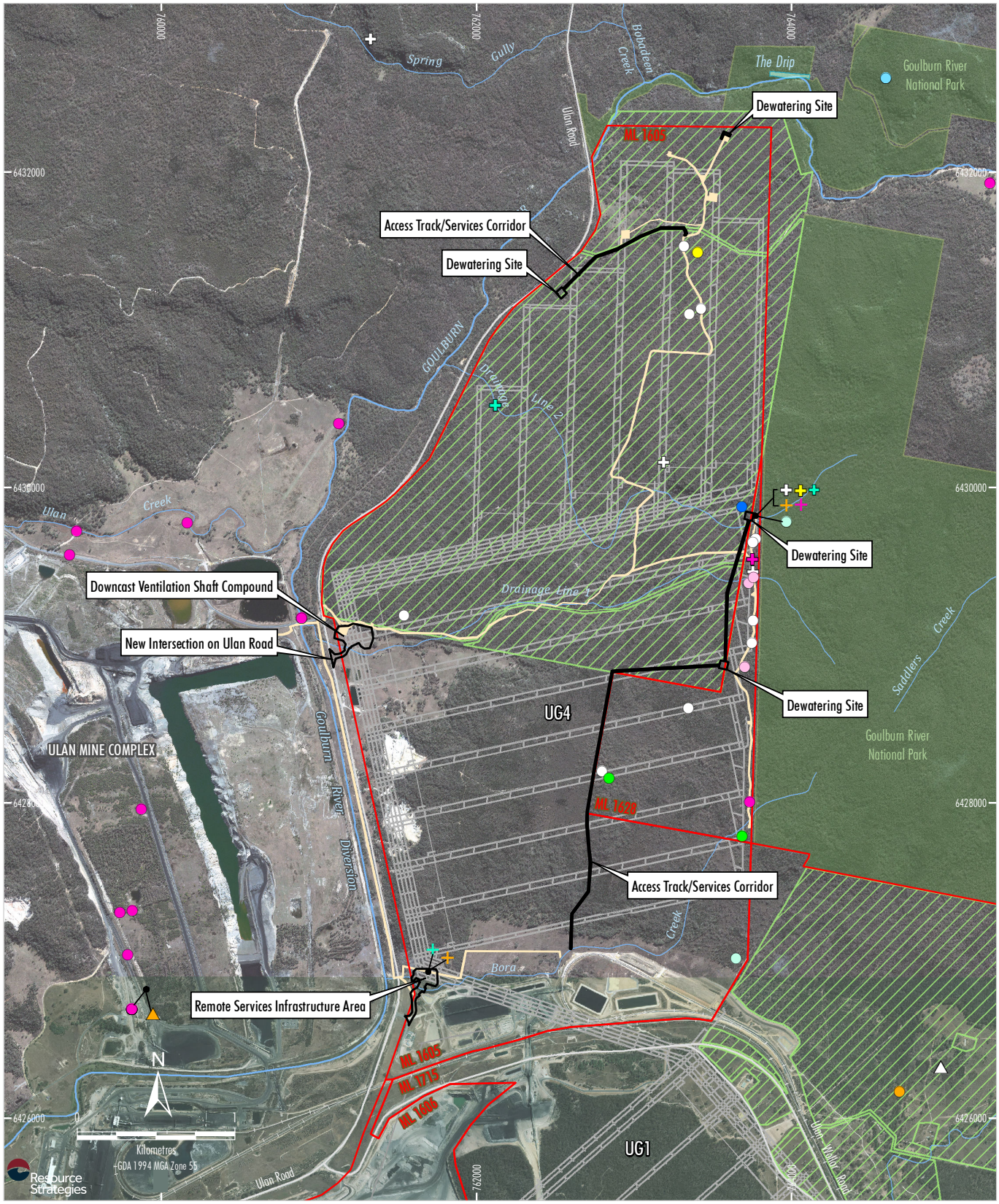
The species credits species conservatively assumed to occur within the Modification area includes the Gang-gang Cockatoo (*Callocephalon fimbriatum*).

6.2.2 Environmental Review

Potential Direct Impacts

The Modification would require the clearance of approximately 10 ha of native woodland and grassland communities in addition to approximately 2.5 ha of previously cleared vegetation. This would include approximately 2.5 ha of Box Gum Woodland (endangered ecological community [EEC] listed under the BC Act, and approximately 0.3 ha of critically endangered ecological community [CEEC]) listed under the EPBC Act.

Table 5 presents the areas of native vegetation present within the Modification area, including the areas of threatened ecological communities.



LEGEND

- NSW National Parks and Wildlife Service
- Mining Lease Boundary
- Existing Biodiversity Offset Area
- Existing/Approved Development
- Underground Longwall Layout
- Pipeline and Borefield Infrastructure
- UG4 Ancillary Works Modification
- Indicative Surface Infrastructure Area
- Threatened Fauna Species
  - New Holland Mouse
  - Koala
  - Glossy Black-cockatoo
  - Gilbert's Whistler
  - Swift Parrot
  - Dusky Woodswallow
  - Painted Honeyeater
  - Speckled Warbler
  - Varied Sittella
  - Malleefowl
  - Brown Treecreeper
  - Large-eared Pied Bat
  - Yellow-Bellied Sheath-tailed Bat
  - Corben's Long-eared Bat
  - Corben's Long-eared Bat (Potential)
  - Eastern Bentwing-bat
  - Eastern Bentwing-bat (Potential)
  - Eastern Cave Bat (Potential)

Source: MCO (2019); EcoLogical Australia (2019); Ecovision Consulting (2009); Office of Environment and Heritage NSW (2019);NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

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Threatened Fauna Species

Figure 11

Table 5
Disturbance to Native Vegetation Communities within Modification Area

PCT Number	Condition	PCT Name	EEC/CEEC	Approximate Area Being Impacted by Modification (hectare [ha])
281	Cleared	Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion	-	2.8
281	Low		Box Gum Woodland (BC Act)	1
281	Moderate			1.2
281	Good		Box Gum Woodland (BC and EPBC Acts)	0.3
			Subtotal	**5.5***
479	Low/Moderate	Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion	-	1
479	Good		-	3
			Subtotal	**4**
1711	Good	Tantoon - *Lepyrodia leptocaulis* shrubland on sandstone drainage lines of the Sydney Basin	-	**0.5**

* Number has been rounded.

Potential Indirect Impacts

Potential indirect impacts from the Modification on terrestrial biodiversity (e.g. increased sedimentation and weed occurrence) have been assessed in Appendix B. ELA (2019) concluded there would be no significant indirect impacts on biodiversity given the relatively minor nature of the works proposed as part of the Modification, and the management measures that would be implemented by MCO.

Ecosystem Credits Required

The result of running the Credit Calculator is that the Modification requires a Biodiversity Offset Strategy that accounts for a total of 111 ecosystem credits (Section 6.2.3).

Species Credits Required

The result of running the Credit Calculator is that the Modification requires a Biodiversity Offset Strategy that accounts for a total of 314 species credits (Section 6.2.3) (Appendix B).

Weed and Pest Species

The potential impacts from weed and pest species associated with the Modification are not considered to be significantly greater than those for the approved mining operations (Appendix B). Potential impacts from weed and pest species associated with the Modification would be mitigated as described in Section 6.2.3.

Threatened Species Assessments of Significance

Assessments of Significance have been prepared for the Modification in accordance with the EPBC Act *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance* on the threatened species and communities known or predicted to occur in the Modification area (Appendix B).

In summary, ELA (2019) concluded the Modification is not likely to have a significant impact on any threatened species and/or communities listed under the EPBC Act.

Disturbance within Offset Area 2

A portion of the Modification area is located within Offset Area 2, above the UG4 longwall mining area as part of the original Moolarben Coal Project (Stage 1) and EPBC 2007/3297 (Figure 9).

Of the 10 ha of native vegetation proposed to be cleared by the Modification, approximately 3.25 ha occurs within Offset Area 2 (Table 6).

Table 6
Disturbance to Native Vegetation Communities within Offset Area 2

PCT Number	Condition	PCT Name	EEC/CEEC	Area within Offset Area 2 to be Relocated (ha)
281	Cleared	Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion	-	0
281	Low		Box Gum Woodland (BC Act)	0
281	Moderate			0.5
281	Good		Box Gum Woodland (BC and EPBC Acts)	0.25
			Subtotal	**0.75**
479	Low/Moderate	Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion	-	0.75
479	Good		-	1.75
			Subtotal	**2.5**

Note: areas in this table are a subset of the areas in Table 5.

As part of the Modification, MCO would replace this portion of the existing Offset Area 2 with an equivalent area in a different location. The Replacement Offset Area is in addition to the Modification biodiversity offset and is described in Section 6.2.3.

Cumulative Impacts

The Modification would result in an additional disturbance to native vegetation of approximately 10 ha.

The change in potential cumulative impacts on threatened species and communities arising from the Modification is considered to be minimal because:

- the clearance is localised compared to the wider distribution of the species (their habitats) and communities;
- the clearance areas are discrete (i.e. are spread across numerous locations);
- the loss of approximately 10 ha of native vegetation would be short-term as the Modification involves re-establishment of native woodland/forest on mine rehabilitation (Section 7); and
- the Biodiversity Offset Strategy would compensate for the loss and increase movement corridors for genetic exchange, foraging habitat and increased breeding resources for threatened fauna species in the medium and long-term (Appendix B).

6.2.3 Avoidance, Mitigation Measures, Management and Biodiversity Offset

Avoidance

The Modification area was refined following the vegetation validation field survey and preparation of the vegetation mapping. These refinements resulted in avoidance of a threatened ecological community, namely PCT 1603, which conforms to the Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions (EEC/CEEC).

In addition, disturbance to native vegetation and fauna habitats associated with the Modification were minimised as far as practicable. This includes locating disturbance areas required for the Modification in the area of lowest biodiversity value and the use of existing infrastructure locations (e.g. existing roads, tracks and bore locations) where possible.

Mitigation and Management Measures

MCO would continue to implement management and mitigation measures at the Moolarben Coal Complex in accordance with the approved Biodiversity Management Plan, including:

- minimising clearance to the smallest extent possible in consideration of safety and engineering constraints;
- implementation of a vegetation clearance protocol including delineation of areas to be cleared, pre-clearing surveys, management of impacts to fauna, vegetation clearance procedures, collection and reuse of habitat features (where feasible);

- collection and use of locally sourced native seeds and supplementary tubestock planting;
- implementation of internal Ground Disturbance Permits, to be approved prior to the commencement of clearing activities;
- collection and stockpiling of habitat features important to threatened fauna species for reinstatement in rehabilitation areas or adjoining areas of remnant vegetation where practical and feasible;
- management measures for weeds and pests; and
- topsoil removed during construction works would be stockpiled and used in rehabilitation areas.

The Biodiversity Management Plan would be updated to incorporate the Modification.

Biodiversity Offset Strategy

The existing Biodiversity Offset Strategy for the Moolarben Coal Complex would be augmented with additional biodiversity offsets for the Modification to account for additional residual impacts on native flora and fauna.

Land-based Offset Area

MCO intends to satisfy the majority of its offset requirements for the Modification using land-based offsets.

As described in Modification 14, the Gilgal property is located to the south-east of the Modification area (Figure 12). MCO is proposing to secure this property (or a portion of it) under a Stewardship Agreement to satisfy a portion of the offset requirement for Modification 14. ELA has recently undertaken ecological surveys over the Gilgal property and calculated the number of ecosystem credits that would be available on the Gilgal property.

As demonstrated in Table 7, the Gilgal property can be used to satisfy the full ecosystem credit requirements for PCT 281 and PCT 479 for this Modification (101 credits).

Credit requirements for PCT 1711 would be retired via other available mechanisms under the *Biodiversity Offsets Scheme*.

After accounting for the credits required under Modification 14 and this Modification, the Gilgal property would still have sufficient area to compensate for the disturbance within Offset Area 2 (Table 8). MCO therefore proposes to relocate the 3.25 ha of proposed disturbance within Offset Area 2 to the Gilgal Property.

In accordance with Section 7.2.2 of the *EPBC Act Offsets Policy,* the Replacement Offset area would compensate for the impacts of the original action for which the offset was established (EPBC 2007/3297). It should be noted that the Replacement Offset Area would contain the same PCTs (in a similar, or better condition) as those being removed by the Modification within Offset Area 2 (Table 8). As such, the Replacement Offset Area is expected to provide the equivalent biodiversity values for threatened species listed under the BC and EPBC Acts.

In addition, the property is expected to provide species credits for the majority of species assumed to be present within the Modification area. Additional survey data will be used to confirm the number of species credits available on the property.

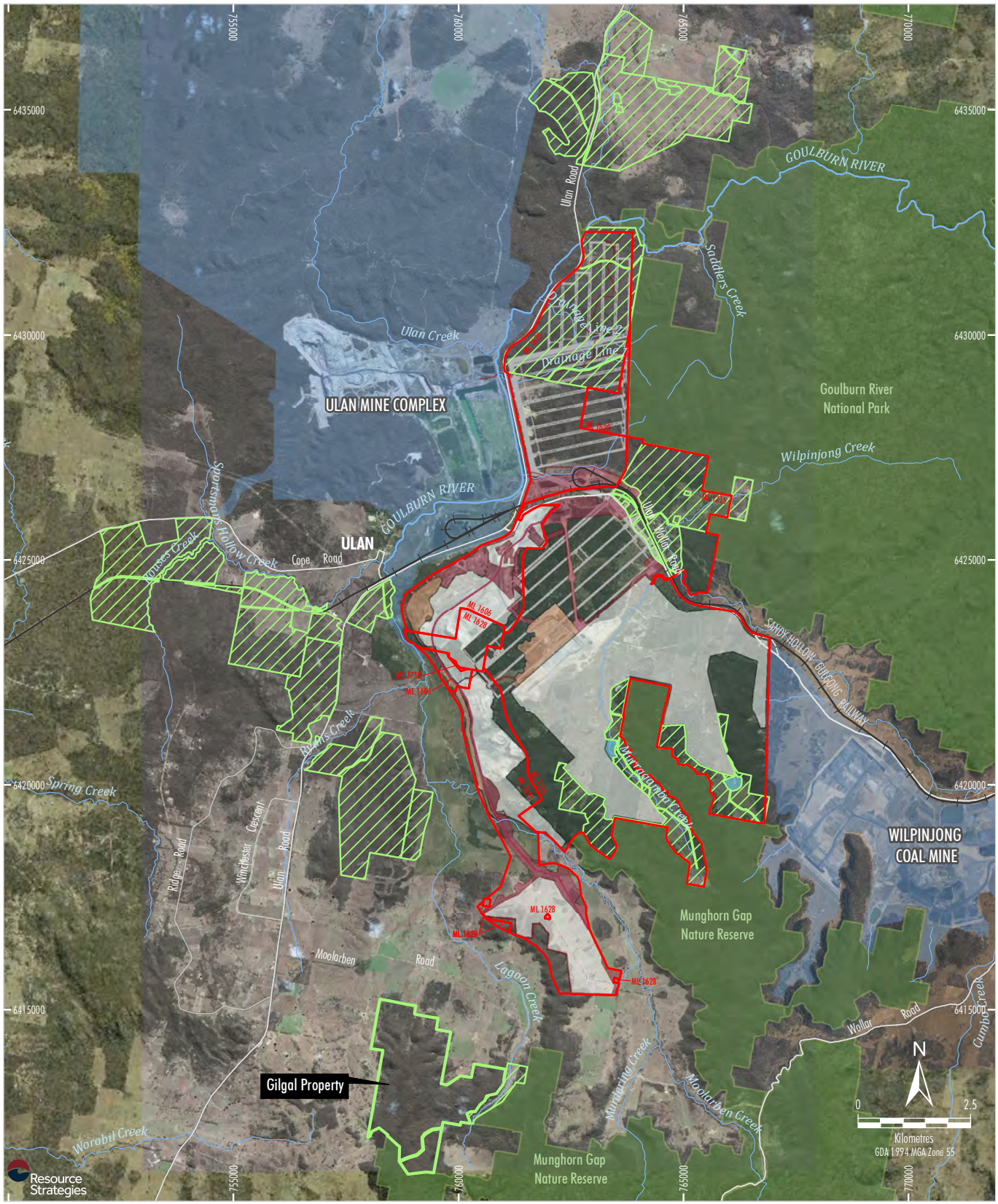
The Gilgal property also contains additional areas which would provide further credits not required by the Modification. MCO would only retire the credits needed to offset the Modification. Any excess credits would be held by MCO for future use, as required.

Rehabilitation

The *NSW Biodiversity Offsets Policy for Major Projects* (NSW Offset Policy) (OEH, 2014) (and associated BAM [OEH, 2017]) enables credits to be generated through mine site rehabilitation. MCO can generate ecosystem credits for the Modification including from establishing additional woodland/forest on the post mine landforms associated with the Modification.

Rehabilitation of the post mine landforms could, in accordance with the BAM (OEH, 2017), generate ecosystem credits to satisfy the offset requirement for PCT 1711 (and associated ecosystem credit species).

As per the additional credits associated with the Gilgal property, any credits generated by rehabilitation commitments not required for the Modification would be held by MCO for future use, as required.



LEGEND

- NSW National Parks and Wildlife Service
- Other Mining Operation
- Mining Lease Boundary

Existing/Approved Development

- Open Cut Mining Area
- Out-of-pit Emplacement
- Surface Infrastructure Area
- Clean Water Diversion Infrastructure
- Underground Longwall Layout
- Haul Road
- Road Realignment (not yet constructed)
- Existing Biodiversity Offset Area
- Proposed Offset Area

Source: MCO (2019); NSW Spatial Services (2019) Orthophoto Mosaic: MCO (April 2016 - May 2014); Department Finance, Services & Innovation (2017)

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Gilgal Property

Figure 12

Table 7
Ecosystem Credit Reconciliation for the Modification

PCT Number	Condition	PCT Name	EEC/CEEC	Area Being Impacted by Modification (ha)	Credits Required	Area available on Gilgal after Modification 14	Credits Available on Gilgal after Modification 14	Offset Liability Satisfied on Gilgal?
281	Cleared	Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion	-	2.8	0	**27 ha** (moderate condition)	**141**	Yes
281	Low		White Box Yellow Box Blakely's Red Gum Woodland (BC Act)	1	16			
281	Moderate			1.2	18			
281	Good		White Box Yellow Box Blakely's Red Gum Woodland (BC and EPBC Acts)	0.3	8			
			Subtotal	**5.5^**	**42**			
479	Low	Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion	-	1	13	**264.5 ha** (good condition)	**911**	Yes
479	Moderate							
479	Good		-	3	46			
			Subtotal	**4**	**59**			
1711	Good	Tantoon - *Lepyrodia leptocaulis* shrubland on sandstone drainage lines of the Sydney Basin	-	**0.5**	**10**	**0 ha**	**0**	No*

^ Number has been rounded.

* The extent of this community proposed to be disturbed could be offset via a number of mechanisms (e.g. land-based offset, rehabilitation, contribution to the fund, supplementary measures).

Table 8
Existing Offset Area Replacement

PCT Number	Condition	PCT Name	EEC/CEEC	Area within Offset Area 2 to be Relocated (ha)	Area available on Gilgal after Mod 14 and UG4 Modification*	Replacement Offset Available on Gilgal?
281	Cleared	Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion	-	0	**18.5 ha** (moderate condition)	Yes
281	Low		White Box Yellow Box Blakely's Red Gum Woodland (BC Act)	0		
281	Moderate			0.5		
281	Good		White Box Yellow Box Blakely's Red Gum Woodland (BC and EPBC Acts)	0.25		
			Subtotal	**0.75**		
479	Low	Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion	-	0.25	**247 ha** (good condition)	Yes
479	Moderate		-	0.5		
479	Good		-	1.75		
			Subtotal	**2.5**		

* Refer to Table 7 for UG4 Modification credit requirements.

The Rehabilitation Strategy for the Modification is provided in Section 7.

Other Offset Options

Should residual offset requirements, beyond those described above, be required, these credits would be offset using one, or a combination, of the following (OEH, 2014):

- acquiring or retiring credits under the biobanking scheme in the BC Act;
- making payments into an offset fund once established by the NSW Government; and/or
- providing supplementary measures as outlined in the NSW Offset Policy (OEH, 2014).

The final Biodiversity Offset Strategy for the Modification is expected to comprise a combination of credits generated by land-based offset areas, rehabilitation and potentially other mechanisms.

Finalisation and security of the Biodiversity Offset Strategy would be subject to approval of the Modification.

6.3 FLOODING AND SURFACE WATER

The potential flooding impacts of the Modification were assessed by Arkhill Engineers (2019) in a Flooding Review which is provided in Appendix C. In addition, WRM Water and Environment (WRM) (2019) conducted a Surface Water Review to assess the potential impacts of the Modification on surface water quality and quantity (Appendix D).

This section addresses the potential impacts of the Modification on surface water features.

6.3.1 Background

Surface Water Drainage Network

Surface disturbance associated with the Modification would occur predominantly within the catchments of two minor tributaries of the Goulburn River, namely Bora Creek (traversed by the proposed access road to the remote services infrastructure area) and an unnamed drainage line referred to as Drainage Line 1 (traversed by the ventilation shaft compound and access tracks and services corridor associated with the dewatering sites) (Figure 3).

Bora Creek and Drainage Line 1 both pass through culverts under Ulan Road to join the Goulburn River diversion immediately west of Ulan Road.

6.3.2 Environmental Review

The impacts on surface water from the Modification are strictly related to construction and operation of the proposed ancillary infrastructure within the UG4 mining area. There would be no changes to the site water management or potential surface water impacts at the remainder of the Moolarben Coal Complex due to the Modification.

Reduced Surface Water Runoff

The ventilation shaft compound and remote services infrastructure area would be designed with suitable erosion and sediment controls (designed in accordance with Landcom [2004]).

Assessment of captured runoff by WRM (2019) predicted the proposed erosion and sediment control systems at the ventilation shaft compound and remote services infrastructure area would result in negligible (less than 0.5%) reduction in runoff reporting to the surrounding catchments. It was determined that this would be undetectable in the receiving water courses (Appendix D).

The disturbance areas associated with the dewatering sites, and associated access tracks and services corridor, are small and would be managed using suitable best practice measures in accordance with Landcom (2004) and the Surface Water Management Plan.

Flooding

An XP-Rafts hydrological model was developed to simulate the rate at which rainfall runs off the Bora Creek and Drainage Line 1 catchments. Hydrograph results from this modelling were used in TUFLOW hydraulic models for Bora Creek and Drainage Line 1 to assess the impacts of the access roads to the remote services infrastructure area and downcast ventilation shaft compound, respectively, to the flooding regimes of these watercourses (Appendix C).

MCO's primary design objective for the proposed culvert crossing of Bora Creek is to not increase the level or velocity of flooding at Ulan Road. A secondary objective is to provide flood immunity for the proposed access roads for design flood events up to the 5% Annual Exceedance Probability.

The flood modelling conducted by Arkhill Engineers (2019) considered the design of proposed culverts associated with the Modification and concluded that there would be:

- no increase in flood level or velocity at Ulan Road;
- only minor localised impacts on flood levels and velocities along Drainage Line 1 and Bora Creek on MCO-owned land; and
- no backwater effects impacting the adjacent MCO CHPP mine water dam infrastructure.

Water Quality

There would be no storage or handling of significant amounts of fuels or chemicals as part of the Modification. The only storage of fuel associated with the Modification would be small volumes of fuel, stored in appropriately bunded containers/areas, over the construction period.

In addition, there would not be any significant increase in erosion or sedimentation as a result of the Modification, given that stormwater runoff from the Modification disturbance areas would be managed using suitable erosion and sediment controls designed in accordance with Landcom (2004). The amount of stormwater runoff generated from the Modification disturbance areas would be minimised through separating clean water runoff from upslope catchments using appropriately designed clean water diversion drains.

Mitigation, Management and Monitoring

MCO would continue to implement surface water monitoring, mitigation and management measures in accordance with the Surface Water Management Plan, which would be reviewed and updated to incorporate the Modification.

6.4 NOISE

A Noise Review for the Modification has been undertaken by SLR Consulting (SLR) (Appendix E).

This section addresses potential construction and operational noise impacts associated with the Modification.

6.4.1 Background

Previous Assessment

A number of noise assessments have been undertaken since 2006 to assess the potential impacts of Stages 1 and 2 of the Moolarben Coal Complex.

The most recent noise assessment of operational impacts for the approved Moolarben Coal Complex was conducted by SLR as part of Modification 14 (SLR, 2017).

The previous noise assessments compared predicted noise levels against the noise criteria in Project Approvals (05_0117) and (08_0135).

It was predicted the Moolarben Coal Complex could comply with its Project Approval noise criteria with the implementation of noise mitigation and management measures.

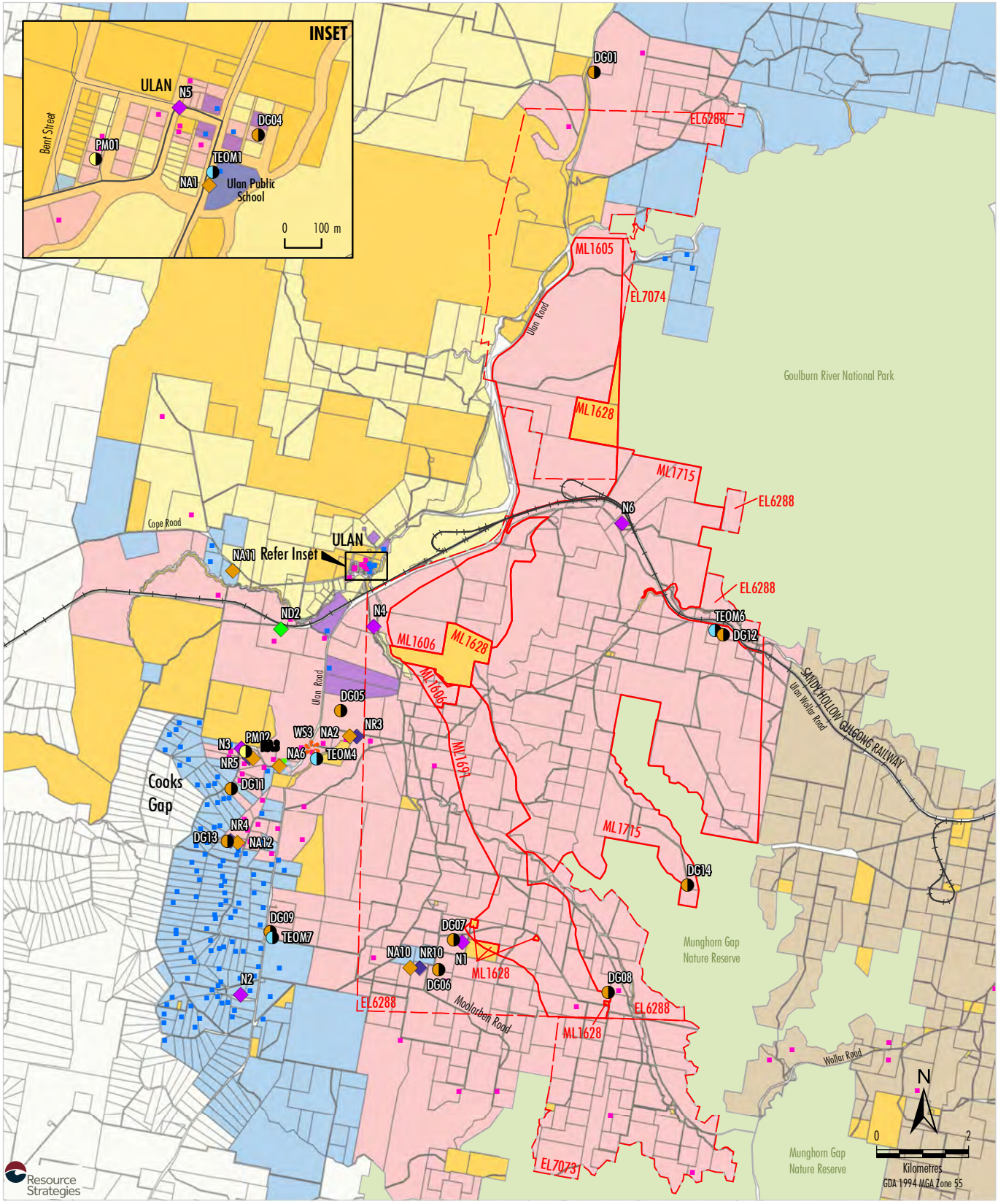
Noise Management and Monitoring

Project-specific and cumulative noise impacts associated with the Moolarben Coal Complex are managed in accordance with the approved Noise Management Plan. The Noise Management Plan describes the noise monitoring program, which consists of a combination of continuous real-time noise monitoring and operator-attended monitoring, as well as an Automatic Weather Station (AWS) (Figure 13).

MCO implements a range of noise control and management measures at the Moolarben Coal Complex, including mine planning controls, operational controls, engineering controls, a real-time response protocol, meteorological forecasting and continuous improvement to identify and manage noise impacts aimed to achieve compliance with the approved noise criteria.

Operator-attended noise monitoring is used to demonstrate compliance with Project Approval noise criteria, while continuous real-time monitoring is used as a noise management tool to assist MCO to take pre-emptive noise management actions to avoid potential non-compliances.

Further description of noise management measures is provided in the Noise Management Plan.



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LEGEND

- NSW National Parks and Wildlife Service
- Railway
- Exploration Licence Boundary
- Mining Lease Boundary

Land Ownership

- Moolarben Coal Operations Pty Ltd
- Moolarben Coal Operations Pty Ltd – Under Contract/Purchase Agreement
- Ulan Coal Mines Limited
- Wilpinjong Coal Mine
- Commercial
- Minister for Education
- Crown/State of NSW
- Privately Owned
- Unidentified Land

- Mine Owned Receiver
- Private Receiver (Under Contract to MCO)
- Private Receiver

Environmental Monitoring

- Attended Noise Monitoring Site
- Directional Noise Monitoring Site (UCML)
- Real-time Noise Monitoring Site
- 2005 Background Noise Monitoring Site
- Meteorological Station
- Dust Deposition Gauge
- PM_{10} Monitoring Site
- Real-time TEOM

Source: MCC (2019); NSW Department of Planning, Industry and Environment (2019)

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Noise Monitoring Sites

Figure 13

Attended Noise Monitoring

Attended noise monitoring has demonstrated compliance with Project Approval noise criteria.

The Moolarben Coal Complex Annual Review 2018 (MCO, 2018) Section 6.2.2 states:

> *During the 2018 reporting period, attended environmental noise monitoring was conducted monthly with additional sites monitored quarterly…*
>
> *Noise Criteria are specified for day, evening, and night period for the amenity of neighbouring residences. Noise Criteria are expressed as LAeq(15min) and LA1(1min).* ***Table 11*** *provides a summary of project noise criteria and noise performance based on attended noise monitoring for 2018, together with management implications and proposed actions.*
>
> *MCO complied with the project specific noise criteria at all monitoring sites during attended noise monitoring in the reporting period*

Review of MCO's monthly environmental monitoring reports further shows no recorded exceedances during the 6-month period ending June 2019 (Appendix E).

Complaints

MCO maintains a complaints register in accordance with Project Approval (05_0117) and Project Approval (08_0135). All noise-related complaints received by MCO are responded to and investigated in accordance with the Community Complaints Procedure in the Noise Management Plan.

The complaints register shows the number of noise related complaints has reduced from the peak recorded in 2011/2012 (SLR, 2019).

The reduction in complaints is considered to reflect the effective implementation of noise management measures including the application of an effective mine-owned land buffer, proactive noise controls, such as the introduction of Dura-Tray haul trucks, attenuation of mining fleet and the real-time noise management system.

In addition, there have been no reportable environmental incidents (i.e. reportable non-compliances) relating to noise in the period January 2017 to August 2019 (Appendix E).

6.4.2 Environmental Review

Noise modelling was conducted by SLR (2019) to predict noise impacts from the Moolarben Coal Complex incorporating the Modification (Appendix E).

Assessable Meteorological Conditions

The modelling meteorological parameters in the noise impact assessment for the approved Modification 14 (SLR, 2017) have been maintained for the Modification impact noise review to enable cumulative assessment with approved operations.

Modelling Scenarios

SLR (2019) modelled two construction phases for the Modification (Figure 14):

- Phase 1 (indicatively 2021): the construction of the downcast ventilation shaft, remote services infrastructure area and southern dewatering sites were conservatively modelled as occurring simultaneously.
- Phase 2 (indicatively 2026): the construction of the northern dewatering sites.

For both Phases 1 and 2, the Modification construction noise was modelled cumulatively with the approved Moolarben Coal Complex Operations.

As the operations of the downcast ventilation shaft, remote services infrastructure area and dewatering sites would generate significantly less noise than during construction, operational scenarios for the Modification were not separately modelled.

Noise Modelling Results

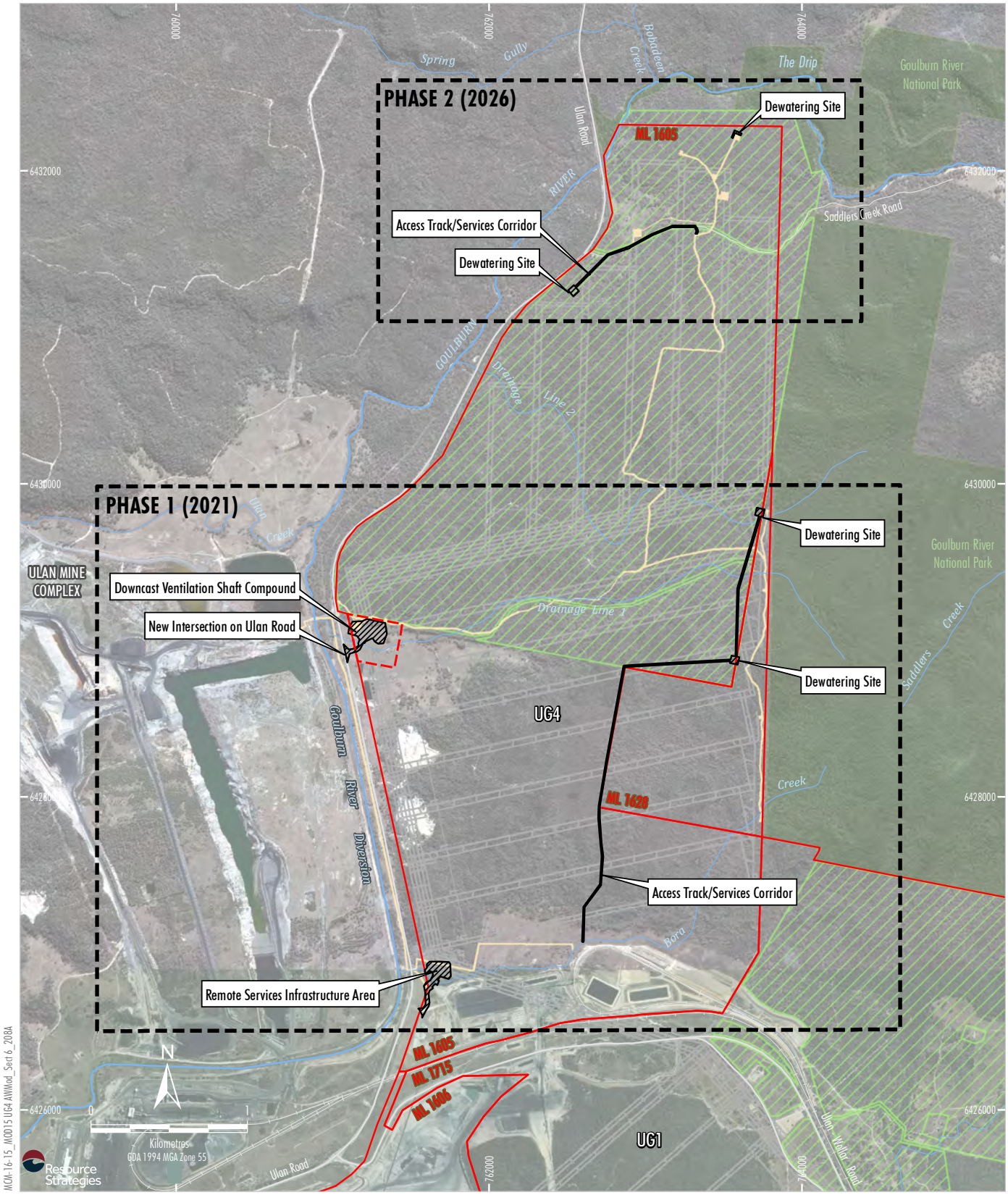
Potential noise impacts of the Moolarben Coal Complex incorporating the Modification were assessed and compared to Project Approval noise criteria.

SLR (2019) concluded, that with implementation of management measures, in particular, use of a temporary noise screen along the eastern edge of the most northerly dewatering site during construction, the Moolarben Coal Complex, incorporating the Modification, would continue to comply with Project Approval noise criteria at all privately-owned receivers (Appendix E).

Potential Traffic Noise

No significant traffic noise impacts associated with the Modification are expected given (Appendix E):

- there would be no increase in peak workforce vehicle movements in comparison to those previously assessed for the Moolarben Coal Complex;



LEGEND

- Mining Lease Boundary
- Mining Lease Application Boundary
- Existing Biodiversity Offset Area
- Existing/Approved Development
- Underground Longwall Layout
- Pipeline and Borefield Infrastructure
- UG4 Ancillary Works Modification
- Indicative Surface Infrastructure Area

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

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Noise Modelling Scenarios

Figure 14

- there are no private receivers along the roads that would be used to transport excavated material from the Modification construction sites to the open cut mining areas; and
- the traffic associated with the Modification (post-construction) would be a redistribution of existing site traffic (i.e. there would be no additional trucks in comparison to those being operated at the Moolarben Coal Complex).

Cumulative Noise Impacts

Cumulative noise impacts with the Wilpinjong Coal Mine and Ulan Coal mine (incorporating Modification 14) were assessed by SLR (2017). No exceedances of the amenity noise criteria were predicted at any privately-owned receiver. This outcome would remain unchanged by the Modification. (Appendix E).

6.4.3 Mitigation Measures, Management and Monitoring

MCO would continue to mitigate, monitor and manage potential noise impacts from the Moolarben Coal Complex in accordance with the Noise Management Plan.

6.5 AIR QUALITY

An Air Quality Review has been undertaken by Todoroski Air Sciences (TAS) for the Modification (Appendix F).

6.5.1 Background

Previous Assessment

A number of air quality assessments have been undertaken since 2006 to assess the potential impacts of Stages 1 and 2 of the Moolarben Coal Project.

The most recent assessment of potential air quality impacts associated with the approved Moolarben Coal Complex was undertaken by TAS as part of the approved Modification 14 (TAS, 2017).

TAS (2017) conducted a quantitative analysis of total suspended particulate (TSP) matter, particulate matter ≤ 10 micrometres (µm) (PM_{10}), particulate matter ≤ 2.5 µm ($PM_{2.5}$) and dust deposition levels for the Moolarben Coal Complex. The Modification Air Quality Review includes a qualitative analysis to investigate the potential effect of the Modification on dust levels in the surrounding environment relative to the approved dust levels assessed in TAS (2017).

With the implementation of proactive and reactive management measures, TAS (2017) predicted no exceedances of the 24-hour average PM_{10} criteria, annual TSP, PM_{10} or dust deposition criteria at any privately-owned receiver due to emissions from the project only (i.e. the Moolarben Coal Complex incorporating Modification 14).

24-hour average and annual average $PM_{2.5}$ concentrations were predicted to be below applicable air quality standards at all privately owned receivers (TAS, 2017).

Air Quality Management and Monitoring

The approved Air Quality Management Plan describes the air quality management and monitoring regime at the Moolarben Coal Complex.

The Air Quality Management Plan describes:

- Project Approval air quality criteria.
- Dust monitoring locations and frequency, comprising (Figure 13):
  - Tapered Element Oscillating Mass Balances (TEOMs) measuring PM_{10} and $PM_{2.5}$ continuously (i.e. real-time monitors);
  - High Volume Air Samplers measuring PM_{10} once every six days; and
  - dust deposition gauges.
- Ongoing dust management measures.
- Real-time response triggers (set below Project Approval air quality criteria), which trigger the implementation of additional dust management measures.

Operational air quality management measures at the Moolarben Coal Complex include (but are not limited to):

- employing appropriate dust suppression methods at the coal handling facilities;
- use of water carts and/or sprays on coal-handling and stockpile areas to minimise dust generation as necessary and practicable;
- use of water carts as necessary and practicable on all trafficked areas to minimise excessive visible dust;
- use of constructed roads only, minimisation of access roads and removal of obsolete access roads;
- partial enclosure of raw coal transfer and reject conveyors where possible; and

- modification of operations during periods of adverse weather conditions.

A comprehensive air quality management system including predictive meteorological forecasting, predictive air quality forecasting and real-time air quality monitoring data (i.e. real-time response triggers) has been implemented at the Moolarben Coal Complex.

In accordance with the requirements of Project Approval (05_0117) and Project Approval (08_0135), MCO co-ordinates air quality management with the Ulan Mine Complex and Wilpinjong Coal Mine to minimise cumulative air quality impacts.

MCO reports air quality monitoring results in its Monthly Environmental Monitoring Report and Annual Review.

A review of air quality monitoring results and air quality compliance for the period January 2017 to August 2018 is provided in Appendix F.

MCO maintains a complaints register in accordance with Project Approval (05_0117) and Project Approval (08_0135). All-dust related complaints received by MCO are responded to and investigated.

6.5.2 Environmental Review

The Air Quality Review undertaken for the Modification (TAS, 2019) considered two potential sources of dust generation:

- construction dust emissions; and
- emissions due to the operation of Modification infrastructure.

TAS (2019) concluded the dust generation due to the Modification operation activities would not generate any significant dust emissions and overall, the Modification is unlikely to cause any negative discernible impact at any surrounding sensitive receptor relative to the approved Moolarben Coal Complex.

Construction Activity Dust Emissions

The dust emissions produced due to construction activities considered the following:

- construction timing;
- the type of construction activity; and
- dust emission inventories for TSP, $PM_{10,}$ $PM_{2.5}$.

Although the majority of construction activity would occur over a six-month period, the estimated dust emissions were annualised to allow for a direct comparison with the estimated dust emissions for the approved Moolarben Coal Complex (Appendix F).

A comparison of predicted construction emissions from the Modification with currently approved operational activity emissions for the Moolarben Coal Complex indicates the increase in dust emissions due to the Modification would not be discernible (Appendix F).

Therefore, TAS (2019) concluded that the Modification is unlikely to cause any negative discernible impact at any surrounding sensitive receiver locations relative to the approved Moolarben Coal Complex.

Operation Activity Dust Emissions

The potential dust emissions for the operational activities associated with the Modification are considered to be insignificant (Appendix F). The operation of the dewatering sites, the downcast ventilation shaft and remote services infrastructure are not inherently dusty activities and any dust arising from these sources will be negligible in comparison to the approved operations of the Moolarben Coal Complex (Appendix F).

6.5.3 Mitigation Measures, Management and Monitoring

MCO would continue to implement air quality management measures in accordance with the Air Quality Management Plan, which would be reviewed and updated to incorporate the Modification.

6.6 TRANSPORT

A Road Transport Review for the Modification has been prepared by The Transport Planning Partnership (TTPP) (Appendix G) in accordance with the following guidelines:

- *Guide to Traffic Generating Developments (*NSW Roads and Traffic Authority, 2002);
- *Guide to Road Design (*Austroads, 2010); and
- *Guide to Traffic Management (*Austroads, 2016).

6.6.1 Existing Environment

The existing road network surrounding the Modification is shown on Figure 15. Vehicular access to the Moolarben Coal Complex is primarily provided via:

- the CHPP Access Road off Ulan-Wollar Road (approximately 1 km north of the intersection with Ulan-Wollar Road);
- the Open Cut Access Road off Ulan-Wollar Road (approximately 120 m east of Ulan Road);
- the ROM Coal Facilities Access Road off Ulan-Wollar Road (approximately 2.4 km east of Ulan Road); and
- the OC4 Access Road from Ulan-Wollar Road (approximately 4.6 km east of Ulan Road).

Current Network Operation

A detailed description of the existing road network in the vicinity of the Moolarben Coal Complex is provided in Appendix G. A summary of the roads relevant to the Modification is provided below.

TTPP has assessed the operation of the existing intersections and road network relevant to the modification. Tube counts were commissioned in October 2018 undertaken on Ulan Road near the site of the proposed new access road to the ventilation shaft compound, and the traffic volumes are presented in Appendix G.

State Roads

Ulan Road is a State Road, running adjacent to the western boundary of the Modification (Figure 15). Ulan Road provides direct vehicular access to the Moolarben Coal Complex via the CHPP Access Road.

The speed limit on this section of Ulan Road is 100 km/h, with advisory speed signs on bends, where appropriate.

Local Roads

Ulan-Wollar Road is a local rural road which provides an east-west connection between the villages of Ulan and Wollar (Figure 15).

Ulan-Wollar Road provides several direct vehicular accesses to the Moolarben Coal Complex, the primary accesses being:

- to OC1 via the Open Cut Access Road which intersects with Ulan-Wollar Road approximately 120 m east of Ulan Road;
- via the CHPP access road, located approximately 2.4 km east of Ulan Road; and
- to OC4 via the OC4 Access Road approximately 4.6 km east of Ulan Road.

Key Intersections

The intersection of Ulan-Wollar Road and Ulan Road includes a channelised right-turn and passing bay on Ulan Road, allowing northbound vehicles to pass around vehicles turning right into Ulan-Wollar Road, and an auxiliary left-turn lane (deceleration lane) on Ulan Road for the left turn into Ulan-Wollar Road, and intersection lighting.

Saddlers Creek Road extends eastwards from Ulan Road, approximately 5.5 km north of Ulan-Wollar Road and approximately 3.0 km north of the access road to the Ulan Coal Complex (Figure 15). It is an unsealed two-way road that provides access to local properties only, and does not fulfil any through traffic function. The intersection of Saddlers Creek Road with Ulan Road is a basic rural T-intersection, with no localised widening of the sealed surface of Ulan Road in the vicinity of the intersection (Appendix G).

Crash Data

TTPP (2019) assessed road crash data published by RMS for the five-year period from 2013 to 2017 on roads in close proximity to the Moolarben Coal Complex. The data indicated that two crashes occurred over the five-year period (Appendix G).

TTPP (2019) concluded that the crash history of the roads in the vicinity of the Moolarben Coal Complex does not highlight any crash causation factors that may suggest an inherent safety issue with the roads.

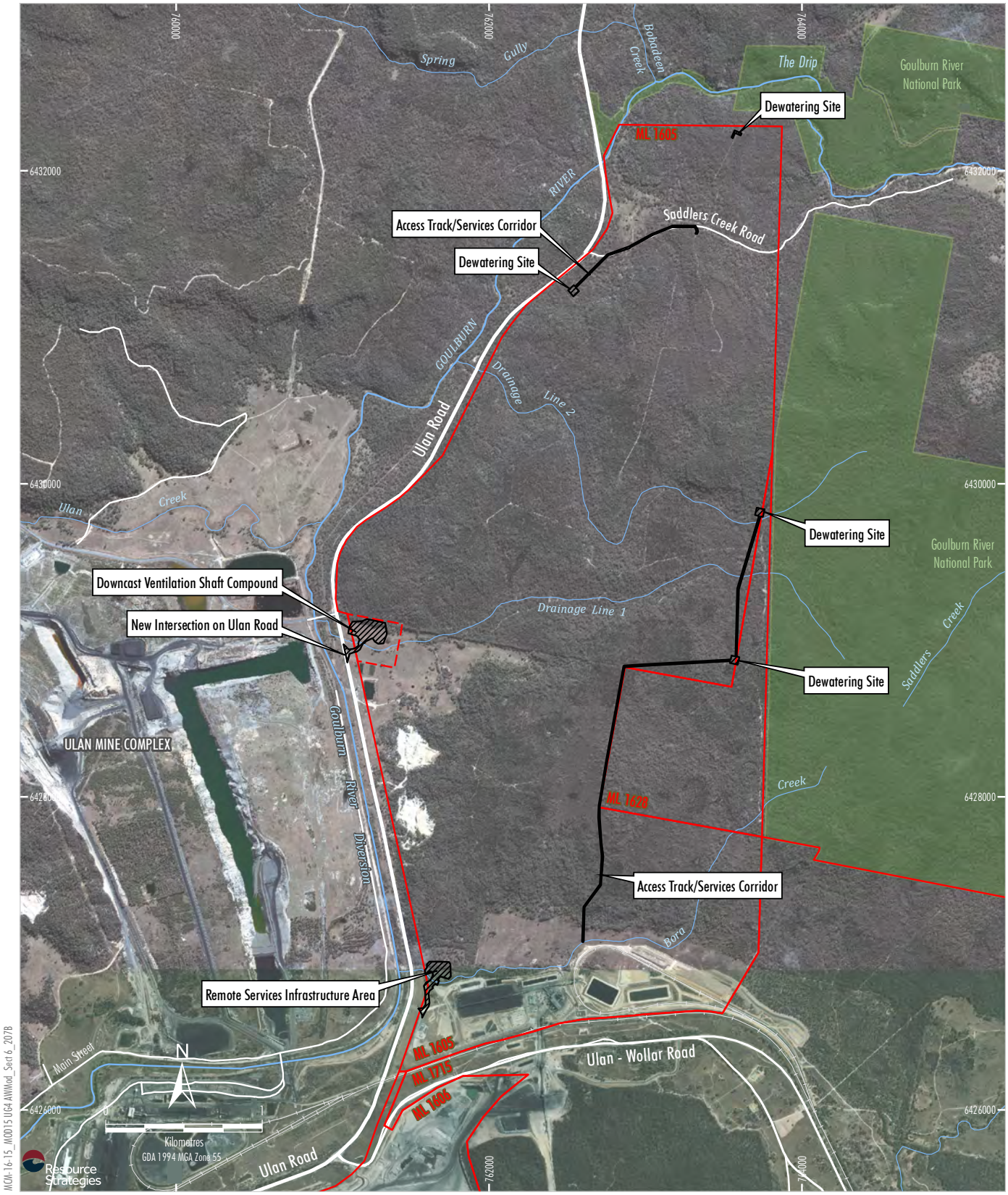
6.6.2 Environmental Review

There is no increase in the currently approved peak workforce for the Modification.

Notwithstanding, traffic generated by construction activities, including transport of construction materials to the open cut mining areas, have been assessed against background traffic movements.

These traffic movements would occur predominantly along/at (Figure 15):

- Ulan Road;
- Ulan-Wollar Road;
- Saddlers Creek Road; and



MCM-16-15_MOD15 UG4 AWMod_Sect 6_207B

LEGEND

- Mining Lease Boundary
- Mining Lease Application Boundary
- Road
- UG4 Ancillary Works Modification
- Indicative Surface Infrastructure Area

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

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Existing Road Network

Figure 15

- intersections associated with the downcast ventilation shaft (i.e. new proposed intersection), CHPP access road, open cut access road, and Saddlers Creek and Ulan Roads.

The traffic being generated during construction of the Modification is only minor relative to the existing traffic movements associated with the Moolarben Coal Complex. In addition, they would only occur over a short period (approximately 6 months for the initial phase followed by a further 3 months occurring in approximately 2026).

Level of Service

The results of the analysis conducted by TTPP (2019) demonstrate that the changes to traffic conditions that would occur as a result of the Modification would have negligible impact on the operation of the existing road network (Appendix G).

The intersections would continue to operate with low delays to vehicles and spare capacity. No changes to the intersections are required to accommodate the changed traffic conditions that would result from the Modification (Appendix G).

Impacts of Road Safety

The review by TTPP (2019) of the crash history of roads serving the Moolarben Coal Complex did not highlight any causation factors that may be exacerbated by the changed traffic conditions resulting from the Modification (Appendix G).

New Access Road Intersection

The new intersection with Ulan Road would be located approximately 250 m south of the Ulan Coal Mine access road and would be designed to be consistent with the *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* (Austroads, 2017).

The operation characteristics of the proposed intersection have been assessed by TTPP (2019) and results demonstrate that the intersection can be expected to operate at a good level of service, with short delays to turning vehicles and spare capacity.

Access via Saddlers Creek Road

The northern dewatering sites would be accessed via Saddlers Creek Road. Saddlers Creek Road provides access to a private property. As such, existing vehicle turning movements at the intersection of Ulan Road with Saddlers Creek Road are expected to be low (Appendix G).

As part of Modification 7, MCO committed to implementing traffic management for construction vehicles entering and exiting the northern dewatering site to Ulan Road and along Saddlers Creek Road.

Traffic management measures would be designed and implemented in accordance with the relevant RMS requirements, taking into consideration the traffic volumes and nature of the construction activity.

6.6.3 Mitigation Measures, Management and Monitoring

TTPP (2019) concluded no specific management or mitigation measures are required to the existing road network.

MCO would confirm the design of the proposed new intersection with Ulan Road as part of the approval required under Section 138 of the NSW *Roads Act, 1993* in consultation with RMS and Council.

Affected parts of Saddlers Creek Road would be repaired/maintained as required during construction works for the northern dewatering sites and services corridor.

6.7 GROUNDWATER

A Groundwater Review has been conducted for the Modification by Dundon Consulting Pty Ltd (2019) (Appendix H).

6.7.1 Background

A number of groundwater investigations, assessments and reviews have been undertaken since 2006 to assess the potential impacts of the approved Moolarben Coal Complex. Recent groundwater assessments undertaken for the approved Moolarben Coal Complex include:

- Moolarben Coal Complex Stage 2 Groundwater Impact Assessment November 2011 (RPS Aquaterra, 2011);
- Moolarben Coal Complex Stage 2 PPR Response to Submissions Additional Groundwater Impact Assessment (RPS Aquaterra, 2012);
- Moolarben Coal Project Stage 1 Optimisation Modification Groundwater Assessment (Australian Groundwater and Environmental Consultants Pty Ltd, 2013);

- Moolarben Coal Complex UG1 Optimisation Modification Groundwater Assessment prepared by Dundon Consulting (2015), with supporting groundwater modelling undertaken by HydroSimulations (2015); and
- Moolarben Coal Complex Open Cut Optimisation Modification Groundwater Assessment (HydroSimulations, 2017).

Groundwater monitoring and management at the Moolarben Coal Complex is conducted in accordance with the Groundwater Management Plan.

6.7.2 Environmental Review

The Modification would involve additional surface disturbance for the relocated/augmented dewatering sites to facilitate efficient dewatering of the approved UG4 mining operations. The dewatering itself is associated with the approved UG4 mining operations, which would not change for the Modification.

As such, the Modification would not change groundwater impacts beyond those associated with the approved UG4 operations.

6.7.3 Mitigation Measures, Management and Monitoring

Groundwater monitoring and management for the Moolarben Coal Complex would continue to be conducted in accordance with the Water Management Plan.

Groundwater Licensing

Groundwater take associated with the approved UG4 mining operations would be appropriately licensed under the requirements of the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009* and the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources*.

There would be no additional licence requirements resulting from the Modification.

MCO would continue to hold groundwater licences to account for approved mining at the Moolarben Coal Complex incorporating the Modification.

6.8 OTHER ENVIRONMENTAL ASPECTS

6.8.1 Visual

A number of visual impact assessments have been prepared for the approved Moolarben Coal Complex, including detailed assessments for the Stage 1 EA (O'Hanlon Design, 2006), Stage 2 EA (O'Hanlon Design, 2008) and Stage 1 Optimisation Modification EA (EMGA Mitchell McLennan, 2013a). The assessments considered the impacts of the Moolarben Coal Complex on the visual amenity from sensitive viewpoints.

The additional disturbance and surface infrastructure proposed for the Modification would be viewed in the context of the existing/approved Moolarben Coal Complex and other adjacent and surrounding industrial development (such as the neighbouring Ulan Coal Mine).

The major components of the Modification that are considered to have the potential to impact on the visual landscape include:

- ventilation shaft compound and new intersection; and
- remote services infrastructure area.

The potential visual impacts of the Modification were assessed by evaluating the level of visual modification in the context of the visual sensitivity of relevant surrounding land use areas (Table 9).

Table 9
Visual Impact Matrix

Visual Modification \ Viewer Sensitivity	H	M	L
H	H	H	M
M	H	M	L
L	M	L	L
VL	L	VL	VL

VL = Very Low
L = Low
M = Moderate
H = High

Source: EDAW Australia (2006).

The degree of visual modification is a function of the contrast between the development and the existing visual landscape (i.e. the existing Moolarben Coal Complex). Visual (viewer) sensitivity considers how critical a change to the existing landscape would be viewed from various use areas, where different activities are considered to have different sensitivity levels.

There are no privately-owned dwellings with potential views of the Modification components; however, potential views would be available from Ulan Road (a public road adjacent to the Modification) and Saddlers Creek Road.

Ventilation Shaft Compound and New Intersection

The ventilation shaft compound and new intersection would be visible to users of Ulan Road. The key infrastructure likely to be visible at the ventilation shaft compound include:

- the new intersection and access road (visible for the life of the mine); and
- ventilation shaft drill rig (visible during construction phase only [i.e. short-term impact]).

This infrastructure would be located approximately 2 km north of the existing Moolarben Coal Complex infrastructure. Despite this, it is noted that the site is north of water storage infrastructure and quarries and that the western side of Ulan Road (opposite the proposed infrastructure), contains existing infrastructure associated with the Ulan Coal Mine that is visible from Ulan Road.

Although the ventilation shaft compound and new intersection would be visible to the users of Ulan Road, similar views of mining infrastructure and quarries are already available along large portions of Ulan Road, in the locality. As such, views of the ventilation shaft compound and new intersection are considered to be typical of the views along the adjacent portions of Ulan Road.
The viewer sensitivity of Ulan Road would be low (as it is a public road) (EDAW Australia, 2006). However, the level of visual modification associated with the ventilation shaft compound and new intersection along this short section of Ulan Road is likely to be moderate.

It is, therefore, likely that the resulting visual impact of this component of the Modification would be low.

Following construction, the level of visual impact would be reduced through the vegetation of the bunds surrounding the downcast ventilation shaft compound.

Remote Services Infrastructure Area

Although users of Ulan Road would have direct views of the remote services infrastructure area, the proposed infrastructure would be located directly adjacent to the existing infrastructure associated with the Moolarben Coal Complex.

This visibility of the drill rig infrastructure, which would be visible for the duration of the construction phase, would result in a moderate visual modification. Given that the visual sensitivity of Ulan Road would be low (as it is a public road), it is likely that the resulting visual impact of this component of the Modification would be low during construction.

Following construction, the level of visual impact would be reduced through the vegetation of the bunds surrounding the remote services infrastructure area.

Dewatering Sites and Associated Access Tracks and Services Corridor

Users of Saddlers Creek Road would have views of the drill rig required during construction of the northern dewatering sites. In addition, during operations there would be minor views of the dewatering sites from Saddlers Creek Road.

The proposed services corridor has been located adjacent to Saddlers Creek Road to minimise the disturbance extent, and therefore potential visual impacts.

Given that the visual sensitivity of Saddlers Creek Road would be low, it is likely that the resulting visual impact of this component during construction of the Modification would be low.

6.8.2 Historic Heritage

Historic heritage sites relevant to the Moolarben Coal Complex are managed in accordance with the Heritage Management Plan.

Non-Aboriginal Heritage Assessments were prepared for Stages 1 and 2 of the Moolarben Coal Complex. Collectively, these studies assessed the impacts associated with surface disturbance within the current Modification areas.

Previous surveys conducted in 2005, 2008 and 2013 (Veritas Archaeology and History Service,2005; Heritas Architecture, 2008; EMGA Mitchell McLennan, 2013b) identified 25 historic heritage sites within, or in immediate proximity to the Moolarben Coal Complex requiring some level of management and/or monitoring. Of these sites, 13 have previously been managed in accordance with the Stage 1 and/or Stage 2 Project Approvals, and 12 remain *in situ* at the Moolarben Coal Complex (MCO, 2016).

Historic Heritage Sites within Proximity of the Modification

No known historic heritage sites are located within the Modification area (Figure 16). Historic heritage sites 20, 22 and 23 were identified in the Stage 1 EA and are located more than 500 m from the Modification areas (at the closest point). All remaining historic heritage sites that require management are located further than 1 km away.

Summary

As the Modification would avoid direct impacts to all historic heritage sites no impacts are expected.

Historic heritage sites would continue to be managed in accordance with the Heritage Management Plan.

6.8.3 Land Resources

Soils

Soil landscapes are mapped across the Moolarben Coal Complex in the *Soil Landscapes of Dubbo 1:250,000 Sheet* (Murphy and Lawrie, 1998). The three soil landscapes within the Modification area are the Ulan, Lees Pinch and Munghorn Plateau Landscapes (Murphy and Lawrie, 1998).

Approximately 55% of the Modification area is situated within the Ulan Soil Landscape, which is typically found in association with low undulating rises and creek flats on slopes between 2% and 10% gradient.

The Lees Pinch Soil Landscape, situated on the lower to mid-slopes and occasionally on ridges, covers approximately 2% of the Modification area.

This soil landscape is typically found in association with sandstone plateau and hillslopes with boulder debris and rock outcrops, and slopes between 15% and 40%.

Approximately 43% of the Modification area is situated within the Munghorn Plateau Landscape, which is typically found in association with low undulating hills with slopes between 3% and 10% and where local relief varies from 20 to 60 m.

The Modification would result in net additional disturbance of approximately 12.5 ha. All of the additional disturbance for the Modification is associated with surface infrastructure and not open cut mining operations.

No change to the existing soil management and monitoring measures described in the approved Rehabilitation Management Plan would be required for the minor additional disturbance for the Modification.

Existing soil management measures, as outlined in the Rehabilitation Management Plan, include:

- Soil stripping at depths specific to each soil type (based on soil type and site verification).
- Stockpiling of stripped soil resources for re-use in rehabilitation.
- Management of stockpiles to optimise the overall quality of growth media resources.

Agriculture

No impacts to agriculture are expected due to the Modification, given the Modification involves only minor surface infrastructure and does not disturb any areas of existing agricultural land.

The additional disturbance in the Modification areas would be rehabilitated to native vegetation post decommissioning (Section 7), consistent with the existing land use.

Temporary Soil/Material Stockpiles

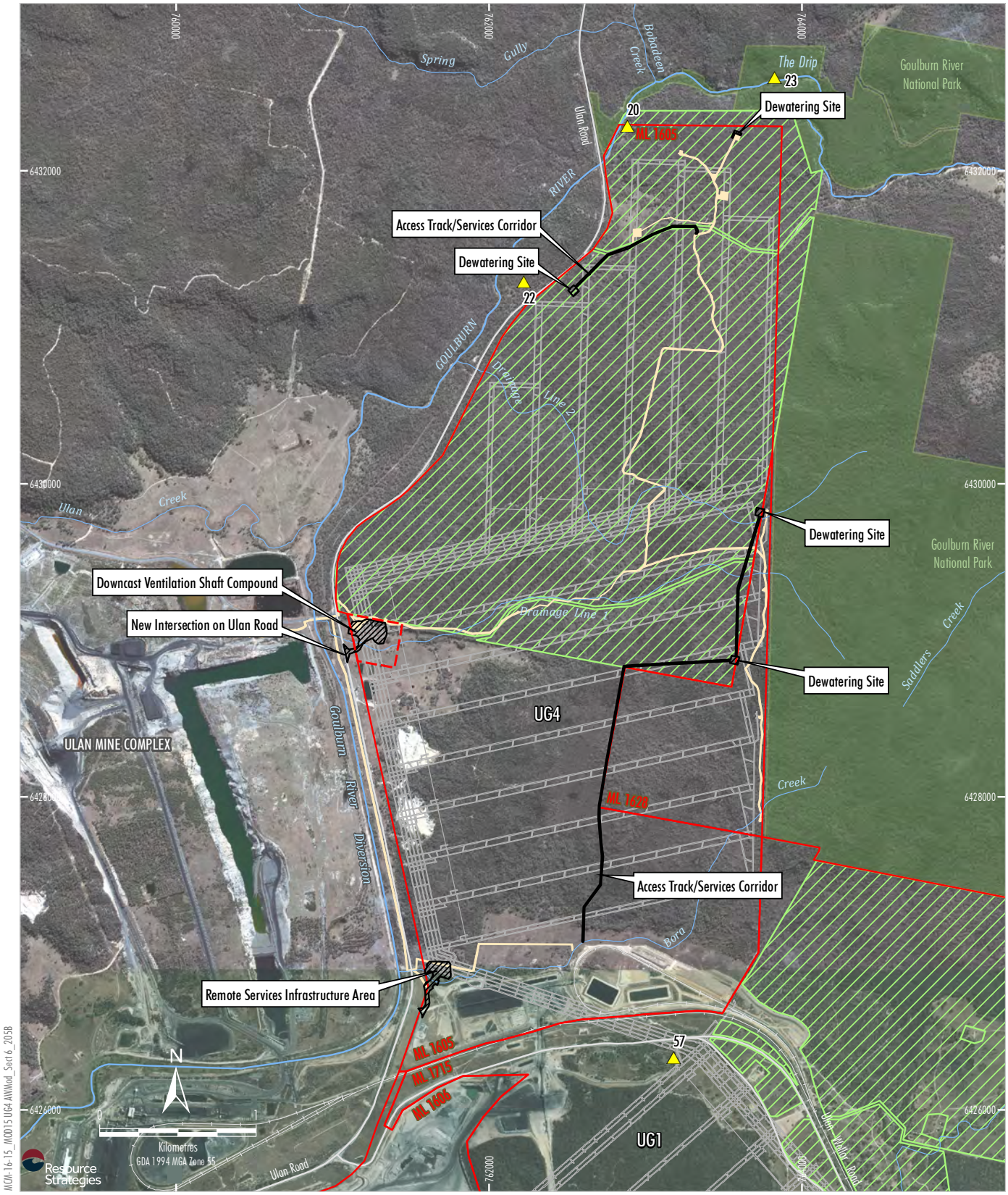
Material excavated during construction activities would be temporarily stockpiled for later use in landform shaping and rehabilitation.

Any long-term stockpiles would be located within approved disturbance areas and would be stabilised and temporarily vegetated until such time as the material is required for final landform site rehabilitation. Management of long-term temporary stockpiles may include addition of ameliorants to promote vegetation growth and/or hydroseeding.

As the stockpiles would be located within approved disturbance areas, they would be located within the catchment of the water management system and erosion and sediment controls would be implemented. Erosion potential would be minimised through design and by vegetating the stockpiles.

Dust sources during stockpile establishment would be minor compared to concurrent mining operations, and rehabilitation of the stockpiles would control any short-term potential wind erosion emissions.

The Rehabilitation Management Plan and MOP would be updated as required to include temporary stockpiles of construction material.



LEGEND

- NPWS Reserve
- Mining Lease Boundary
- Mining Lease Application Boundary
- Existing Biodiversity Offset Area

Existing/Approved Development

- Underground Longwall Layout
- Pipeline and Borefield Infrastructure

UG4 Ancillary Works Modification

- Indicative Surface Infrastructure Area

Historic Heritage

- Historic Heritage Site

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

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Historic Heritage Sites

Figure 16

Monitoring, Mitigation and Management

Management of potential impacts to land resources would continue to be conducted in accordance with the Rehabilitation Management Plan, which would be updated as necessary for the Modification.

The Rehabilitation Strategy for the Modification is presented in Section 7.

6.8.4 Greenhouse Gas Emissions

Greenhouse gas emissions from the Moolarben Coal Complex are currently managed in accordance with the Greenhouse Gas Minimisation Plan and are measured and reported annually in accordance with the National Greenhouse Gas and Energy Reporting Scheme (NGERS).

TAS (2017) conducted an assessment of the greenhouse gas emissions from the Moolarben Coal Complex, incorporating Modification 14.

The greenhouse gas emissions are categorised into three scopes (Scopes 1, 2 and 3) based on the source of the emissions.

Scope 1 emissions encompass direct sources from a project, Scope 2 emissions encompass indirect sources from a project associated with the generation of purchased and consumed electricity, and Scope 3 emissions encompass indirect sources from a project associated with other indirect greenhouse gas emissions, including the downstream combustion of coal (TAS, 2017).

Scope 1 and 2 emissions at the Moolarben Coal Complex during the 2017-2018 NGERS reporting period are provided in Table 10.

Table 10
Scope 1 and 2 Greenhouse Gas Emissions at the Moolarben Coal Complex

Greenhouse Gas Emissions	Annual Reporting Period – 2017-2018
Scope 1 (t CO2-e/year)	156,443
Scope 2 (t CO2-e/year)	75,613

There are no adjustments to mine operations due to the Modification. The only potential additional sources of Scope 1 greenhouse gas emissions would be due to diesel consumption during construction activities for surface infrastructure development.

It is estimated that diesel consumption during construction activities would be less than approximately 0.5% of the diesel used at the Moolarben Coal Complex on an annual basis, thus greenhouse gas predictions would be generally consistent with the most recent TAS (2017) assessment.

Scope 2 emissions associated with the Modification would include electricity consumption from the Modification infrastructure during operation.

These are estimated to be negligible, or even potentially decrease relative to the approved Moolarben Coal Complex. This is because there would simply be a redistribution of electricity consumption as operations move from UG1 to UG4. In addition, the downcast ventilation shaft would potentially improve energy efficiency for the amount of electricity required to ventilate the underground operations.

As the Modification does not involve any change in mining operations, no change to approved coal production or associated Scope 3 emissions from coal combustion is expected.

MCO would continue to monitor and manage greenhouse gas emissions in accordance with the Greenhouse Gas Minimisation Plan, which would be updated to incorporate the Modification as required.

Reporting of energy consumption and Scope 1 and 2 greenhouse gas emissions would continue in accordance with NGERS.

6.8.5 Socio-Economic

The Modification involves construction and operation of additional surface infrastructure in the approved UG4 mining area.

The Modification proposes no increase to the previously assessed peak employment or the life of the Moolarben Coal Complex. The majority of the construction workforce contractors for the Modification would be very likely to already reside in the region. As such, negligible additional demand for services (e.g. housing and health services) in the region is expected.

Potential amenity impacts have been considered in Appendices E and F. It is predicted the Moolarben Coal Complex incorporating the Modification would continue to comply with Project Approval criteria relating to noise and air quality.

MCO would continue to make financial contributions to the MWRC in accordance with Moolarben Coal Complex Planning Agreements, Project Approval (05_0117) and Project Approval (08_0135).

MCO also makes financial contributions to a number of non-government and community organisations in the region. During 2010 to 2019, MCO's Community Foundation distributed over $1 million to support local community, sporting, cultural, educational and recreational activities.

Recent recipients of financial contributions include the Rotary Club of Mudgee, Mudgee Lions Club, Lifeskill Plus and the Dunedoo Sports Club.

In addition, MCO sponsors the annual Moolarben Coal Celebrity Golf Challenge, which raises funds for a number of local organisations including LIfeskills Plus, Pioneer House Nursing Home, Mudgee Men's Shed and Mudgee Junior Golf.

No specific socio-economic mitigation measures are considered to be required as a result of the Modification.

7 REHABILITATION STRATEGY

The Modification involves additional surface disturbance for surface infrastructure within the approved UG4 underground mining area, which will be partly rehabilitated post-construction with final rehabilitation following decommissioning.

7.1 REHABILITATION OF THE APPROVED MOOLARBEN COAL COMPLEX

MCO's commitments and requirements relating to the rehabilitation of the Moolarben Coal Complex are stated in Project Approval (05_0117) and the Rehabilitation Management Plan.

A summary of these commitments and requirements is provided below.

7.1.1 Project Approval Requirements

Project Approval (05_0117) provides rehabilitation objectives, including for the mine site (as a whole), final voids, water quality, surface infrastructure, agricultural land, other land and the community.

The rehabilitation objectives specific to the "mine site (as a whole)" in Table 13 of Project Approval (05_0117) are as follows:

- *Safe, stable and non-polluting.*
- *Constructed landforms are to drain to the natural environment (excluding the final voids).*
- *Final landforms are to be consistent with the surrounding topography of the area, taking into account relief patterns and principles; and*
- *Minimise visual impact of final landforms as far as is reasonable and feasible.*

7.1.2 Rehabilitation Management Plan

Rehabilitation at the Moolarben Coal Complex is undertaken in accordance with its contemporary Rehabilitation Management Plan, which was approved July 2019.

Rehabilitation objectives for the Moolarben Coal Complex as described in the Rehabilitation Management Plan include:

- Creating natural looking, stable and adequately drained post-mining landforms that are visually consistent with surrounding areas.
- Creating a self-sustaining and ecologically diverse post-mining landscape that includes areas compatible with the conservation values of the adjacent Munghorn Gap Nature Reserve and Goulburn River National Park and areas suitable for sustainable grazing, which are comparable to selected analogue sites.
- Creating effective wildlife corridors and habitat links between existing remnant vegetation in the Munghorn Gap Nature Reserve (MGNR), Goulburn River National Park (GRNP) and other surrounding areas by increasing the continuity of woodland vegetation.
- Maintaining the diversity and genetic resource of flora currently existing within the locality.
- Maintaining and enhancing habitat for native fauna, including threatened fauna.
- Reinstating subsidiary surface drainage.
- Improving soil condition and the native soil seed bank.
- Minimising soil erosion and sedimentation.
- Providing access for monitoring and adaptive management, control of competitive native and exotic flora and fauna species and suppression of fires.
- Progressing towards meeting closure and post-mining land use objectives (to be developed in consultation with stakeholders and described in a Mine Closure Plan) in a timely and cost-effective manner.

In consideration of contemporary rehabilitation guidelines, including the *Mining Operations Plan (MOP) Guidelines* (Division of Resources and Energy [now DRG], 2013), conceptual rehabilitation domains have been developed for the Moolarben Coal Complex.

The domains affected consist of primary domains (i.e. land use during mining operations) and secondary domains (i.e. post-mining land use).

Table 11 lists the secondary domains and relevant post-mining rehabilitation objectives as presented in the current Rehabilitation Management Plan. These objectives guide the rehabilitation of the Moolarben Coal Complex.

Table 11
Moolarben Coal Complex Rehabilitation Secondary Domains and Objectives

Secondary Domain (Post-mining Land Use)	Code	Rehabilitation Objective
Rehabilitation Area – Woodland	A	Establish native vegetation consistent with Box Gum Shrubby Woodland associations cleared by development of the Moolarben Coal Complex, and which include stands of *Allocasuarina*. Box Gum Shrubby Woodland associations will be generally consistent with the Box Gum Woodland EEC. Box Gum Shrubby Woodland rehabilitation areas will contribute to habitat linkages between MGNR and GRNP.
Rehabilitation Area – Forest	B	Establish native vegetation comparable to Sedimentary Ironbark Forest communities in adjacent undisturbed areas, including stands of *Allocasuarina.* Sedimentary Ironbark Forest rehabilitation areas will contribute to habitat linkages between MGNR and GRNP.
Rehabilitation Area – Grassy Woodland	C	Establish native vegetation comparable to Western Slopes Grassy Woodland communities in adjacent undisturbed areas. Box Gum Grassy Woodland rehabilitation areas will contribute to habitat linkages between MGNR and GRNP.
Rehabilitation Area – Agricultural	D	Agricultural rehabilitation areas will be rehabilitated to achieve a minimum Land Capability Class VI that is capable of supporting sustainable grazing. Pasture rehabilitation areas will be top-dressed with appropriate topsoil (or topsoil substitutes), rock raked where required and ameliorated to produce a growth medium with properties capable of sustaining long-term pasture growth. Pasture areas will be vegetated with a mix of native and non-invasive perennial pasture species. Management inputs required to sustain grazing will not be significantly greater than analogue sites.
Post-mining Water Management Area	E	The final landform drainage including the rehabilitated diversions of Murragamba and Eastern Creeks will integrate with the surrounding catchments and be comparable to selected creek analogue sites. Sediment dams/water storages identified for retention in the final landform landscape (to provide water resources for fauna habitat or for agricultural purposes) will be de-silted and stabilised (if required). Permanent final landform drainage structures will be designed and constructed in accordance with best practice guidelines including Landcom (2004) *Managing Urban Stormwater: Soils and Construction Volume 1* and DECC (2008) *Managing Urban Stormwater: Soils and Construction Volume 2.*
Final Void	F	Final voids will be safe, profiled for long-term, stability and non-polluting. Low walls will be battered back generally to between 10° and 18°. High walls will be constructed and stabilised in accordance with design criteria developed by geotechnical engineers. Final void batters will be rehabilitated with suitable vegetation, and the OC4 final void maintained post open cut mining to allow ongoing access to potential coal reserves (until agreed otherwise with relevant regulatory authorities).
Retained Infrastructure (subject to agreement with relevant regulatory authorities)	G	Retain some infrastructure (e.g. water supply and distribution structures and access tracks) for future exploration/mining purposes or for passive recreation, educational and transport purposes.

After: Moolarben Coal Complex – Rehabilitation Management Plan.

For each secondary domain listed in Table 11, the Rehabilitation Management Plan describes performance indicators and completion criteria relating to:

- landform establishment;
- growth medium development;
- ecosystem and land use establishment; and
- ecosystem and land use sustainability.

Typical overstorey, understorey and ground cover revegetation species for each of these secondary domains are specified in the Rehabilitation Management Plan.

7.2 REHABILITATION OF MODIFICATION DISTURBANCE AREAS

The minor additional disturbance areas proposed for the Modification would be rehabilitated consistent with the rehabilitation principles, objectives and implementation methods of the surrounding areas of the Moolarben Coal Complex.

The additional surface infrastructure associated with the Modification would be decommissioned prior to mine closure and the areas rehabilitated with native vegetation (i.e. a combination of Secondary Domains A [Woodland] and B [Forest] and native grasslands) unless otherwise agreed and required for future land management (i.e. fire control) (Figure 17).

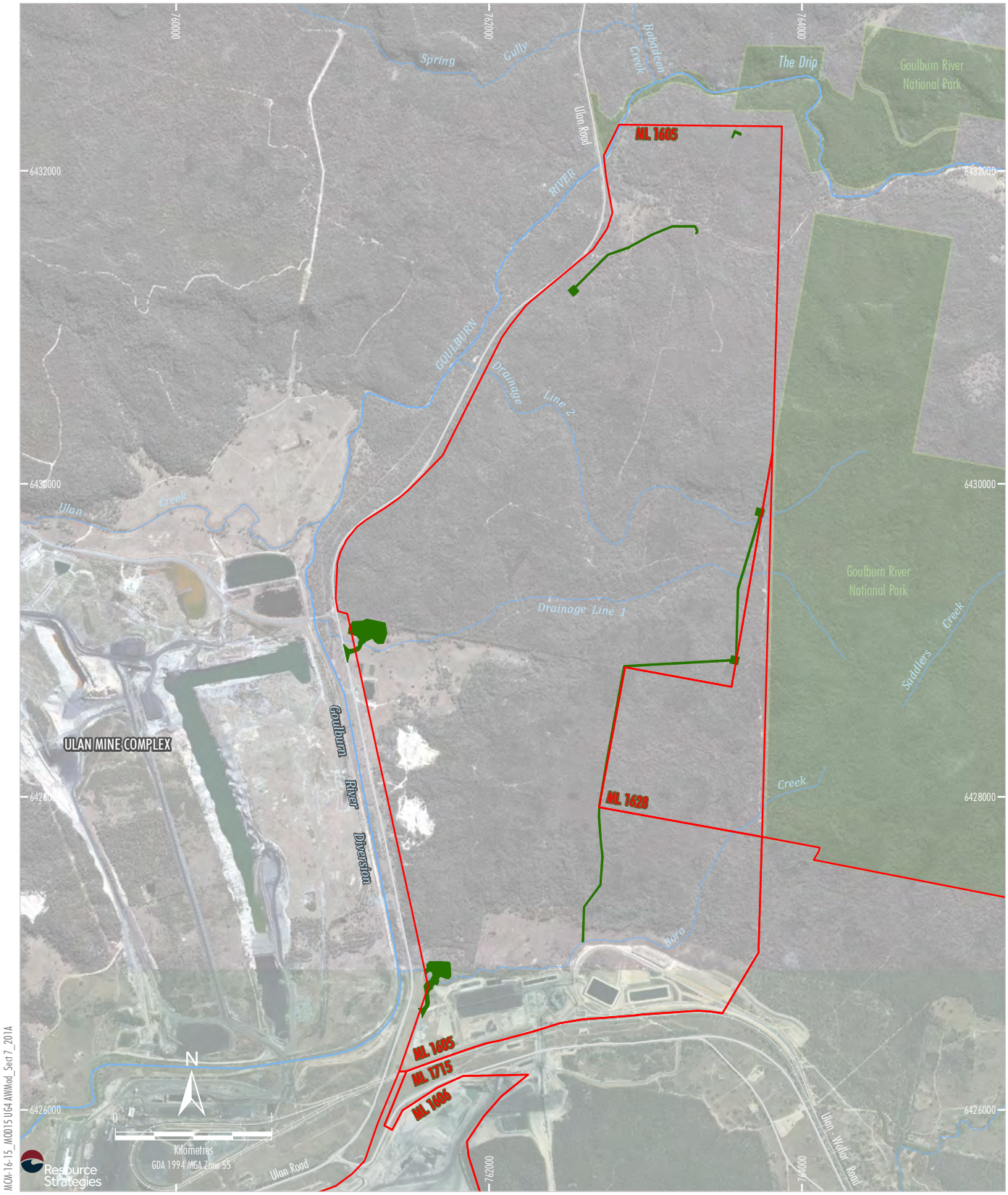
7.3 MITIGATION MEASURES, MANAGEMENT AND MONITORING

Monitoring of progressive rehabilitation would continue in accordance with the Rehabilitation Management Plan. The monitoring results would be used to confirm rehabilitation is achieving the performance indicators and completion criteria specified in the Rehabilitation Management Plan relating to:

- landform establishment;
- growth medium development;
- ecosystem and land use establishment; and
- ecosystem and land use sustainability.

The Rehabilitation Management Plan would be reviewed and revised as necessary for the Modification for the additional disturbance areas.

These changes would also be included in an updated version of the MOP for the Moolarben Coal Complex.



LEGEND

Mining Lease Boundary

UG4 Ancillary Works Modification

Rehabilitation Native Vegetation

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)
Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBENCOAL

MOOLARBEN COAL COMPLEX

Indicative Areas of Final Rehabilitation

Figure 17

8 EVALUATION OF MERITS

The Moolarben Coal Project Stage 1 was approved by the NSW Minister for Planning on 6 September 2007 (Project Approval [05_0117]).

The Modification involves minor additional surface infrastructure to provide for the safe and efficient mining of the approved UG4 underground mining area.

Proposed changes to the approved Moolarben Coal Complex for the Modification are related to the following:

- construction and operation of a new downcast ventilation shaft and associated compound above the western extent of UG4;
- construction of a new access road (with appropriate surface drainage and sediment control infrastructure) and intersection with Ulan Road to access the new ventilation shaft compound;
- construction and operation of a new remote services infrastructure area above the UG4 mains, including a new internal access road that crosses Bora Creek;
- augmentations to the approved dewatering borefield, including relocating/expanding four of the ten approved dewatering sites above UG4, and construction of additional access tracks and infrastructure corridors; and
- other minor ancillary infrastructure to support the safe and efficient operation of the UG4 underground mining area.

The modification would **not** involve any changes to the following currently approved operations:

- underground mining operations;
- open cut mining operations;
- coal handling and preparation;
- product coal transport;
- waste rock management;
- coal reject management; and
- peak workforce numbers.

8.1 JUSTIFICATION FOR MODIFICATION

The surface infrastructure that is the subject of the Modification would provide for the safe and efficient mining of the approved UG4 underground mining domain.

This infrastructure would require minor additional surface disturbance (up to approximately 12.5 ha).

While alternatives to the Modification components have been considered, the proposed layout for the Modification is considered justified given that:

- it would improve the safety and efficiency of UG4 operations;
- it would result in reduced operational costs compared to other alternatives;
- the infrastructure relies on existing or approved disturbance areas to the greatest extent practicable;
- the additional surface disturbance required for the Modification would be offset in accordance with the *Biodiversity Conservation Act, 2016* to improve or maintain biodiversity values in the long-term; and
- the Modification can be constructed and operated in accordance with all other existing environmental limits and performance measures for the Moolarben Coal Complex.

8.2 STAKEHOLDER ENGAGEMENT OVERVIEW

MCO has consulted with the following stakeholders during the development of Modification documentation:

- DPIE;
- regulatory agencies and local councils;
- neighbouring mines;
- asset owners;
- Registered Aboriginal Parties; and
- local communities, including affected landowners.

Key comments raised during consultation have been addressed, including:

- The location of dewatering sites to the Drip and Goulburn River;
    - The Modification does not involve changes to the approved underground mining layout, with no change to the offset distance between longwalls and the Goulburn River. As a result, the Modification would not change groundwater impacts beyond those associated with the approved UG4 operations.

- Disturbance of existing offsets and the identification of suitable replacement offsets;
    - MCO would provide a replacement offset that contains the same vegetation communities (in a similar, or better condition) as those being removed by the Modification within Offset Area 2 (Section 6.2 and Appendix B).
- The proximity of the remote services infrastructure area to surrounding watercourses;
    - The disturbance areas associated with the Modification are small and would be managed using suitable best practice measures in accordance with Landcom (2004) and the Surface Water Management Plan (Sections 6.3 and 6.3.2 and Appendices C and D).
- Proposed impacts to the heritage site at Bora Creek;
    - The Heritage Management Plan would be reviewed and updated to incorporate the Modification (e.g. to include additional sites identified during the July 2019 survey) (Section 6.1 and Appendix A).
- Portions of access track and services corridor that have not been previously surveyed prior to the Modification Report submission;
    - Niche (2019) has confirmed that the portion of the access track and services corridor that was not surveyed is likely to have identical archaeological character as the adjacent area that was subject to detailed surveys. In addition, this area would be subject to additional surveys prior to the construction of the proposed access track and services corridor (discussed in detail in Section 6.1 and Appendix A).
- Impacts to Saddlers Creek Road Reserve on visual amenity;
    - The services corridor has been located adjacent to Saddlers Creek Road to minimise the extent of surface disturbance required (Section 6.8.1). Services will be buried along Saddlers Creek Road.
- Impacts to the condition of Saddlers Creek Road reserve during construction;
    - Maintenance of the track will be undertaken during construction works for the northern dewatering sites and services corridor (Section 6.6.3).

8.3 CONSOLIDATED SUMMARY OF ENVIRONMENTAL MANAGEMENT AND MONITORING MEASURES

MCO has identified potential impacts of the Modification on the environment and have proposed measures that would be implemented to avoid, minimise, mitigate and/or offset the potential impacts.

In summary:

- Management of potential direct and indirect impacts to items of heritage significance would be incorporated into the Heritage Management Plan in consultation with RAPs.
- MCO would continue to implement management and mitigation measures at the Moolarben Coal Complex in accordance with the approved Biodiversity Management Plan which would be updated to incorporate the Modification.
- The existing Biodiversity Offset Strategy for the Moolarben Coal Complex would be augmented with additional biodiversity offsets for the Modification, including a replacement offset to compensate for impacts to Offset Area 2.
- MCO would implement surface erosion and sediment controls in accordance with Landcom (2004) for the minor additional infrastructure areas of the Modification.
- The Modification would continue to comply with Project Approval noise and air quality limits at all privately-owned receivers.
- The minor changes to traffic conditions that would occur as a result of the Modification would have negligible impact on the operation of the existing road network. Existing intersections would continue to operate with low delays to vehicles and spare capacity, and the proposed new intersection would operate at a good level of service, with short delays to turning vehicles and spare capacity.
- The Modification does not involve changes to the approved underground mining layout. As a result, the Modification would not change groundwater impacts beyond those associated with the approved UG4 operations.
- As the Modification does not involve any change in approved coal production, there would be no increase in associated Scope 3 greenhouse gas emissions from coal combustion. Any additional Scope 1 and 2 greenhouse gas emissions would be negligible.

8.4 CONCLUSION

In consideration of the above, the Modification is considered to have merit.

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9.1 REFERENCES

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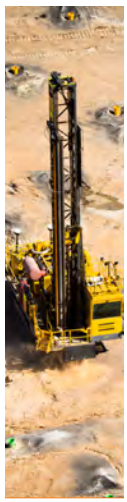
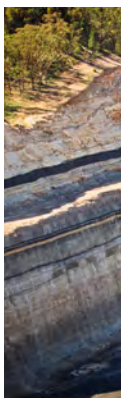
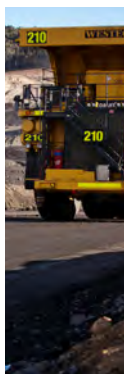
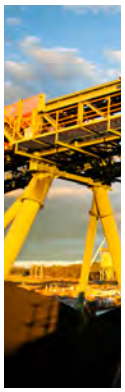
9.2 ABBREVIATIONS

ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
Australia ICOMOS	*The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*
AWS	Automatic Weather Station
BAM	Biodiversity Assessment Method
BC Act	NSW *Biodiversity Conservation Act, 2016*
BDAR	Biodiversity Development Assessment Report
CCC	Community Consultative Committee
CEEC	Critically Endangered Ecological Community
CHPP	Coal Handling Preparation Plant
Credit Calculator	Credit Calculator for Major Projects and BioBanking
DECC	NSW Department of Environment and Climate Change (now Biodiversity and Conservation Division)
DECCW	NSW Department of Environment, Climate Change and Water
DEE	Commonwealth Department of Environment and Energy
DPE	NSW Department of Planning and Environment (now Department of Planning, Industry and Environment)
DPIE	NSW Department of Planning, Industry and Environment
DRG	NSW Division of Resources and Geosciences
EEC	Endangered Ecological Community
EL	Exploration Licence
ELA	Eco Logical Australia
EPA	NSW Environment Protection Authority
EP&A Act	NSW *Environmental Planning and Assessment Act, 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation, 2000*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act,1999*
EPL	Environment Protection Licence
ESD	ecologically sustainable development
ha	hectare
IBRA	Interim Biogeographic Regionalisation for Australia
IPC	Independent Planning Commission
km	kilometres
LGA	Local Government Area
m	metres
m/s	metres per second
MCM	Moolarben Coal Mines Pty Ltd
MCO	Moolarben Coal Operations Pty Ltd
Mining SEPP	NSW *State Environmental Planning Policy (Mining Petroleum Production and Extractive Industries) 2007*
ML	Mining Lease
mm	millimetres
Modification	UG4 Ancillary Modification
Modification 14	Open Cut Optimisation Modification
Moolarben Coal Project Stage 1	State Significant Development Project Approval (05_0117)
Moolarben Coal Project Stage 2	State Significant Development Project Approval (08_0135)
MOP	Mining Operations Plan
Mt	million tonnes
Mtpa	million tonnes per annum
MWR LEP	*Mid-Western Regional Local Environmental Plan, 2012*
MWRC	Mid-Western Regional Council
NGERS	National Greenhouse Gas and Energy Reporting Scheme
Niche	Niche Environment and Heritage Pty Ltd
NPW Regulation	National Parks and Wildlife Regulation 2009

NPWS	National Parks and Wildlife Services
NSW	New South Wales
NSW Offset Policy	*NSW Biodiversity Offsets Policy for Major Projects*
NRAR	Natural Resources Access Regulator
OC1	Open Cut Pit 1
OC4	Open Cut Pit 4
OEH	NSW Office of Environment and Heritage
PCTs	Plant Community Types
$PM_{2.5}$	particulate matter ≤ 2.5 µm
PM_{10}	particulate matter ≤ 10 µm
RAPs	Registered Aboriginal Parties
RMS	NSW Roads and Maritime Services
ROM	run-of-mine
SEPP 44	NSW *State Environmental Planning Policy No 44 (Koala Habitat Protection)*
SLR	SLR Consulting
SSD	State Significant Development
TAS	Todoroski Air Sciences
TSP	total suspended particulate
TEOM	Tapered Element Oscillating Mass Balance
TTPP	The Transport Planning Partnership
UG1	Underground Mining Area 1
UG2	Underground Mining Area 2
UG4	Underground Mining Area 4
UCML	Ulan Coal Mines Limited
WCPL	Wilpinjong Coal Mine
Yancoal	Yancoal Australia Limited





MOOLARBENCOAL

Moolarben Coal Complex
UG4 Ancillary Works Modification

Modification Report

ATTACHMENT 1

STAGE 1 PROJECT APPROVAL (05_0117)

YANCOAL
兖煤澳大利亚有限公司

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in schedule 1, subject to the conditions in schedules 2 to 5.

These conditions are required to:
- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Red type represents the November 2008 modification (MOD 1)
Blue type represents the December 2008 modification (MOD 2)
Green type represents the June 2009 modification (MOD 4)
Purple type represents the October 2009 modification (MOD 5)
Orange type represents the January 2010 modification (MOD 6)
Pink type represents the May 2010 modification (MOD 8)
Violet text represents the January 2011 modification (MOD 7)
Aqua text represents the June 2014 modification (MOD 9)
Maroon text represents the January 2015 modification (MOD3)
Olive green type represents the April 2015 modification (MOD 10)
Brown type represents the July 2015 modification (MOD 11)
Light green type represents the February 2016 modification (MOD 12)
Gold type represents the December 2016 Modification (MOD 13)

Frank Sartor MP
Minister for Planning

Sydney 2007

SCHEDULE 1

Application Number:	05_0117
Proponent:	Moolarben Coal Mines Pty Limited
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Moolarben Coal Project Stage 1

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DEFINITIONS

Annual review	The review required by condition 4 of Schedule 5
ARTC	Australian Rail Track Corporation Ltd
BCA	Building Code of Australia
Blast misfires	The failure of one or more holes in a blast pattern to initiate
Built features	Includes any building or work erected or constructed on land, and includes dwellings and infrastructure such as any formed road, street, path, walk, or driveway; any pipeline, water, sewer, telephone, gas or other service main
CCC	Community Consultative Committee
Conditions of this approval	Conditions contained in Schedules 2 to 5 inclusive
Council	Mid-Western Regional Council
CPI	Australian Bureau of Statistics Consumer Price Index
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DEC	NSW Department of Education and Communities
Department	Department of Planning and Environment
DPI	Department of Primary Industries
DPI Water	Department of Primary Industries Water
DRE	Division of Resources and Energy (within Department of Industry)
EA	The Moolarben Coal Project Environmental Assessment, Volumes 1-5, dated September 2006, as modified by the: • Preferred Project Report dated December 2006 and associated response to submissions; • Application to Make Modifications to the Project Approval for the Moolarben Coal Project, dated August 2008 (MOD 1); • Environmental Assessment - Section 75W Modification Application, dated December 2008 (MOD 2); • Relevant aspects of the Environmental Assessment for Stage 2 of the Moolarben Coal Project, dated March 2009, and associated environmental assessment (MOD 3); • Documentation in Support of the Balloon Loop Modification, dated April 2009 (MOD 4); • Environmental Assessment - Section 75W Modification Application, dated July 2009, associated response to submissions dated August 2009, and supplementary information dated September 2009 (MOD 5); • Environmental Assessment - Section 75W Modification Application, prepared by Coffey Natural Systems and dated December 2009 (MOD 6); • Environmental Assessment – Section 75W Modification Application, dated March 2010, and associated response to submissions dated June 2010, and supplementary information dated 2 November 2010 and 6 December 2010 (MOD 7); • Environmental Assessment – Section 75W Modification Application, dated April 2010 (MOD 8); • Environmental Assessment for the Moolarben Coal Project Stage 1 Optimisation Modification, dated May 2013, associated response to submissions dated September 2013, and supplementary information dated 2 October 2013, 14 October 2013 and 15 October 2013 (MOD 9); • Modification Application 05_0117 MOD 10 and accompanying letters dated 24 February 2015 and 17 March 2015 (MOD 10); • OC4 South West Modification Environmental Assessment, dated April 2015 and associated response to submission dated June 2015 (MOD 11); • UG1 Optimisation Modification Environmental Assessment, dated June 2015 and associated response to submissions dated September 2015 (MOD 12); and • Modification Application 05_0117 MOD 13 and accompanying letter dated 24 November 2016.
EEC	Endangered ecological community, as defined under the TSC Act
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence under the POEO Act
Evening	Evening is defined as the period from 6pm to 10pm
Feasible	Feasible relates to the engineering coordinates and what is practical to build or implement
Heritage Item	An item as defined under the *Heritage Act 1977* and/or an Aboriginal Object or Aboriginal Place as defined under the *National Parks and Wildlife Act 1974*
Incident	A set of circumstances that:

	• causes, or threatens to cause, material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this approval
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 3 and 5 of this approval where it is defined to mean the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Mine water	Water that accumulates within, or drains from active mining and infrastructure areas (synonymous with dirty water)
Mining operations	Includes the removal and emplacement of overburden, and extraction, processing, handling, storage and transport of coal on site
Minister	Minister for Planning, or delegate
Minor	Not very large, important or serious
Mitigation	Activities associated with reducing the impacts of the project
Moolarben mine complex	The combined operations of the Moolarben Stage 1 and Stage 2 mines
Moolarben Stage 1 mine	The approved mining operations and associated development enclosed within the blue dashed line on the figure in Appendix 2.
Moolarben Stage 1 mine surface infrastructure area	The approved surface infrastructure area, including the coal handling and preparation plant and the rail loop, as shown on the figures in Appendix 2
Moolarben Stage 2 mine	The approved mining operations and associated development enclosed within the yellow dashed line on the figure in Appendix 2.
Mtpa	Million tonnes per annum
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NP&W Act	*National Parks & Wildlife Act 1974*
OEH	Office of Environment and Heritage
P&I	NSW Planning & Infrastructure
POEO Act	*Protection of the Environment Operations Act 1997*
Privately-owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary)
Project	The development as described in the EA, and adequately modified by other EAs
Proponent	Moolarben Coal Mines Pty Limited, or any other person or persons who rely on this approval to carry out the development that is subject to this approval
Public Infrastructure	Linear and related infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc.
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Rehabilitation	The restoration of land disturbed by the project to a good condition, and ensure it is safe, stable and non-polluting
RFS	Rural Fire Service
RMS	Roads and Maritime Services
ROM	Run-of-mine
Secretary	Secretary of the Department, or nominee
Secretary Industry	Secretary of NSW Department of Industry, or equivalent position
Site	The land referred to in Appendix 1
Statement of commitments	The Proponent's commitments in Appendix 3
TSC Act	*Threatened Species Conservation Act 1995*
Ulan Road Strategy	The strategy prepared by the Arrb Group Limited, dated December 2011 as amended by the Director-General's letter dated 25 May 2013
VPA	Voluntary planning agreement under the EP&A Act

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the project.

TERMS OF APPROVAL

2. The Proponent shall carry out the project:
   (a) generally in accordance with the EA; and
   (b) in accordance with the statement of commitments and the conditions of this approval.

   Notes:
   - *The general layout of the project is shown in Appendix 2; and*
   - *The statement of commitments is shown in Appendix 3.*

3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

4. The proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
   (a) any reports, plans, programs, strategies, reviews, audits or correspondence that are submitted in accordance with this approval;
   (b) any reports, reviews or audits commissioned by the Department regarding compliance with this approval;
   (c) the implementation of any actions or measures contained in these documents

LIMITS ON APPROVAL

Mining Operations

5. The Proponent may carry out mining operations on the site until 31 December 2038.

   Note: Under this approval, the Proponent is required to rehabilitate the site and perform additional undertakings to the satisfaction of both the Secretary and the Secretary Industry. Consequently, this approval will continue to apply in all other respects other than the right to conduct mining operations until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.

Longwall Sequencing

5A. The Proponent shall ensure longwall mining of panels LW9 to LW14 (as marked in figure 7.1 of Appendix 7):
   (a) does not commence until LW1-LW8 have been completed; and
   (b) progresses in the sequence numbered, i.e. panel LW9 is to be completed first and panel LW14 is to be completed last.

   Note: The Proponent is also required to satisfy the requirements of condition 78A of Schedule 3, prior to the commencement of mining in each longwall panel LW9-LW14.

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Coal Extraction

6. The Proponent shall not extract more than:
   (a) 8 million tonnes of ROM coal from the open-cut mining operations of the project in any calendar year except 2015 and 2016;
   (b) 9 million tonnes of ROM coal from the open-cut mining operations of the project in the calendar years 2015 and 2016; and
   (c) 8 million tonnes total of ROM coal from the underground mining operations of the project in any calendar year.

Coal Handling and Processing

7. The Proponent shall not:
   (a) wash more than 13 million tonnes of coal at the coal handling and preparation plant on site in any calendar year, except in the year 2017;
   (b) handle a total of more than 13 million tonnes of ROM coal on site that have been extracted from the open cut mining operations at the Moolarben Coal Complex in any calendar year; and

(c) handle a total of more than 8 million tonnes of ROM coal on site that have been extracted from the underground mining operations at the Moolarben mine complex in any calendar year.

7A. In the 2017 calendar year, the Proponent may wash up to 13.5 million tonnes of coal at the coal handling and preparation plant.

Coal Transport

8. The Proponent shall ensure that:
   (a) all product coal is transported from the site by rail; and
   (b) no more than 7 laden trains leave the site each day on average when calculated over any calendar year;
   (c) no more than 9 laden trains leave the site each day; and
   (d) no more than 18 million tonnes are transported from the site in any calendar year

STRUCTURAL ADEQUACY

9. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:
- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

DEMOLITION

10. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

PROTECTION OF PUBLIC INFRASTRUCTURE

11. Unless the Proponent and the applicable authority agree otherwise, the Proponent shall:
   (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and
   (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.

Note: This condition does not apply to any damage to public infrastructure subject to compensation payable under the Mine Subsidence Compensation Act 1961, or to damage to roads caused as a result of general road usage.

OPERATION OF PLANT AND EQUIPMENT

12. The Proponent shall ensure that all plant and equipment used at the site, or in connection with the project, is:
   (a) maintained in a proper and efficient condition; and
   (b) operated in a proper and efficient manner.

STAGED SUBMISSION OF STRATEGIES, PLANS OR PROGRAMS

13. With the approval of the Secretary, the Proponent may:
   (a) submit any strategy, plan or program required by this approval on a progressive basis; and
   (b) combine any strategy, plan, program, review, audit or report required by this approval with any similar strategy, plan, program, review, audit or report required under Project Approval 08_0135 for the Moolarben Coal Project Stage 2.

Notes:
- *While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

13A. With the agreement of the Secretary, the Proponent may prepare a revision of or a stage of a strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this consent.

VOLUNTARY PLANNING AGREEMENT

14. Within 12 months of this approval, the Proponent shall enter into a planning agreement with Council in accordance with:

(a) Division 6 of Part 4 of the EP&A Act; and
(b) the terms of the Proponent's offer to the Minister on 4 September 2007, which includes the matters set out in Appendix 4.

SCHEDULE 3
ENVIRONMENTAL CONDITIONS - GENERAL

NOISE

Noise Criteria

Acquisition Upon Request

1A. Upon receiving a written request for acquisition from an owner of the land listed in Table 1A, the Proponent shall acquire the land in accordance with the procedures in conditions 10 and 11 of Schedule 4.

Table 1A: Land subject to acquisition upon request

Receiver ID
32

Note: To interpret the land referred to in Table 1, see the applicable figures in Appendix 5.

Transitional Acquisition and Mitigation Arrangements

1B. (deleted)

1. The Proponent shall ensure that the noise generated by the Moolarben mine complex does not exceed the noise criteria in Table 1 at any residence on privately-owned land or the other specified locations.

Table 1: Noise criteria dB(A)

Land Number	Day $L_{Aeq(15min)}$	Evening $L_{Aeq(15min)}$	Night	
			$L_{Aeq(15min)}$	$L_{A1(1min)}$
30, 63	39	39	39	45
70	37	37	37	45
75	36	36	36	45
31	36	35	35	45
All other privately owned residences	35	35	35	45
Ulan Primary School		35 (internal) when in use		-
Ulan Anglican Church		35 (internal) when in use		-
Goulburn River National Park Munghorn Gap Nature Reserve		50 when in use		-

Note: To interpret the land referred to in Table 1 see the applicable figures in Appendix 5.

Noise generated by the Moolarben mine complex is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

Land Acquisition Criteria

2. If the noise generated by the Moolarben mine complex exceeds the criteria in Table 2A, , then upon receiving a written request for acquisition from an owner of the land listed in Table 2A, the Proponent shall acquire the land in accordance with the procedures in conditions 10 and 11 of Schedule 4.

Table 2A: Acquisition criteria dB(A) $L_{Aeq\ (15min)}$

Receiver ID	Day ($L_{Aeq\ (15min)}$)	Evening ($L_{Aeq\ (15min)}$)	Night ($L_{Aeq\ (15min)}$)
63	43	43	42
All other privately-owned residences	40	40	40

Note: To interpret the land referred to Table 2A, see the applicable figures in Appendix 5.

3. If the noise generated by the Moolarben mine complex contributes to exceedances of the relevant criteria in Table 2 on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 10-11 of Schedule 4.

Table 2: Land acquisition criteria

Day/Evening/Night $L_{Aeq(period)}$	Receiver
55/50/45	All privately-owned land

Note: Noise generated by the complex is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

Noise Mitigation Criteria

4. If the noise generated by the Moolarben mine complex exceeds the criteria in Table 3A, then upon receiving a written request the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the project on the residence.

If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

Table 3A: Mitigation criteria dB(A) LAeq (15min)

Receiver ID	Day ($L_{Aeq\ (period)}$)	Evening ($L_{Aeq\ (15min)}$)	Night ($L_{Aeq\ (15min)}$)
63	40	40	39
All privately owned residences other than those in Table 3	37	37	37

Note: To interpret the land referred to Table 3A, see the applicable figures in Appendix 5.

Mitigation Upon Request

5. Upon receiving a written request from the owner of the residence on the land listed in Table 3, the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the Moolarben mine complex on the residence.

If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

Table 3: Land subject to additional noise mitigation upon request

Receiver ID
30

Note: To interpret the land referred to in Table 3 see the applicable figures in Appendix 5. However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

Operating Conditions

6. The Proponent shall:
   (a) implement best management practice to minimise the operational, road and rail noise of the project;
   (b) operate a comprehensive noise management system on site that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning of

mining operations, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval;

(c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply (see Appendix 6);

(d) only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL;

(e) co-ordinate noise management with the noise management at Ulan and Wilpinjong mines to minimise cumulative noise impacts; and

(f) carry out regular monitoring to determine whether the project is complying with the relevant conditions of this approval,

to the satisfaction of the Secretary.

Noise Management Plan

7. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:

(a) be prepared in consultation with the EPA and be submitted to the Secretary for approval by 31 March 2015;

(b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this approval;

(c) describe the proposed noise management system in detail;

(d) include a monitoring program that:

- uses attended noise monitoring to evaluate compliance of the project against the noise criteria in this approval;
- includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a better indicator of compliance with the noise criteria in this approval and trigger for further attended monitoring);
- evaluates and reports on:
  - the effectiveness of the noise management system; and
  - compliance against the noise operating conditions; and
- defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.

BLASTING

Blasting Criteria

8. The Proponent shall ensure that the blasting on the Moolarben mine complex does not cause exceedances of the criteria in Table 4.

Table 4: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately owned land, churches and schools	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
All public infrastructure	-	50 (or a limit determined by the structural design methodology in AS 2187.2-2006, or its latest version, or other alternative limit for public infrastructure, to the satisfaction of the Secretary)	0%

However, these criteria do not apply if the Proponent has a written agreement with the relevant owner, and has advised the Department in writing of the terms of this agreement.

Blasting Hours

9. The Proponent shall only carry out blasting on the site between 9am and 5pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.

Blasting Frequency

10. The Proponent may carry out a maximum of:
    (a) 2 blasts a day; and
    (b) 9 blasts a week, averaged over a calendar year,
    at the Moolarben mine complex.

    This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, blasts misfires or blasts required to ensure the safety of the mine or its workers.

    Note: For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.

Property Inspections

11. If the Proponent receives a written request from the owner of any privately-owned land within 2 kilometres of any approved open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Proponent shall:
    (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:
        - establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and
        - identify measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/or structures; and
    (b) give the landowner a copy of the new or updated property inspection report.

    If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.

Property Investigations

12. If the owner of any privately-owned land claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim the Proponent shall:
    (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and
    (b) give the landowner a copy of the property investigation report.

    If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Secretary.

    If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.

Operating Conditions

13. The Proponent shall:
    (a) implement best practice blasting management to:
        - protect the safety of people and livestock in the surrounding area;
        - protect public or private infrastructure/property in the surrounding area from any damage; and
        - minimise the dust and fume emissions of any blasting;
    (b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting Schedule on site; and
    (c) co-ordinate the timing of blasting on site with the timing of blasting at the Ulan and Wilpinjong mines to minimise cumulative blasting impacts,
    to the satisfaction of the Secretary.

14. The Proponent shall not undertake blasting on site within 500 metres of:
    (a) any public road;
    (b) the Gulgong to Sandy Hollow Railway Line;
    (c) the Wollar-Wellington 330kV Transmission Line; or
    (d) any land outside the site not owned by the Proponent,
    unless the Proponent has:
        - demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock or damaging the infrastructure and/or other buildings and structures; and

- updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the infrastructure or land; or
- a written agreement with the relevant infrastructure owner or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Proponent has advised the Department in writing of the terms of this agreement.

Blast Management Plan

15. The Proponent shall prepare and implement a Blast Management Plan for the project prior to undertaking any blasting on site to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with the EPA and be submitted to the Secretary for approval by 31 March 2015;
    (b) describe the measures that would be implemented to ensure compliance with the blast criteria and operating conditions of this approval;
    (c) propose and justify any alternative ground vibration limits for public infrastructure in the vicinity of the site (if relevant); and
    (d) include a monitoring program for evaluating compliance with the blasting criteria and operating conditions of this approval.

AIR QUALITY

Odour

16. The Proponent shall ensure that no offensive odours, as defined under the POEO Act, are emitted from the site.

Air Quality Criteria

17. The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 5, 6 and 7 at any residence on privately owned land.

Table 5: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	[d]Criterion
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 6: Short term impact assessment criterion for particulate matter

Pollutant	Averaging period	[d]Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 7: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
[c]Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables 5-7:

[a] Cumulative (i.e. incremental increase in concentrations due to the Moolarben mine complex plus background concentrations due to all other sources);

[b] Incremental impact (i.e. incremental increase in concentrations due to the Moolarben mine complex on its own);

[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and

[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents, illegal activities or any other activity agreed by the Secretary.

Mine-owned Land

18. The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 8, 9 and 10 at any occupied residence on mine-owned land (including land owned by another mine) unless:

(a) the tenant and landowner has been notified of any health risks associated with such exceedances in accordance with the notification requirements under Schedule 4 of this approval;
(b) the tenant of any land owned by the Proponent can terminate their tenancy agreement without penalty at any time, subject to giving reasonable notice, and the Proponent uses its best endeavours to provide assistance with relocation and sourcing of alternative accommodation;
(c) air mitigation measures such as air filters, a first flush roof water drainage system and/or air conditioning) are installed at the residence, if requested by the tenant and landowner (if the residences is owned by another mine);
(d) particulate matter air quality monitoring is regularly undertaken to inform the tenant and landowner of the actual particulate emissions; and
(e) data from this monitoring is presented to the tenant in an appropriate format, for a medical practitioner to assist the tenant in making informed decisions on the health risks associated with occupying the property,

to the satisfaction of the Secretary.

Air Quality Acquisition Criteria

19. If particulate matter emissions generated by the Moolarben mine complex exceed the incremental criteria, or contribute to an exceedance of the relevant cumulative criteria, in Tables 8, 9 and 10 at any residence on privately-owned land or on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land in accordance with the procedures in conditions 10-11 of Schedule 4.

Table 8: Long term land acquisition criteria for particulate matter

Pollutant	Averaging period	[d]Criterion
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 9: Short term land acquisition criteria for particulate matter

Pollutant	Averaging period	[d] Criterion	Basis
Particulate matter < 10 µm (PM10)	24 hour	[b] 50 µg/m^3	Increment [b]

Table 10: Long term land acquisition criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables 8-10:

[a] Cumulative (i.e. increm ental increase in concentrations due to the Moolarben mine complex plus background concentrations due to all other sources);

[b] Incremental impact (i.e. incremental increase in concentrations due to the Moolarben mine complex on its own);

[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and

[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents, illegal activities or any other activity agreed by the Secretary.

Operating Conditions

20. The Proponent shall:
(a) implement best management practice to minimise the off-site odour, fume and dust emissions of the project;
(b) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site;
(c) minimise any visible off-site air pollution generated by the project;
(d) minimise the surface disturbance of the site;
(e) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this approval;
(f) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Note d under Table 9); and
(g) co-ordinate the air quality management on site with the air quality management at the Ulan and Wilpinjong mines to minimise cumulative air quality impacts,

to the satisfaction of the Secretary.

Air Quality Management Plan

20A. The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:

(a) be prepared in consultation with the EPA and be submitted to the Secretary for approval by 31 March 2015;

(b) describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this approval:

(c) describe the air quality management system;

(d) include an air quality monitoring program that:

- uses a combination of real-time and supplementary monitors to evaluate the performance of the project against the air quality criteria in this approval;
- adequately supports the air quality management system;
- evaluates and reports on the:
  - the effectiveness of the air quality management system; and
  - compliance against the air quality operating conditions;
- defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.

METEOROLOGICAL MONITORING

20B. For the life of the project, the Proponent shall ensure that there is a meteorological station in the vicinity of the site that:

(a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline; and

(b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the NSW Industrial Noise Policy, unless a suitable alternative is approved by the Secretary following consultation with the EPA.

ULAN PUBLIC SCHOOL

20C. The Proponent shall consult with DEC and, if requested:

(a) implement agreed reasonable and feasible measures to ameliorate potential noise and/or dust impacts to Ulan Public School; or

(b) on a reasonable basis relating to the adverse effect of noise and/or dust from the project, contribute to or meet reasonable costs toward relocating the school.

21-25. (deleted)

26-28. (deleted)

WATER

Water Supply

29. The Proponent shall ensure that:

(a) it has sufficient water for all stages of the project, and if necessary, adjust the scale of operations on site to match its available water supply; and

(b) any water supply constraints do not compromise any aspect of the environmental performance of the mine.

Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Proponent is required to obtain the necessary water licences for the project.

Compensatory Water Supply

30. The Proponent shall provide a compensatory water supply to any landowner of privately owned land whose water supply is adversely and directly impacted (other than an impact that is negligible) as a result of the project, in consultation with DPI Water, and to the satisfaction of the Secretary.

The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified.

If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.

Water Pollution

31. Unless an EPL authorises otherwise, the Proponent shall comply with section 120 of the POEO Act.

Water Management Performance Measures

32. The Proponent shall comply with the performance measures in Table 11 to the satisfaction of the Secretary.

Table 11: Water Management Performance Measures

Feature	Performance Measure
Water Management - General	• Minimise cumulative water impacts with the other mines in the region • Maximise water sharing with the other mines in the region • Minimise the use of clean water on site
The Drip	• Nil
Construction and operation of linear infrastructure	• Design, install and maintain erosion and sediment controls generally in accordance with the series Managing Urban Stormwater: Soils and Construction including Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads • Design, install and maintain the infrastructure within 40 m of watercourses generally in accordance with the *Guidelines for Controlled Activities on Waterfront Land (DPI 2007)*, or its latest version • Design, installation and maintenance of creek crossings generally in accordance with the Policy and Guidelines for Fish Friendly Waterway Crossings (NSW Fisheries, 2003) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003), or their latest versions
Mine Sediment Dams	• Design, install and maintain the dams generally in accordance with the series Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries
Clean water diversion & storage infrastructure	• Use best endeavours to upgrade the existing clean water systems to capture and convey the 100 year ARI flood • Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site
Mine water storages	• Mine water storage infrastructure is designed to store a 50 year ARI 72 hour storm event • On-site storages (including tailings dams, mine infrastructure dams, groundwater storage and treatment dams) are suitably lined to comply with a permeability standard of $< 1 \times 10^{-9}$ m/s
Tailings, acid forming and potentially acid forming materials	In-pit emplacement, encapsulation or capping to prevent the migration of pollutants beyond the pit shell
In-pit emplacement of tailings, acid forming and potentially acid forming materials	• Emplacement, encapsulation and capping to prevent or minimise the migration of pollutants beyond the pit shell of seepage from out of pit emplacement areas • Adequate freeboard within the pit void to minimise the risk of discharge to surface waters
Chemical and hydrocarbon storage	• Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standard
Aquatic and riparian ecosystem, including the relevant sections of Moolarben Creek, Bora Creek and the Goulburn River	• Maintain or improve baseline channel stability • Develop site-specific in-stream water quality objectives in accordance with ANZECC 2000 and *Using the ANZECC Guidelines and Water Quality Objectives in NSW* procedures (DECC 2006), or its latest version

Water Management Plan

33. The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:

(a) be prepared in consultation with DPI Water and the EPA, by suitably qualified and experienced persons whose appointment has been approved by the Secretary and be revised and submitted to the Secretary for approval by 31 October 2016;

(a1) include reference to the National Water Quality Management Strategy;

(a2) include detailed performance criteria and describe measures to ensure that the Proponent complies with the Water Management Performance Measures (see Table 11);

(b) in addition to the standard requirements for management plans (see Condition 3 of Schedule 5), this plan must include a:

(i) Site Water Balance that:

- includes details of:
  - sources and security of water supply, including contingency planning for future reporting periods;
  - water use and management on site, including details of water sharing between neighbouring mining operations;
  - reporting procedures, including the preparation of a site water balance for each calendar year;
- describes the measures that would be implemented to:
  - minimise clean water use on site;
  - maximise water sharing with the other mines in the region;

(ii) Surface Water Management Plan, that includes:

- detailed baseline data on water flows and quality in the water bodies that could be affected by the project;
- a detailed description of the water management system on site;
- detailed plans, including design objectives and performance criteria, for the:
  - in-pit emplacement areas for tailings, acid forming and potentially acid forming materials;
  - final voids (see the Rehabilitation Objectives in Table 13);
- detailed performance criteria for the following, including trigger levels for investigating any potentially adverse impacts associated with the project:
  - the water management system;
  - downstream surface water quality;
  - downstream flooding impacts and
  - stream and riparian vegetation health for Moolarben Creek, Bora Creek, and the Goulburn River;
- a program to monitor and report on:
  - the effectiveness of the water management system; and
  - surface water flows and quality, stream and riparian vegetation health in the watercourses that could be affected by the project; and
  - downstream flooding impacts;
- reporting procedures for the results of the monitoring program; and
- a plan to respond to any exceedances of the performance criteria, and mitigate any adverse surface water impacts of the project;

(iii) Groundwater Management Plan, that includes:

- detailed baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the project;
- groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts and detailed justification for those trigger levels;
- a program to monitor and report on:
  - groundwater inflows to the underground and open cut mining operations;
  - the seepage/leachate from water storages, emplacements, backfilled voids and final voids;
  - background changes in groundwater yield/quality against mine-induced changes;
  - impacts of the project on:
    - regional and local (including alluvial) aquifers;
    - groundwater supply of potentially affected landowners; and
    - groundwater dependent ecosystems (including the Drip) and riparian vegetation;
  - a program to validate the groundwater model for the project, and compare the monitoring results with modelled predictions; and
- a plan to respond to any exceedances of the groundwater assessment criteria.

(iv) a protocol that has been prepared in consultation with the owners of the Ulan and Wilpinjong mines to:

- minimise cumulative water quality impacts;
- review opportunities of increased water sharing between these projects;
- co-ordinate water quality monitoring programs as far as practicable;

- undertake joint investigations/studies in relation to complaints/exceedences of trigger levels where cumulative impacts are considered likely; and
- co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.

BIODIVERSITY

Biodiversity Offset Strategy

34. The Proponent shall implement the biodiversity offset strategy for the project summarised in Table 12, and shown conceptually in Appendix 8, to the satisfaction of the Secretary.

Table 12: Summary of Biodiversity Offset Strategy

Area	Offset Type	Minimum Size Hectares
Area 3 Property 6	Conserve: • 6 ha of existing EEC Enhance and conserve: • 2.6 ha of regenerating EEC	8.6
Areas 1, 2 and 3 Properties 6, 10, 12, 13, 14 and 15	Enhance existing vegetation: • 1282 ha of native vegetation Revegetate: • 48 ha of existing disturbed land to EEC	1330
Area 1 Properties 12, 13, 14 and 15	Revegetate: • 153 ha of cleared land to native vegetation	153
Clark	Enhance existing vegetation: • 300 ha of existing native vegetation • 32 ha of EEC	332
Clifford	Enhance existing vegetation: • 19 ha of native vegetation • 62 ha of EEC	81
Elward	Enhance existing vegetation: • 146 ha of native vegetation • 24 ha of EEC	170
Property 5	Enhance existing vegetation: • 40 ha of native vegetation • 25 ha of EEC	65
Properties 24 and 25	Enhance existing vegetation: • 59 ha of native vegetation • 4 ha of EEC	63
Bobadeen	Enhance existing vegetation: • 8 ha of native vegetation • 159 ha of EEC	167
Moolarmoo	Enhance existing vegetation: • 25 ha of native vegetation • 19 ha of EEC	44

Note: The EEC referred to in this table is the White Box Yellow Box Blakely's Red Gum Woodland as defined under the TSC Act and White Box Yellow Box Blakely's Red Gum Grassy Woodland as defined under the EPBC Act.

Long Term Security of Offset

35. By the end of June 2015, unless otherwise agreed by the Secretary, the Proponent shall make suitable arrangements to provide appropriate long-term security for the offset areas in Table 12 in perpetuity, in consultation with OEH and to the satisfaction of the Secretary.

Note: The preferred mechanisms for the provision of long-term conservation security are via Biobanking Arrangements and additions to the OEH Estate.

Biodiversity Management Plan

36. The Proponent shall prepare and implement a Biodiversity Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with OEH and be submitted to the Secretary for approval by 31 March 2015;
    (b) describe the short, medium, and long term measures that would be implemented to:
        - manage the remnant vegetation and habitat on the site and in the offset areas;
        - minimise biodiversity impacts of the project; and

- implement the biodiversity offset strategy, including detailed performance and completion criteria;

(c) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);

(d) include a detailed description of the measures that would be implemented for:
- enhancing the quality of existing vegetation and fauna habitat;
- restoring native vegetation and fauna habitat on the biodiversity offset areas through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary);
- maximising the salvage of resources within the approved disturbance area - including vegetative, soil and cultural heritage resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area;
- rehabilitating the environmental bunds on site as soon as practicable and maintaining the landscaping on the bunds once it has been established;
- collecting and propagating seed;
- minimising the impacts on fauna on site, including undertaking pre-clearance surveys;
- managing any potential conflicts between the proposed restoration works in the biodiversity areas and any Aboriginal heritage values (both cultural and archaeological);
- managing salinity;
- controlling weeds and feral pests;
- controlling erosion;
- managing grazing and agriculture on site;
- controlling access; and
- bushfire management;

(e) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;

(f) identify the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to mitigate against these risks; and

(g) include details of who would be responsible for monitoring, reviewing, and implementing the plan.

Conservation Bond

37. By 30 June 2015, unless otherwise agreed by the Secretary, the Proponent shall lodge a Conservation Bond with the Department to ensure that the biodiversity offset strategy is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall be determined by:

(a) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and

(b) employing a suitably qualified quantity surveyor to verify the calculated costs,

to the satisfaction of the Secretary.

If the offset strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond.

If the offset strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the satisfactory completion of the relevant works.

Notes:
- *Existing bonds which have been paid for the Redhills, Area 1, Area 2 and Area 3 biodiversity offset areas remain current and are satisfactory to fulfill the requirements of this condition for those areas;*
- *Alternative funding arrangements for long-term management of the Biodiversity Offset Strategy, such as provision of capital and management funding as agreed by OEH as part of a Biobanking Agreement or transfer to conservation reserve estate can be used to reduce the liability of the conservation and biodiversity bond, and*
- *The sum of the bond may be reviewed in conjunction with any revision to the biodiversity offset strategy.*

HERITAGE

Protection of Aboriginal Heritage Items

38. Unless otherwise authorised under the NP&W Act, the Proponent shall ensure that the project does not cause any direct or indirect impact on the identified Aboriginal heritage items located outside the approved disturbance area of the project.

Note: Identified Aboriginal heritage items are listed in Appendix 9.

Heritage Management Plan

39. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary within six (6) months from the date of approval for MOD 9. This plan must:

(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
(b) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);
(c) include results of further archaeological survey of the 10 hectares of land (as identified on Figure 10 of Appendix F of the EA) that has not been surveyed, and any land adjacent to the open cut mines that has not been surveyed and may be subject to blasting impacts;
(d) include the following for the management of Aboriginal Heritage:
- a detailed archaeological test excavation and potential salvage program for site S1MC331;
- a detailed archaeological test excavation and potential salvage program for sites S1MC343 and S1MC344, if it is determined by a qualified archaeologist that these sites may be subject to impacts associated with blasting;
- a description of the measures that would be implemented for:
  - protecting, monitoring and/or managing the heritage sites/items identified in Appendix 9 and any sites identified during the surveys required in (c) above;
  - conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence and/or blasting;
  - managing the discovery of any human remains or previously unidentified Aboriginal objects on site;
  - maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site;
  - ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and
  - ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;
- a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term;

(e) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 10, including archival recording, historical research and archaeological assessment prior to any disturbance.

40-53. (deleted)

TRANSPORT

Road Works

54. Prior to the commencement of mining operations in open cut 2, the Proponent shall divert or close Carrs Gap Road to the satisfaction of Council.

55. Prior to the commencement of mining operations in open cut 3, the Proponent shall divert or close Moolarben Road to the satisfaction of Council.

Note: These road works must be constructed in accordance with the relevant RMS or Austroads standards, and signposted and lit in accordance AS 1742 – Manual of Uniform Traffic Control Devices and AS/NZS 1158: 2005 – Lighting for Roads and Public Spaces.

Ulan Road Strategy

56. The Proponent shall:
(a) work with Council and the owners of the Ulan and Wilpinjong mines to agree to develop a detailed plan for the implementation of the Ulan Road Strategy; and
(b) make financial contributions towards the implementation of this detailed plan, in accordance with the requirements in the plan, with its share of the mining companies' contribution for the implementation of the strategy to be proportionate to its share of mining-related traffic to be generated on the road during the life of the strategy.

If there is any dispute between the various parties involved in either the development of the detailed plan for the implementation of the strategy, or the implementation of the strategy, then any of the parties may refer the matter to the Secretary for resolution.

57. (deleted)

TRAFFIC MANAGEMENT

58. The Proponent shall:
(a) schedule the shift changes on site to occur outside of school bus hours; and

(b) co-ordinate the shift changes on site with the shift changes of the adjoining Ulan and Wilpinjong mines to minimise the potential cumulative traffic impacts of the shift changes at the three mines.

Rail Transport – West

59. The Proponent shall not transport any coal west of the site through Gulgong and Mudgee without the written approval of the Secretary. In seeking this approval, the Proponent shall submit a report to the Secretary that:
    (a) has been prepared in consultation with Council;
    (b) demonstrates that the railway line has been suitably upgraded to accommodate the proposed coal train traffic;
    (c) describes:
        - the expected tonnages, train size, number, and rail scheduling of the proposed coal train movements (both laden and unladen);
        - the measures that would be implemented to minimise, mitigate and/or manage the ongoing environmental effects of these coal train movements; and
        - how the performance of these measures would be monitored.

Monitoring of Coal Transport

60. The Proponent shall monitor the:
    (a) amount of coal transported from the site each year; and
    (b) date and time of each train movement generated by the project.

VISUAL

Additional Visual Impact Mitigation

61. Upon receiving a written request from the owner of any residence on privately-owned land which has, or would have, significant direct views of the mining operations and infrastructure on site during the project, the Proponent shall implement additional visual impact mitigation measures (such as landscaping treatments or vegetation screens) to reduce the visibility of these mining operations and infrastructure from the residences on their properties.

    These mitigation measures must be reasonable and feasible, and must be implemented within a reasonable timeframe.

    If the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

    Notes:
    - *The additional visual impact mitigation measures must be aimed at reducing the visibility of the mining operations on site from significantly affected re sidences, and do not requir e measures to reduce the visibility of the mining operations from other locations on the affected properties.*
    - *The additional visual impact mitigation measures do not nece ssarily have to include the im plementation of measures on the affected property itself (i.e. the additional measures could involve the implementation of measures outside the affected property boundary that provide an effective reduction in visual impacts).*

Operating Conditions

62. The Proponent shall:
    (a) implement best management practice to minimise the visual and off-site lighting impacts of the project;
    (b) ensure no fixed outdoor lights shine above the horizontal;
    (c) ensure no in-pit mobile lighting rigs shine above the pit wall and other mobile lighting rigs do not shine above the horizontal;
    (d) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting* or its latest version;
    (e) provide for the establishment of trees and shrubs and/or the construction of mounding or bunding to minimise visual and lighting impacts on the Proponent's land adjoining public roads with views of the site;
    (f) ensure that the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape,

    to the satisfaction of the Secretary.

BUSHFIRE MANAGEMENT

63. The Proponent shall:
    (a) ensure that the project is suitably equipped to respond to any fires on site; and

(b) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site.

WASTE

64. The Proponent shall:
(a) implement all reasonable and feasible measures to minimise the waste (including coal reject) generated by the project;
(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; and
(c) monitor and report on effectiveness of the waste minimisation and management measures in the Annual Review.

REHABILITATION

Rehabilitation Objectives

65. The Proponent shall rehabilitate the site to the satisfaction of the Secretary Industry. This rehabilitation must be generally consistent with the proposed rehabilitation described in the EA (and depicted conceptually in the figure in Appendix 8), and comply with the objectives in Table 13.

Table 13: Rehabilitation Objectives

Feature	Objective
Mine site (as a whole)	• Safe, stable and non-polluting; • Constructed landforms are to drain to the natural environment (excluding the final voids); • Final landforms are to be consistent with the surrounding topography of the area, taking into account relief patterns and principles; and • Minimise visual impact of final landforms as far as is reasonable and feasible.
Final Voids	• Minimise the size and depth of final voids so far as is reasonable and feasible, subject to meeting the objectives below; • Minimise the drainage catchment of the final void so far as is reasonable and feasible; • Negligible high wall instability risk; • The size and depth of the final voids must be designed having regard to their function as long-term groundwater sinks, to ensure that groundwater flows across the back-filled pit towards the final void; and • Minimise risk of flood interaction for all flood events up to and including the Probable Maximum Flood level.
Water quality	• Water retained on site is fit for the intended land use (s) for the post-mining domain(s). • The potential ecological, hydrological and geomorphic impacts from post-mining water discharges on receiving creeks are assessed and appropriate mitigation measures are effectively implemented as part of the closure plan.
Surface infrastructure	• To be decommissioned and removed, unless the Executive Director, Mineral Resources agrees otherwise.
Agricultural land	• Establish agricultural land in areas indicated in the figure in Appendix 8 to a similar agricultural suitability to that existing prior to mining.
Other Land	• Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of: • native forests and woodland, including EECs; • habitat for threatened fauna species; and • wildlife corridors (as indicated in the figure in Appendix 8).
Community	• Ensure public safety; and • Minimise the adverse socio-economic effects associated with mine closure.

Progressive Rehabilitation

66. The Proponent shall rehabilitate the site progressively. That is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.

Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the project.

67. The Proponent shall progressively landscape the environmental bunds on site.

Rehabilitation Management Plan

68. The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Executive Director, Mineral Resources. This plan must:
    (a) be prepared in consultation with the Department, DPI Water, OEH, Council and the CCC;
    (b) be submitted to the Executive Director, Mineral Resources for approval by 31 March 2015;
    (c) be prepared in accordance with any relevant DRE guideline;
    (c1) provide for the periodic review and updating of the rehabilitation plans and management strategies to ensure best practice landform design and establishment strategies are employed
    (d) describe how the rehabilitation of the site would be integrated with the implementation the biodiversity offset strategy;
    (e) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);
    (f) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform, and final land use;
    (g) include interim rehabilitation where necessary to minimise the area exposed for dust generation;
    (h) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and
    (i) build to the maximum extent practicable on the other management plans required under this approval.

The Drip

69. Notwithstanding the approval of Modification 9, there is to be no extraction of the additional coal resource approved under Modification 9 until the land tenure and surrounds associated with the natural feature known as 'the Drip' is resolved to ensure its conservation to the satisfaction of the Secretary and the Office of Environment and Heritage.

    This does not prohibit the implementation of the components for Modification 9 including construction and operation the approved water management infrastructure upgrade works.

GREENHOUSE GAS

Energy Savings Action Plan

70. The Proponent shall prepare and implement an updated Energy Savings Action Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with DRE;
    (b) be prepared in accordance with the Guidelines for Energy Savings Action Plans (DEUS 2005, or its latest version);
    (c) be submitted to the Secretary for approval; and
    (d) include an updated program to monitor the effectiveness of measures to reduce energy use on site.

Gas Drainage

71. The Proponent shall implement all reasonable and feasible measures to minimise the greenhouse gas emissions from the underground mining operations to the satisfaction of the Secretary.

72. Prior to carrying out underground mining operations, the Proponent shall submit an updated Greenhouse Gas Minimisation Plan to the Secretary. This plan must:
    (a) identify options for minimising greenhouse gas emissions from underground mining operations, with a particular focus on capturing and/or using these emissions;
    (b) investigate the feasibility of implementing each option;
    (c) propose the measures that would be implemented in the short to medium term on site; and
    (d) include a research program to inform the continuous improvement of the greenhouse gas minimisation measures on site.

SUBSIDENCE

Performance Measures – Natural and Heritage Features

73. The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 14, to the satisfaction of the Secretary.

Table 14: Subsidence Impact Performance Measures

Special Feature	
The Drip and Goulburn River Gorge (see Appendix 7)	Nil impact or environmental consequences
Water Resources	
Goulburn River and the bed of the Goulburn River (see Appendix 7)	Negligible impact or environmental consequences. Remain outside the zone of recorded subsidence damage for longwall mining.
Land	
Cliff Line 3	Minimise subsidence damage
Heritage Sites	
Aboriginal heritage sites 264, 282, 283, 286 and 287 (see Appendix 7)	Reduce the likelihood of subsidence damage to low.
Aboriginal heritage site 280 (see Appendix 7)	Reduce the likelihood of subsidence damage to moderate.
Historic heritage sites	No greater subsidence impact or environmental consequences than predicted in the EA
Mine workings	
First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible impact, negligible consequence or negligible loss	To remain long-term stable and non-subsiding.
Second workings	To be carried out only within the longwall mining domains, in accordance with an approved Extraction Plan.

Notes:

- *The locations of the features referred to in Table 14 are shown in Appendix 7.*
- *The Proponent will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this approval.*
- *Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.*
- *The requirements of this condition only apply to the impacts and consequences of mining operations, construction or demolition undertaken following the date of this approval.*

Offsets

74. If the Proponent exceeds the performance measures in Table 14 and the Secretary determines that:
    (a) it is not reasonable or feasible to remediate the impact or environmental consequence; or
    (b) remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence;

    then the Proponent shall provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary.

Note: Any offset required under this condition must be proportionate with the significance of the impact or environmental consequence.
Impacts to the Drip cannot be offset and consequently the proponent shall ensure that the project has no impact on the Drip or the water supply to the Drip.

Performance Measures – Built Features

75. The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 15, to the satisfaction of the Secretary.

Table 15: Subsidence Impact Performance Measures – Built Features

Key public infrastructure:	
Gulgong-Sandy Hollow Railway Line Wollar-Wellington 330kV Transmission Line	Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.
Other infrastructure:	
Roads	Safe, serviceable and repairable unless the owner agrees otherwise in writing.
Other built features and improvements, including fences	Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.
Public Safety	
Public safety	Negligible additional risk

Notes:

- *The locations of the features referred to in Table 15 are shown in Appendix 7.*
- *The Proponent will be required to define more detailed performance indicators for each of these performance measures in Built Features Management Plans or Public Safety Management Plan (see condition 74 below).*
- *Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.*
- *The requirements of this condition only apply to the impacts and consequences of mining operations undertaken following the date of this approval.*
- *Requirements under this condition may be met by measures undertaken in accordance with the Mine Subsidence Compensation Act 1961.*
- *Requirements regarding safety or serviceability do not prevent preventative or mitigatory actions being taken prior to or during mining in order to achieve or maintain these outcomes.*

76. Any dispute between the Proponent and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 15 is to be settled by the Secretary, following consultation with the Secretary Industry. Any decision by the Secretary shall be final and not subject to further dispute resolution under this approval.

Extraction Plan

77. The Proponent shall prepare and implement an Extraction Plan for all second workings on site to the satisfaction of the Secretary. Each extraction plan must:
    (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
    (b) be approved by the Secretary before the Proponent carries out any of the second workings covered by the plan;
    (c) include detailed plans of existing and proposed first and second workings and any associated surface development;
    (d) include detailed performance indicators for each of the performance measures in Tables 14 and 15;
    (e) provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, incorporating any relevant information obtained since this approval;
    (f) describe the measures that would be implemented to ensure compliance with the performance measures in Tables 14 and 15, and manage or remediate any impacts and/or environmental consequences;
    (g) include a Built Features Management Plan, which has been prepared in consultation with DRE and the owners of affected public infrastructure, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings, and which:
        i. addresses in appropriate detail all items of key public infrastructure and other public infrastructure and all classes of other built features;
        ii. has been prepared following appropriate consultation with the owner/s of potentially affected feature/s;
        iii. recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate all predicted impacts on potentially affected built features in a timely manner; and
        iv. in the case of all key public infrastructure, and other public infrastructure except roads, trails and associated structures, reports external auditing for compliance with ISO 31000 (or alternative standard agreed with the infrastructure owner) and provides for annual auditing of compliance and effectiveness during extraction of longwalls which may impact the infrastructure;
    (h) include a Water Management Plan, which has been prepared in consultation with EPA and DPI Water, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on watercourses and aquifers, including:
        i. surface and groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse impacts on water resources or water quality;
        ii. a program to monitor and report stream flows, assess any changes resulting from subsidence impacts and remediate and improve stream stability;
        iii. a program to monitor and report groundwater inflows to underground workings;
        iv. a program to predict, manage and monitor impacts on groundwater bores on privately-owned land; and
    (i) include a Biodiversity Management Plan, which has been prepared in consultation with OEH, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species, populations and their habitats; endangered ecological communities; and water dependent ecosystems;
    (j) include a Land Management Plan, which has been prepared in consultation with any affected public authorities, to manage the potential impacts and/or environmental consequences of the proposed second workings on land in general;

(k) include a Heritage Management Plan, which has been prepared in consultation with OEH and relevant stakeholders for both Aboriginal and historic heritage, to manage the potential environmental consequences of the proposed second workings on both Aboriginal and non-Aboriginal heritage items, and reflects all requirements under conditions 38-39 of schedule 3;
(l) include a Public Safety Management Plan, which has been prepared in consultation with DRE, to ensure public safety in the mining area;
(m) include a Subsidence Monitoring Program, which has been prepared in consultation with DRE, to:
  i. describe the on-going subsidence monitoring program;
  ii. provide data to assist with the management of the risks associated with subsidence;
  iii. validate the subsidence predictions;
  iv. analyse the relationship between the predicted and resulting subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; and
  v. inform the contingency plan and adaptive management process.
  vi. (deleted)
(n) include a contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 14 and 15, or where any such exceedance appears likely;
(o) proposes appropriate revisions to the Rehabilitation Management Plan required under condition 68 of Schedule 3; and
(p) include a program to collect sufficient baseline data for future Extraction Plans.

Note: To identify the longwall mining domains referred to in this condition, see Appendix 2.

78A. Prior to the commencement of second workings in each of the longwall panels LW9 to LW14, the Proponent shall:
(a) prepare a report analysing the subsidence, surface water, and groundwater impacts of the previous panel, the data produced from the progress of first workings, the cumulative impacts of the progress of longwall mining; and updating the predicted impacts based on the available local data and current scientific understanding of these relevant fields (demonstrating compliance with the requirements of this approval);
(b) commission suitably qualified subsidence and groundwater experts whose appointment has been approved by the Secretary to review the report, and if necessary recommend changes to the monitoring programs and/or mine plan for subsequent panels; and
(c) submit a copy of the report and expert review to the Department, DRE, OEH and DPI Water, including a response to any recommendations contained in the expert review; and
(d) ensure:
  i. the report and any proposed adjustments to the mine plan is approved by the Secretary; and
  ii. that any requirements of the Secretary have been complied with.

Note: The locations of LW9-LW14 are marked in Appendix 7, figure 7.1.

78. The Proponent shall ensure that the management plans required under conditions 77(g)-(l) above include:
(a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval; and
(b) a detailed description of the measures that would be implemented to remediate predicted impacts.

First Workings

79. The Proponent may carry out first workings on site other than in accordance with an approved Extraction Plan, provided that DRE is satisfied that the first workings are designed to remain long-term stable and non-subsiding, except insofar as they may be impacted by approved second workings.

Payment of Reasonable Costs

80. The Proponent shall pay all reasonable costs incurred by the department to engage suitably qualified, experienced and independent experts to review the adequacy of any aspect of an Extraction Plan.

SCHEDULE 4
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS/TENANTS

1. By the end of March 2015, the Proponent shall:
   (a) notify in writing the owners of:
      (a) any land in Table 1A and any land or residence exceeding the criteria in Tables 2A and 2 (respectively) of Schedule 3 that they have the right to require the Proponent to acquire their land at any stage during the project;
      (b) any residence on the land listed in Table 3 and any residence exceeding the criteria in Table 3A of Schedule 3 that they have the right to request the Proponent for additional noise mitigation measures to be installed at their residence at any stage during the project; and
      - any privately-owned land within 2 kilometres of the approved open cut mining pit/s that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated;
   (b) notify the tenants of any mine-owned land of their rights under this approval; and
   (c) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the EA identify that dust emissions generated by the project are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the project.

2. Prior to entering into any tenancy agreement for any land owned by the Proponent that is predicted to experience exceedances of the recommended dust and/or noise criteria, or for any of the land listed in Table 3 that is subsequently purchased by the Proponent, the Proponent shall:
   (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and
   (b) advise the prospective tenants of the rights they would have under this approval,
   to the satisfaction of the Secretary.

3. As soon as practicable after obtaining monitoring results showing:
   (a) (a) an exceedance of any relevant criteria in Schedule 3, the Proponent shall notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and
   (b) (b) an exceedance of the relevant air quality criteria in Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).

INDEPENDENT REVIEW

4. If an owner of privately-owned land considers the project to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land.

   If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Proponent shall:

   (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to:
      - consult with the landowner to determine his/her concerns;
      - conduct monitoring to determine whether the project is complying with the relevant impact assessment criteria in Schedule 3; and
      - if the project is not complying with these criteria then:
         - o determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land;
         - o identify the measures that could be implemented to ensure compliance with the relevant criteria; and
   (b) give the Secretary and landowner a copy of the independent review.

5-9. (deleted)

LAND ACQUISITION

10. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:
   (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the project, having regard to the:
      - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and

- presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional noise and/or air quality mitigation measures in conditions 4 and 5 of Schedule 3;

(b) the reasonable costs associated with:
- relocating within the Mid-western Regional local government area, or to any other local government area determined by the Secretary; and
- obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and

(c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.

Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:
- consider submissions from both parties;
- determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;
- prepare a detailed report setting out the reasons for any determination; and
- provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.

However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.

Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination.

If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the Secretary determines otherwise.

11. The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 10 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.

SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:
   (a) be submitted to the Secretary for approval within 6 months of the date of this approval;
   (b) provide the strategic framework for environmental management of the project;
   (c) identify the statutory approvals that apply to the project;
   (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
   (e) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise;
      - respond to any non-compliance;
      - respond to emergencies; and
   (f) include:
      - copies of any strategies, plans and programs approved under the conditions of this approval; and
      - a clear plan depicting all the monitoring to be carried out in relation to the project.

Adaptive Management

2. The Proponent must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

   Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must, at the earliest opportunity:
   (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
   (b) considerall reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
   (c) implement remediation measures as directed by the Secretary,
   to the satisfaction of the Secretary.

Management Plan Requirements

3. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
   (a) detailed baseline data;
   (b) a description of:
      - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
      - any relevant limits or performance measures/criteria;
      - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
   (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
   (d) a program to monitor and report on the:
      - impacts and environmental performance of the project;
      - effectiveness of any management measures (see c above);
   (e) a contingency plan to manage any unpredicted impacts and their consequences;
   (f) a program to investigate and implement ways to improve the environmental performance of the project over time;
   (g) a protocol for managing and reporting any:
      - incidents;
      - complaints;
      - non-compliances with statutory requirements; and
      - exceedances of the impact assessment criteria and/or performance criteria; and
   (h) a protocol for periodic review of the plan.

Annual Review

4. By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:
   (a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year;
   (b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against the
      - the relevant statutory requirements, limits or performance measures/criteria;
      - the monitoring results of previous years; and
      - the relevant predictions in the EA;
   (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
   (d) identify any trends in the monitoring data over the life of the project;
   (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
   (f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

Revision of Strategies, Plans and Programs

5. Within 3 months of the submission of:
   (a) the submission for annual review under condition 4 above;
   (b) the submission for incident report under condition 7 below;
   (c) the submission for audit under condition 9 below; or
   (d) any modification of this approval,

   the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within four weeks of the review the revised document must be submitted to the Secretary for approval.

   Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

Community Consultative Committee

6. The Proponent shall operate a Community Consultative Committee (CCC) for the Moolarben mine complex to the satisfaction of the Secretary. This CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version).

   Notes:
   - *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and*
   - *The CCC should be comprised of an independent chair and appropriate representation from the Proponent, Council, recognised environmental groups and the local community.*

REPORTING

Incident Reporting

7. The Proponent shall immediately notify the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Proponent shall notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

8. The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.

AUDITING

9. By 31 December 2015, and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
   (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
   (b) include consultation with the relevant agencies;

(c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval, and any other relevant approvals, relevant EPL/s and/or Mining Lease (including any assessment, plan or program required under these approvals);
(d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and
(e) recommend measures or actions to improve the environmental performance of the Moolarben mine complex, and/or any strategy, plan or program required under these approvals.

Note:
- *Notwithstanding the timing referred to above, audits must be carried out prior to the completion of longwall panels 4 and 8. The Proponent must liaise with the Department to determine the precise date of these audits.*
- *This audit team should be led by a suitably qualif ied auditor, and include experts in the field of subsidence, surface water and groundwater management, noise, ecology and mine rehabilitation.*

10. Within 6 weeks of completing this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary with a response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

11. The Proponent shall:
(a) make the following information publicly available on its website:
- the EA;
- current statutory approvals for the project;
- approved strategies, plans or programs required under the conditions of this approval;
- a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;
- a complaints register, which is to be updated on a monthly basis;
- minutes of CCC meetings;
- the last five annual reviews;
- any independent environmental audit, and the Proponent's response to the recommendations in any audit;
- any other matter required by the Secretary; and

(b) keep this information up to date,
(c) investigate and report on reasonable and feasible measures to make predictive meteorological data and real time monitoring data publicly available on its website

to the satisfaction of the Secretary.

APPENDIX 1:
SCHEDULE OF LAND

Owner	Description		Parish	County	EA ID
Moolarben Coal Operations Pty Ltd	Lot 1	DP 817487	Lennox	Phillip	-
Moolarben Coal Operations Pty Ltd	Pt. Lot 102	DP 755442	Moolarben	Phillip	50
Moolarben Coal Operations Pty Ltd	Pt. Lot 157	DP 755442	Moolarben	Phillip	50
Moolarben Coal Operations Pty Ltd	Pt. Lot 6	DP 115031	Moolarben	Phillip	50
DJ & JG Stokes	Pt. Lot 208	DP 755442	Moolarben	Phillip	32
DJ & JG Stokes	Pt. Lot 4	DP 575167	Moolarben	Phillip	32
DJ & JG Stokes	Pt. Lot 65	DP 755442	Moolarben	Phillip	32
DJ & JG Stokes	Pt. Lot 88	DP 755442	Moolarben	Phillip	32
Moolarben Coal Operations Pty Ltd	Lot 1	DP 115031	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Lot 2	DP 115031	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Lot 89	DP 755442	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Lot 98	DP 755442	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Pt. Lot 140	DP 755442	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Pt. Lot 218	DP 755442	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Pt. Lot 238	DP 755442	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Pt. Lot 260	DP 755442	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Pt. Lot 261	DP 755442	Moolarben	Phillip	36
Moolarben Coal Operations Pty Ltd	Lot 107	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 108	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 145	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 16	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 17	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 18	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 19	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 248	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 40	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 45	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 50	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 51	DP 755442	Moolarben	Phillip	29A
Moolarben Coal Operations Pty Ltd	Lot 53	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 64	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Pt. Lot 167	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Pt. Lot 170	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Pt. Lot 172	DP 755442	Moolarben	Phillip	29B
Moolarben Coal Operations Pty Ltd	Pt. Lot 183	DP 755442	Moolarben	Phillip	29
Moolarben Coal Operations Pty Ltd	Lot 146	DP 755442	Moolarben	Phillip	33
Moolarben Coal Operations Pty Ltd	Lot 52	DP 755442	Moolarben	Phillip	33
Moolarben Coal Operations Pty Ltd	Lot 63	DP 755442	Moolarben	Phillip	33
Moolarben Coal Operations Pty Ltd	Lot 99	DP 755442	Moolarben	Phillip	33
Moolarben Coal Operations Pty Ltd	Pt. Lot 205	DP 755442	Moolarben	Phillip	33
Moolarben Coal Operations Pty Ltd	Pt. Lot 289	DP 704098	Moolarben	Phillip	33
Moolarben Coal Operations Pty Ltd	Pt. Lot 93	DP 755442	Moolarben	Phillip	134
Moolarben Coal Operations Pty Ltd	Pt. Lot 93	DP 755454	Wilpinjong	Phillip	134
Moolarben Coal Operations Pty Ltd	Lot 119	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Lot 44	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 1	DP 803204	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 192	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 193	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 37	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 60	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 61	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 62	DP 755442	Moolarben	Phillip	5
Moolarben Coal Operations Pty Ltd	Pt. Lot 95	DP 755442	Moolarben	Phillip	4

Owner	Description		Parish	County	EA ID
Moolarben Coal Operations Pty Ltd	Lot 109	DP 755442	Moolarben	Phillip	4
Moolarben Coal Operations Pty Ltd	Lot 110	DP 755442	Moolarben	Phillip	4
Moolarben Coal Operations Pty Ltd	Lot 223	DP 755442	Moolarben	Phillip	4
Moolarben Coal Operations Pty Ltd	Lot 234	DP 755442	Moolarben	Phillip	4
Moolarben Coal Operations Pty Ltd	Pt. Lot 112	DP 755454	Wilpinjong	Phillip	4
Moolarben Coal Operations Pty Ltd	Pt. Lot 113	DP 755454	Wilpinjong	Phillip	4
Moolarben Coal Operations Pty Ltd	Pt. Lot 228	DP 755442	Moolarben	Phillip	4
Moolarben Coal Operations Pty Ltd	Pt. Lot 229	DP 755442	Moolarben	Phillip	4
Moolarben Coal Operations Pty Ltd	Pt. Lot 96	DP 755454	Wilpinjong	Phillip	4
RB Cox	Pt. Lot 125	DP 755442	Moolarben	Phillip	30
Moolarben Coal Operations Pty Ltd	Pt. Lot 2	DP 878678	Wilpinjong	Phillip	13
Moolarben Coal Operations Pty Ltd	Pt. Lot 262	DP 755442	Moolarben	Phillip	7
Moolarben Coal Operations Pty Ltd	Pt. Lot 30	DP 755439	Lennox	Phillip	10
Moolarben Coal Operations Pty Ltd	Pt. Lot 7	DP 878678	Wilpinjong	Phillip	19
Moolarben Coal Operations Pty Ltd	Pt. Lot 97	DP 755454	Wilpinjong	Phillip	1
Moolarben Coal Operations Pty Ltd	Pt. Lot 6	DP 878678	Wilpinjong	Phillip	18
Moolarben Coal Operations Pty Ltd	Pt. Lot 3	DP 878678	Wilpinjong	Phillip	15
Moolarben Coal Operations Pty Ltd	Pt. Lot 11	DP 1152406	Wilpinjong/Lennox	Phillip	12
Ulan Coal Mines Ltd.	Lot 1	DP 722881	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Lot 178	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Lot 179	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Lot 2	DP 722882	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Lot 272	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Lot 277	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Lot 3	DP 722882	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Lot 45	DP 736630	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Lot 18	DP 1140073	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 1	DP 1089166	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 1	DP 1099037	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 1	DP 720332	Ulan	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 14	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 20	DP 755439	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 242	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 253	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 44	DP 736630	Lennox/Ulan	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 46	DP 736630	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 47	DP 736630	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 48	DP 736630	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 50	DP 736630	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 75	DP 750773	Ulan	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 91	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 92	DP 755442	Moolarben	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 13	DP 1152406	Lennox	Phillip	46
Ulan Coal Mines Ltd.	Pt. Lot 14	DP 1152046	Lennox	Phillip	46
Mid-Western Regional Council	Lot 16	DP 1140073	Lennox	Phillip	-
Mid-Western Regional Council	Lot 17	DP 1140073	Lennox	Phillip	-
Mid-Western Regional Council	Lot 20	DP 1140073	Lennox	Phillip	-
Crown	Carrs Gap Road		Moolarben	Phillip	-
Crown	Moolarben Road		Moolarben	Phillip	-
Crown	Saddlers Creek Road				-
Crown	Ulan Road				-
Crown	Ulan–Wollar Road				-
Crown	Lot 152 Reserve for Public School	DP 755442	Moolarben	Phillip	-

Owner	Description	Parish	County	EA ID
Crown	Lot 176 DP 755442 Reserve for future public requirements R65457	Moolarben	Phillip	-
Crown	Pt. Lot 204 DP 755442 Reserve for future public requirements R65457	Moolarben	Phillip	-
Crown	Pt. Lot 290 DP 704098 Reserve for Access	Moolarben	Phillip	-
Crown	Pt. Lot 7009 DP 1025321 Vacant Crown Land	Moolarben	Phillip	-
Crown	Pt. Lot 31 DP 755439 Vacant Crown Land	Lennox	Phillip	-
Crown	Pt. Lot 7010 DP 1025345 Vacant Crown Land	Moolarben	Phillip	-
Crown	Pt. Lot 7302 DP 1143562 Reserve for Resting Place R.82539	Lennox	Phillip	-
Crown	Lot 33 DP 755439	Lennox	Phillip	-
Crown	Lot 34 DP 755439	Lennox	Phillip	-
Crown	Lot 55 DP 722794	Lennox	Phillip	-
Crown	Lot 56 DP 722795	Lennox	Phillip	-
Crown	Pt. Lot 43 DP 736630	Lennox/Ulan	Phillip	-
Crown	Unidentified Crown Road - No 10 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 11 (Refer Plan 0857C)	Wilpinjong	Phillip	-
Crown	Unidentified Crown Road - No 12 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 13 (Refer Plan 0857C)	Wilpinjong	Phillip	-
Crown	Unidentified Crown Road - No 14 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 15 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 16 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 17 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 18 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 19 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 20 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 21 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 22 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Unidentified Crown Road - No 6 (Refer Plan 0857C)	Lennox	Phillip	-
Crown	Unidentified (Refer Plan	Lennox	Phillip	-

Owner	Description	Parish	County	EA ID
	Crown Road - No 7 0857C)			
Crown	Unidentified Crown Road - No 8 (Refer Plan 0857C)	Lennox	Phillip	-
Crown	Unidentified Crown Road - No 9 (Refer Plan 0857C)	Moolarben	Phillip	-
Crown	Lot 7303 Vacant Crown Land DP 1143562	Lennox	Phillip	-
Crown	Lot 7005 Vacant Crown Land DP 1096180	Lennox	Phillip	-
Crown	Vacant Crown Land - No 5 (Refer Plan 0857C)	Lennox	Phillip	-
State Rail Authority	Sandy Hollow–Gulgong Railway			-

APPENDIX 2:
GENERAL LAYOUT OF PROJECT

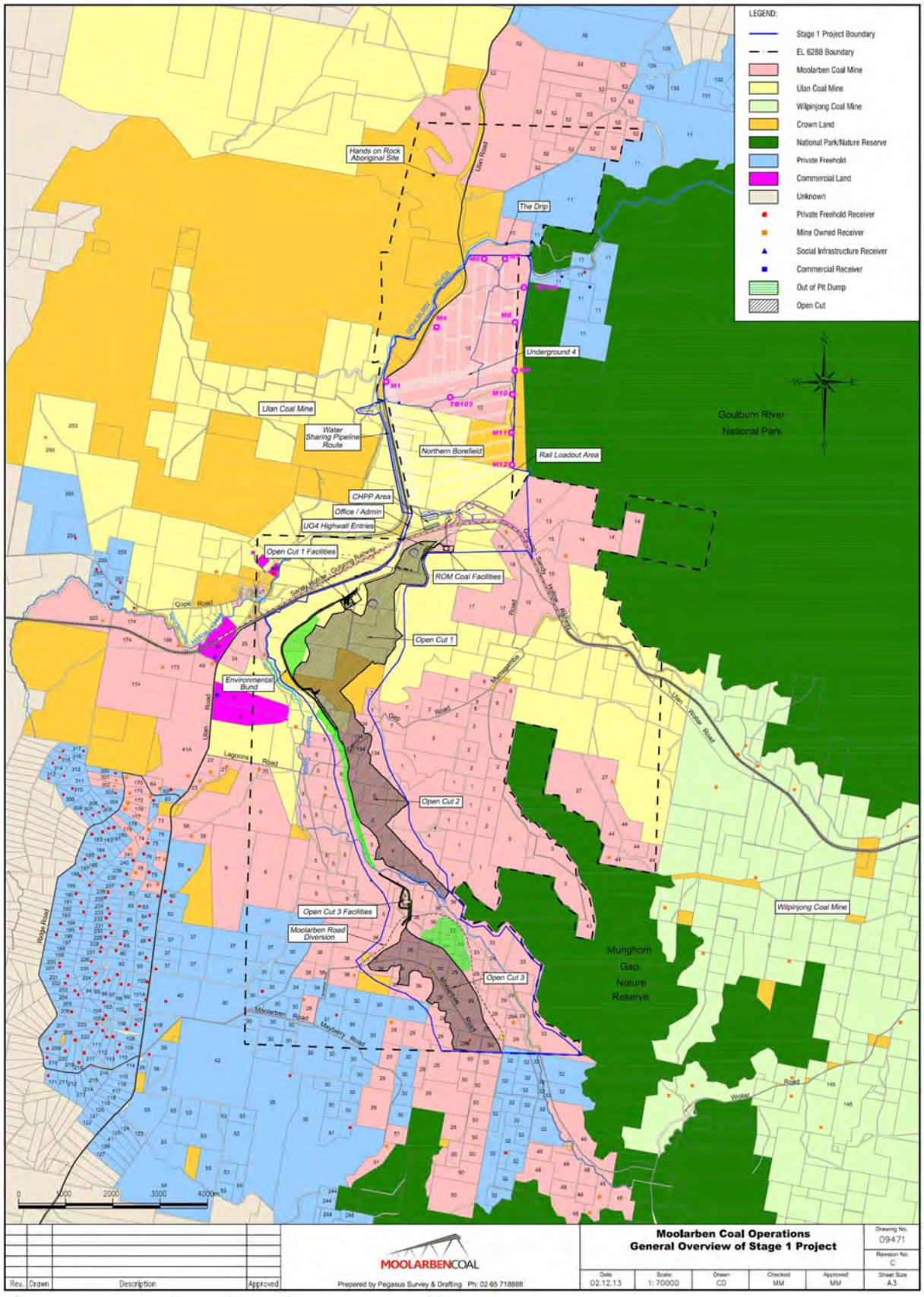


Figure 2.1 – General Overview and property ownership

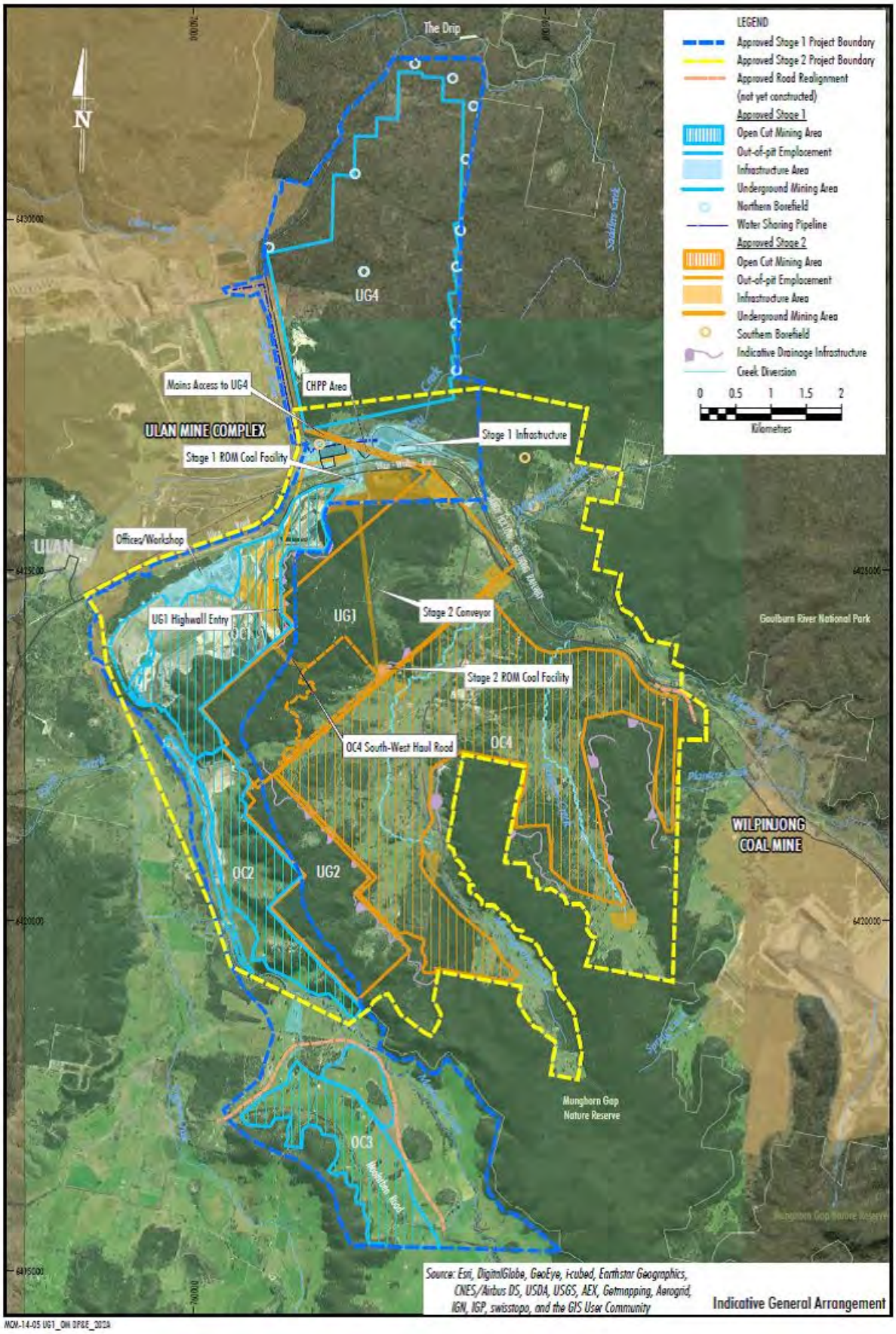


Figure 2.2 – Indicative General Arrangement

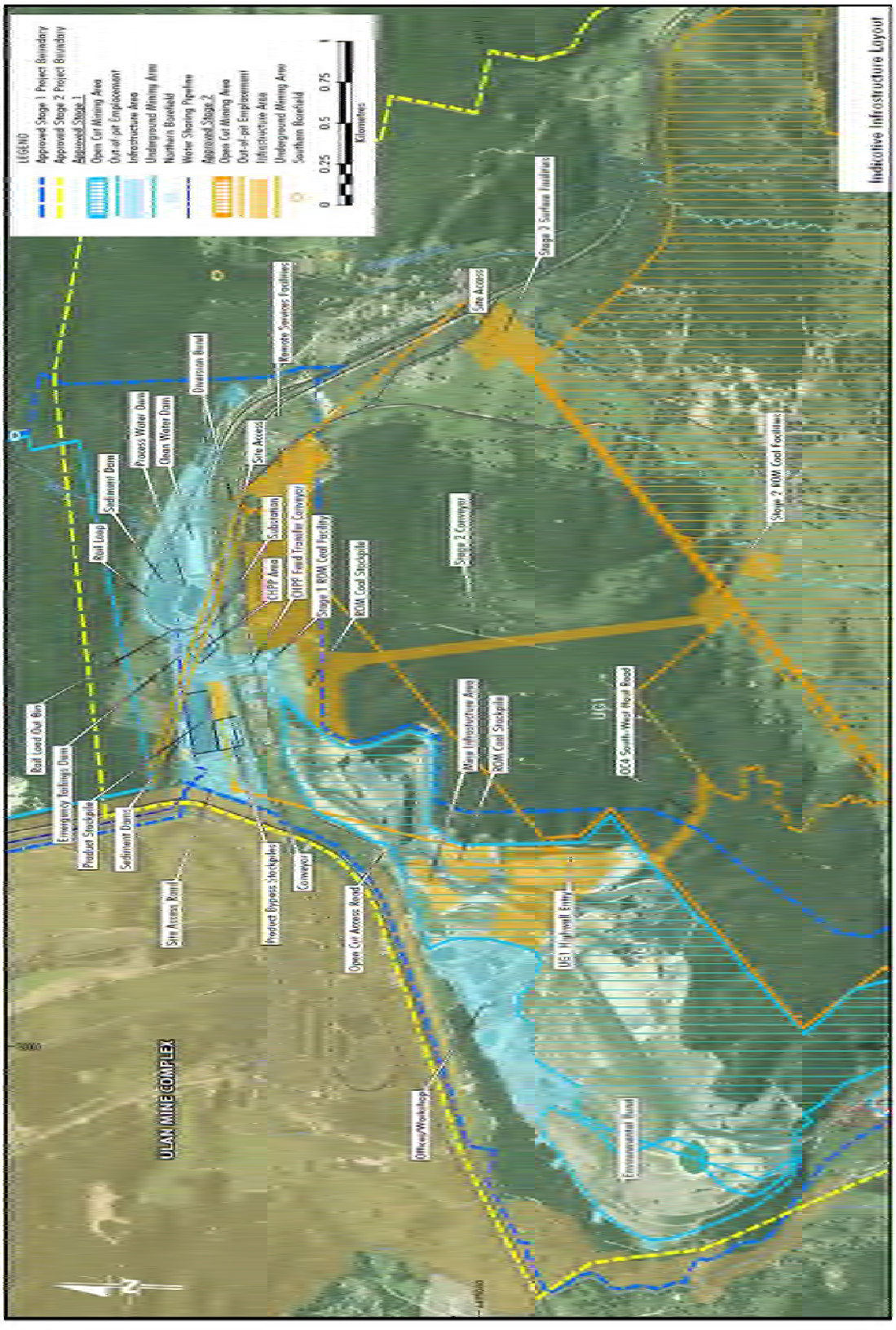


Figure 2.3 – Indicative Infrastructure Arrangement

APPENDIX 3:
STATEMENT OF COMMITMENTS

(1) Protect The Drip and Goulburn River Corner Gorge

The Drip and the Goulburn River Corner Gorge are shown on the plan titled "Moolarben Coal Mine – Preferred Mine Plan General Layout" contained in Appendix A9 to the "Moolarben Coal Project Response to Submissions".

Moolarben will conduct its underground mining operations consistent with the Preferred Project Underground No. 4 layout to protect the Goulburn River features known as the Drip, the Goulburn River Corner Gorge and associated cliffs so that there is no damage whilst seeking to maximise recovery of coal resources and as may be required by any conditions of project approval for the Moolarben Coal Project.

(2) Shift Change

Moolarben undertakes to schedule its major employee shift changes to times outside the hours of 8.15 to 9.00 am and 3.15 to 4.00 pm Monday to Friday to seek to reduce overlap of employee traffic and school transport and as may be required by any conditions of project approval for the Moolarben Coal Project.

(3) Replace Water

Moolarben will compensate or replace waters (similar quality and quantity) lost by a private landholder as a consequence of the Moolarben Coal Project in accordance with the adopted protocols and procedures contained in the Moolarben Coal Project Environmental Management System and as may be required by any conditions of project approval for the Moolarben Coal Project.

(4) Environmental Management System

Moolarben will prepare and implement an Environmental Management System containing Environmental Management Plans, and Mine Operating Plan for the life of the Moolarben Coal Project consistent with the Environmental Assessment Report, the Response to Submissions Report, the Preferred Project Report, subsequent modification applications and as may be required by any conditions of project approval for the Moolarben Coal Project.

(5) Noise in School Rooms

Moolarben in consultation with the Ulan Public School and the Department of Education will undertake agreed works to ameliorate potential noise and dust impacts associated with the Moolarben Coal Project upon classrooms and general school operations.

OR

Moolarben will, should the Department of Education request, on a reasonable basis relating to the effect of noise and dust from the Moolarben Coal Project, negotiate to contribute to or meet reasonable costs toward relocating the school.

(6) Land Purchase Commitment

Moolarben will accept an obligation to purchase (if so required by any affected private landholder) any land affected by operations of the Moolarben Coal Project in accordance with any requirement to do so as provided in any project approval for the Moolarben Coal Project.

(7) Mine Water Sharing Plan

Moolarben will seek to enter into a mine water sharing plan in respect of mining operations of the Ulan Coal Mine and Wilpinjong Coal Mine under the auspices of the Director General of the Department of Planning and as may be required by any conditions of project approval for the Moolarben Coal Project.

(8) ***Voluntary Planning Agreement***

Moolarben will enter into a Voluntary Planning Agreement with Mid Western Regional Council and the Minister for Planning incorporating the principles contained in the offer by Moolarben to the Minister for Planning on 4 September 2007 to enter into the Voluntary Planning Agreement.

(9) ***Employ Local People***
Moolarben will, wherever possible and feasible, employ appropriately qualified persons residing within the local area.

(10) ***Traineeships***
Moolarben will provide traineeships for the youth of the local community.

(11) ***Dronvisa Quarry***
Moolarben will seek to enter into an operational agreement with Dronvisa Quarry with regard to the safe continuation of its operations in conjunction with underground mining.

(12) ***Ecology***
Moolarben will enter into such arrangements as may be required by the Secretary to provide for ecological offsets as proposed in the Environmental Assessment, Preferred Project Report, subsequent modification applications and as may be required by any conditions of project approval for the Moolarben Coal Project.

(13) ***Flows in the Goulburn River – Co-operative Monitoring Program***
Moolarben will use its reasonable endeavours to agree and implement a monitoring program in cooperation with the Ulan and Wilpinjong mines (and to the reasonable requirement of the Director General who will consult with the NOW) to identify any potential for any change in the water flows in the Goulburn River due to mining at the Moolarben, Ulan and Wilpinjong mines and as may be required by any conditions of project approval for the Moolarben Coal Project.

(14) ***Mine Water Management and Salinity – Sharing with Ulan and Wilpinjong***
Moolarben will use its reasonable endeavours to agree and implement a co-operative arrangement with and enter into a life of mine agreement between the Ulan and Wilpinjong mines (the "Mines") to establish, implement and operate water sharing and use plans and procedures with the objective of minimising the removal by the Mines of water from the environment and the discharge of minewaters by the Mines to the environment and which shall address the ability of the Mines to utilise mine water produced by the Mines between the Mines and as may be required by any conditions of project approval for the Moolarben Coal Project.

(15) ***Salinity Off Sets***
– Bobadeen Irrigation Scheme ("BIS") - Salinity Offset Management Plan ("SOMP")
In the event that the Moolarben Coal Project reduces the capacity for the removal of salt from the Salinty Offset Management Plan area operated by Ulan Mine in conjunction with the Bobadeen Irrigation Scheme under Environment Protection Licence 394, then Moolarben will, at its election, either:

- *take from Ulan that volume of water that would otherwise have been used in the BIS; OR*
- *provide an area of land with equivalent salt removal capacity; AND*
- *any disputed issue will be determined by an appropriately qualified expert agreed between Moolarben and Ulan and in default appointed by the Director General of Planning.*

(16) ***Haulage of Coal to the West by Rail***
Prior to the haulage of coal by rail to the west of the Moolarben Coal Project, Moolarben shall notify the Secretary with details of expected tonnages, train size and rail scheduling and where practicable schedule rail haulage during daylight hours only through the town of Mudgee as may otherwise be required by any conditions of project approval for the Moolarben Coal Project.

(17) ***Traffic Management – Mid Western Regional Council***
Moolarben acknowledges the need for it to contribute to the upgrade and maintenance of aspects of the local road system affected by the operation of the Moolarben Coal Project

and commits to implement the Voluntary Planning Agreement in satisfaction of the principles of that agreement.

(18) Additional Management and Mitigation – Modification of Stage 1

Moolarben commits to implementing the following management and mitigation measures to ensure that impacts associated with modifications to the Moolarben Coal Project are minimised.

Environmental Aspect	Management and Mitigation Commitments
Air quality	• Management and monitoring of air quality will continue to be undertaken in accordance with the best management practices set out in an approved Air Quality Management Plan. • Dust control measures will be used on internal haul roads. • Raw coal transfer and rejects conveyors will be partially enclosed. • Dust sprays will be fitted to the dump hopper. • Water carts will be used to minimise dust generation from unsealed access tracks and construction areas, where required. • A TEOM will be located to the southwest of the project to enable pro-active dust management and compliance monitoring for private residences to the south of the project prior to mining in Open Cut 2. • Use of a TEOM located to the northeast of the project for measuring background dust levels. • MCO will continue to report annually in the AEMR, the total amount of greenhouse gas emissions from the MCP and the effectiveness of measures implemented to achieve energy savings.
Noise	• Management and monitoring of noise will continue to be undertaken in accordance with an approved Noise Management Plan, including proactive and reactive management. • MCO further commits to: - Limiting northern borefield construction hours from 7am to 6pm Monday to Friday (inclusive). - Limiting surface water management infrastructure upgrade construction hours from 7:00am to 5:00pm Monday to Saturday (inclusive). - Fitting haul trucks with noise attenuation equipment to meet sound power levels assumed in the Stage 1 EA and subsequent noise Impact assessments - Specifying sound power levels in supply contracts for mobile plant and equipment , where appropriate. - Fitting northern borefield water supply/dewatering bores with submersible pumps. - Use of a temporary power supply generator located near the borefield pipeline outlet, at least 4km from the nearest private residence, unless power is provided from the electricity network. - Maintaining awareness of best practice noise mitigation technologies and alternative operating methodologies, and continuing to investigate the potential for further noise reductions to the haul truck fleet through potential additional noise attenuation and mitigation opportunities (such as Duratray). - Designing and locating the haul roads behind earthen bunds as far as practically possible.

Environmental Aspect	Management and Mitigation Commitments
Biodiversity	• Management and monitoring of ecology will continue to be undertaken in accordance with an approved Landscape Management Plan (or equivalent), which will be reviewed and updated as required to incorporate the Open Cut 1 and Open Cut 2 extension areas. • Where possible, construction works in areas of known and potential threatened woodland species habitat will be avoided during their breeding cycle. • Pre-clearing fauna surveys will be undertaken prior to ground clearing disturbance. • One of two hollow bearing trees within the rail loop alignment will be retained (where possible). • Tree hollows and other habitat features will be salvaged for use as compensatory habitat, in rehabilitation areas. • The cleared area along the mining lease boundary will be rehabilitated and revegetated to enable cleared EEC to re-establish. • Disturbed areas not required for ongoing access and maintenance will be rehabilitated. Endemic species will be used to supplement natural vegetation regeneration, where required. • Groundcover will be maintained to minimise the risk of soil erosion, wherever practicable. Feral animals, weeds and pests will be controlled. • MCO further commits to: - Undertake a detailed flora and fauna inventory and mapping of the vegetation types and threatened species for properties proposed to offset the clearing impacts of the Open Cut 1 and Open Cut 2 extension areas. - Manage offset and rehabilitation areas in accordance with a Rehabilitation and Offset Management Plan (ROMP or equivalent plan) to improve biodiversity outcomes. - Provide adequate funds to implement the management measures described in the ROMP. - Implement the management actions specific to each property and report annually on the implementation of the plan to relevant stakeholders. - Arrange for the independent review of the adequacy and implementation of the ROMP every three years. - Provide long-term security of offset areas through an appropriate mechanism (such as a conservation covenant) agreed to with relevant stakeholders. - Provide an alternative secure offset property of at least equivalent biodiversity value where long-term security of a nominated offset property is not achievable. - Investigate potential roosting sites for bat activity on properties proposed to offset the impacts of Open Cut 1 and Open Cut 2 extension areas. - Investigate use of artificial roosting sites for microbat habitat augmentation where offset areas are determined not to have sufficient roosting habitat. - Carry out targeted spring surveys for Diuris Tricolor in potential habitat areas within Open Cut 1 and Open Cut 2 extension areas. Where Diuris Tricolor plants are identified in disturbance areas, these will be translocated to suitable offset property habitat areas consistent with the monitoring and reporting requirements of the Australian Network for Plant Conservation translocation guidelines (ANPC, 2004). - Review land use history of Derived Native Grassland offset areas (including, where possible, cultivation, fertiliser application, soil nutrient levels and ground cover species)to inform appropriate management and performance and completion criteria. Where monitoring indicates these areas are not recovering as expected within the first five years of management alternative management measures will be investigated. - Maintain existing third party access arrangements on offset properties, where required. - Progressive rehabilitation of disturbed areas and re-use of habitat features (e.g. hollow logs, rocks) in rehabilitation areas to minimise the habitat resource competition in adjoining conservation reserves.

Environmental Aspect	Management and Mitigation Commitments
Cultural heritage	• Cultural heritage sites will be monitored and managed according to the measures described in an approved Aboriginal Cultural Heritage Management Plan. • Cultural heritage sites adjacent to and outside construction, mining and general disturbance areas will have appropriate controls in place to prevent potential disturbance. • • Cultural heritage monitoring and salvage will be undertaken by a qualified archaeologist and members of the Aboriginal Stakeholder community groups (Mudgee Local Aboriginal Land Council based in Mudgee; North-East Wiradjuri Pty Ltd, based in Ulan; Murong Gialinga Aboriginal and Torres Strait Islander Corporation, based in Mudgee; and Warrabinga Native Title Claimants Aboriginal Corporation, based in Kandos). • Where additional cultural heritage sites are identified, these sites will be managed in accordance with the measures described in the Aboriginal Cultural Heritage Management Plan. • Local Aboriginal community representatives will be involved in the recording, salvaging and storing of cultural heritage objects impacted by site works. • The Aboriginal Cultural Heritage Management Plan will be updated to include: - Additional registered parties as necessary. - Sub-surface testing and potential salvage of S1MC343-345 and S1MC352 where blasting is assessed to adversely impact these sites. - Test excavation and potential salvage of S1MC331 and S1MC334.
Water	• Erosion and sediment control measures detailed in an approved Erosion and Sediment Control Plan (or equivalent) will be implemented. • Water pressure will be monitored at the inlet and outlet of the water sharing and borefield pipeline network, and the entire length of pipeline will be inspected regularly. • In the event that a leak or loss of pressure is detected in the water sharing or borefield pipeline network, pumping in that portion of the pipeline network will cease and the resultant cause investigated and remediated. • Management and monitoring of surface water and groundwater will be undertaken in accordance with an approved Water Management Plan, which will be reviewed and updated, as necessary, to include the Open Cut 1 and Open Cut 2 extension areas and additional surface water management infrastructure. As part of this review, MCO will liaise with the NOW on the water licensing requirements for the open cut extension areas. • MCO is committed to the effective management of water in the modified landform and where required will develop strategies to this effect, including returning rehabilitated areas to clean water catchments as promptly as practically possible. • MCO will abide by the rules of any relevant water sharing plan and return water where required.
Rehabilitation	• Soils will be stockpiled and used to rehabilitate areas not required for ongoing operations. • MCO is committed to progressively rehabilitating mined areas as soon as practical following disturbance, in accordance with an approved Landscape Management Plan (or equivalent Rehabilitation Plan), including returning areas disturbed by mining to their pre-mining land use (unless otherwise agreed with relevant stakeholders).The plan will be updated, as required, to include the Open Cut 1 and Open Cut 2 extension areas. The plan will consider use of terrestrial riparian buffers. • The majority of the Open Cut 1 and Open Cut 2 extension areas will be rehabilitated for biodiversity outcomes. • The 15.7 ha area of Class 3 agricultural land directly impacted by the Open Cut 1 and Open Cut 2 extension areas will be reinstated for agricultural purposes post mining.
Traffic	• Appropriate traffic management will be implemented for Ulan Road for construction vehicles entering and leaving the site to Ulan Road and along Saddlers Creek Road, where required. • MCO is committed to participate in the Ulan Road Strategy and will continue to consult with MWRC in relation to local road strategies.

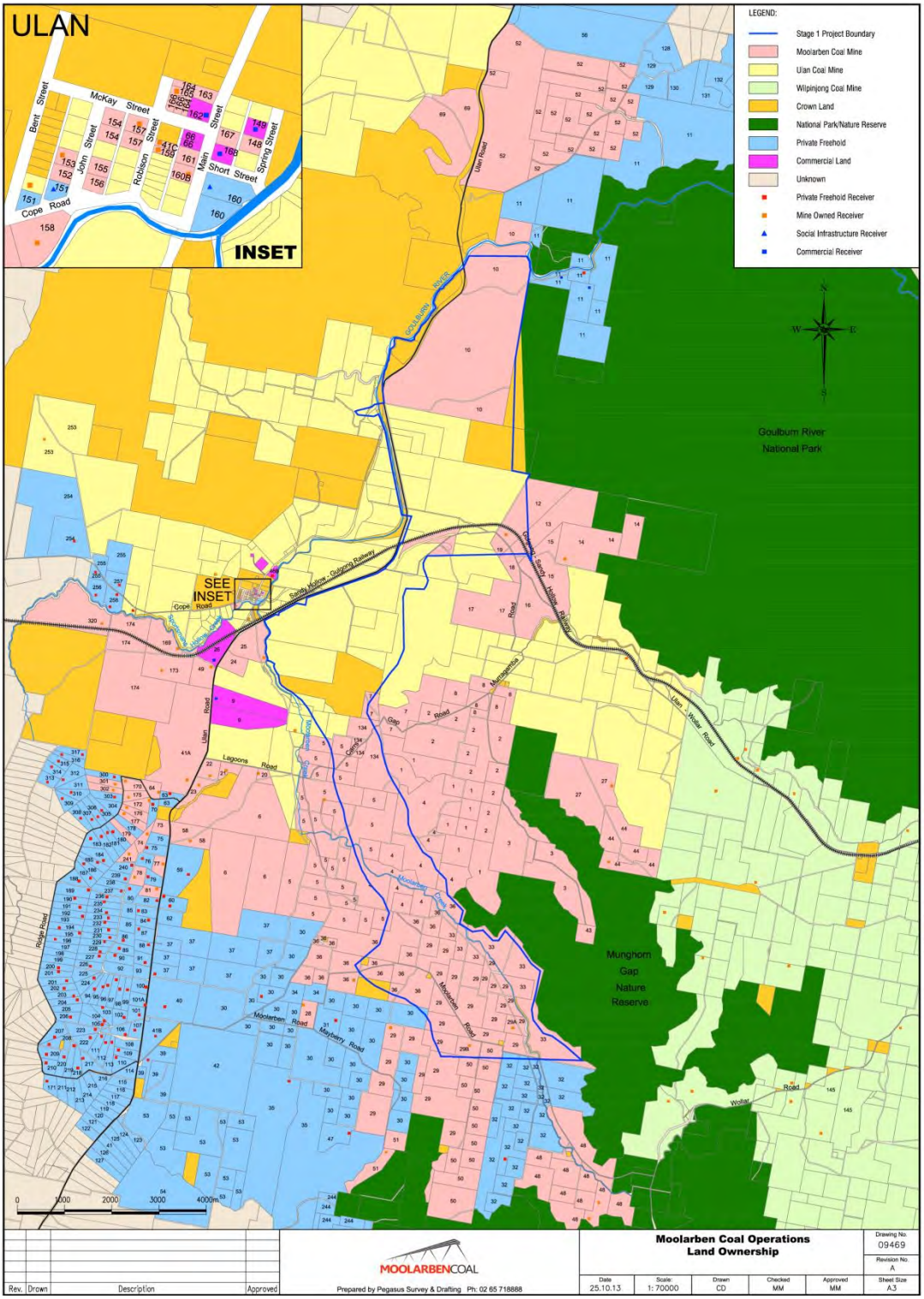
Environmental Aspect	Management and Mitigation Commitments
Visual	• Trees and shrubs will be planted to provide a visual screen: - To the switch and bore pads located adjacent to Saddlers Creek Road, where required. - Along the southern edge of Cope Road, where views of Open Cut 1 extension areas will be possible, subject to landowner consent. • The Landscape Management Plan (or equivalent) will be reviewed and updated to describe the measures that will be implemented to manage visual impacts associated with the Open Cut 1 and Open Cut 2 extension areas, such as: - Vegetation screen planting, subject to land owner's consent, along the southern edge of Cope Road, in areas visually affected by direct views of the Open Cut 1 extension area. - Investigating the feasibility of targeted vegetation screen planting for affected properties along Ridge Road (with direct views from the residence to both Open Cut 1 and Open Cut 2 extension areas), to mitigate the visual and lighting impacts of Open Cut 1 and Open Cut 2 extension areas, subject to landowner consent. - Building-up out-of-pit embankments first so that continued operations are obscured by the embankment. Wherever possible out-of-pit emplacements around the perimeter will be established first, providing a visual screen while work is undertaken in the central part of the emplacement. - Seeding and grassing embankment outer faces visually exposed to private residents as soon as practically possible to soften the view. - Where possible, maintaining a strip of vegetation along the leading face of the ridgeline associated with the Open Cut 1 extension area to provide a visual screen to workings for as long as practical. - Use of operational screening measures such as landform re-establishment sequencing and lighting management. - Progressive rehabilitation. • As far as practically possible, and where mine safety allows, management protocols will be established and implemented to: - Locate mobile lighting plant to be directed away from private residences. - Direct stationary lighting sources below the horizontal to minimise potential light spill. - Design lighting systems that minimise light spillage. - Avoid lighting of light coloured surfaces that have greater reflectivity.
Social	• MCO is committed to prevent or minimise negative social impacts resulting from the MCP and will use its best endeavours to enhance the social benefits of the Project in accordance with its Environment and Community Policy.

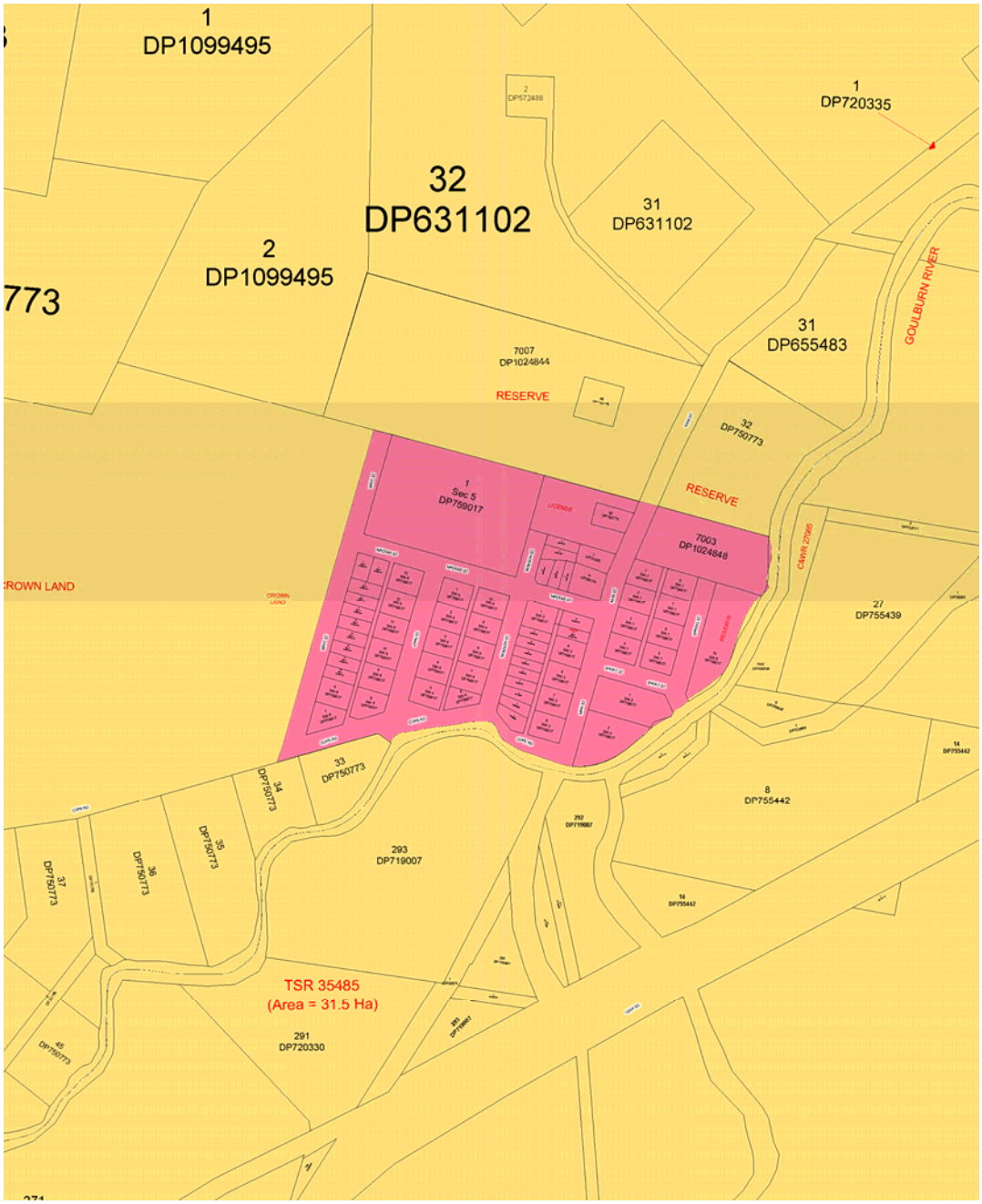
APPENDIX 4:
VOLUNTARY PLANNING AGREEMENT

Funding Area	Minimum Proponent Contribution	Funding Time Frame
Monetary Contribution – open cut product coal	$1,000,000	Three equal instalments to be paid over a three year period, with the first annual instalment to be paid within seven days of the first loading and dispatch of coal produced from the open cut operations from the Project.
Monetary Contribution – underground product coal	$300,000	One instalment to be paid within seven days of the first loading and dispatch of coal produced from the underground operations of the Project.
Road Maintenance Contribution – Cope Road and Ulan Road	$1,000,000	Three equal instalments to be paid over a three year period, with the first instalment to be paid within seven days of the commencement of construction
Road Maintenance Contribution – General	$1,250,000	$62,500 each year for a period of 20 years with the first instalment to be paid on the first anniversary of the first loading and dispatch of coal produced from the operations of the Project.
Community Infrastructure Contribution	$1,000,000	$100,000 each year for a period of 10 years with the first instalment to be paid on the first anniversary of the first loading and dispatch of coal produced from the operations of the Project.

Note: The "Road Maintenance Contribution – General" and "Community Infrastructure Contribution" must be reviewed and adjusted to take into account any increase in the CPI over time.

APPENDIX 5:
PROPERTY NUMBERS AND LAND OWNERSHIP




1
DP1099495
1
DP720335
32
DP631102
31
DP631102
2
DP1099495
773
7007
DP1024844
RESERVE
31
DP655483
GOULBURN RIVER
32
DP750773
RESERVE
1
Sec 5
DP759017
7003
DP1024848
CROWN LAND
27
DP755439
33
DP750773
34
DP750773
35
DP750773
36
DP750773
37
DP750773
293
DP719007
8
DP755442
TSR 35485
(Area = 31.5 Ha)
291
DP720330

No.	NAME	No.	NAME	No.	NAME
1	Moolarben Coal Mine Owned/Controlled Land	82	S.C. Hungerford & M.C. Clemens	164	Moolarben Coal Mine Owned/Controlled Land
2	Moolarben Coal Mine Owned/Controlled Land	83	C.F. & C.R. Wall	165	Moolarben Coal Mine Owned/Controlled Land
3	Moolarben Coal Mine Owned/Controlled Land	84	D.S. Sebelic	166	Moolarben Coal Mine Owned/Controlled Land
4	Moolarben Coal Mine Owned/Controlled Land	85	J. & Z. Nikolovski	167	Moolarben Coal Mine Owned/Controlled Land
5	Moolarben Coal Mine Owned/Controlled Land	86	N.W. Harris	168	PJL Construction Complete Mining Services & Solutions P/L
6	Moolarben Coal Mine Owned/Controlled Land	87	B.J. & K. Howe	169	Moolarben Coal Mine Owned/Controlled Land
7	Moolarben Coal Mine Owned/Controlled Land	88	B.C. Meyers	170	Moolarben Coal Mine Owned/Controlled Land
8	Moolarben Coal Mine Owned/Controlled Land	89	M.V. & H.M. Glover & E. & B.J. Tomlinson	171	J.M. McGregor
9	I.C.I. Australia Operations	90	S.A. Powell	172	Moolarben Coal Mine Owned/Controlled Land
10a,b	Moolarben Coal Mine Owned/Controlled Land	91	H.M. Graham	173	Moolarben Coal Mine Owned/Controlled Land
11	J. Mullins & C. Imrie	92	V.A. Pulicino, J. Bonnici, S. Bonnici & G. Bonnici	174	Moolarben Coal Mine Owned/Controlled Land
12	Moolarben Coal Mine Owned/Controlled Land	93	F. & M. Fenech	175	Moolarben Coal Mine Owned/Controlled Land
13	Moolarben Coal Mine Owned/Controlled Land	94	L.K. Mittermayer	176	Moolarben Coal Mine Owned/Controlled Land
14a	Moolarben Coal Mine Owned/Controlled Land	95	B.J. Wittington	177	Moolarben Coal Mine Owned/Controlled Land
14b	The Minister for National Parks	96	D. Lazicic	178	P. Stone
15	Moolarben Coal Mine Owned/Controlled Land	97	D.J. & M.D. Smith	179	Moolarben Coal Mine Owned/Controlled Land
16	Moolarben Coal Mine Owned/Controlled Land	98	J.P. & M.E. Piper	180	C. & L. Barrett
17	Moolarben Coal Mine Owned/Controlled Land	99	D.E. Jenner & W.B. Jensen	181	S. Forster
18	Moolarben Coal Mine Owned/Controlled Land	100	O. & A. Kapista	182	J. Dutoitcook
19	Moolarben Coal Mine Owned/Controlled Land	101	R.D. & D.M.Z. Hull	183	R. & E. Steines
20	Moolarben Coal Mine Owned/Controlled Land	101a	P.J. Kearns	184	L. Stevenson
21	Moolarben Coal Mine Owned/Controlled Land	102	K.A. Roberts	185	L. Stevenson
22	Moolarben Coal Mine Owned/Controlled Land	103	S.B. Burnett & S.L. Grant	186	R. & I. Adamson
23	Moolarben Coal Mine Owned/Controlled Land	104	R.A. & L.A. Deeben	187	B. & K. Feeney
24	Moolarben Coal Mine Owned/Controlled Land	105	D.J. & N. Katsikaris	188	K. & T. Fielding
25	Moolarben Coal Mine Owned/Controlled Land	106	T.B. & J.H. Reid	189	M,M,D & A Goggin & J.A,P & R Hyde
26	Forty North Pty Limited	107	Z.J. & M. & A.A. Raso, B. Poplasen	190	T. & L. Sahyoun
27	Moolarben Coal Mine Owned/Controlled Land	108	R. Varga	191	B. & T. Lasham
28	Moolarben Coal Mine Owned/Controlled Land	109	D.A. & V.M. Evans	192	R. & J. Williams
29a,b	Moolarben Coal Mine Owned/Controlled Land	110	J.T. Thompson & H.T. Evans	193	D.J. Moloney
30	R. Cox	111	G.J. & N.J. McEwan	194	P. & K. Potts
31	M. Cox	112	M.J. & L.M. Croft	195	R. Cottam
32	D. & J. Stokes	113	C.P.G. Ratcliff	196	F. Saxberg & F. Weir

No.	NAME	No.	NAME	No.	NAME
33	Moolarben Coal Mine Owned/Controlled Land	114	T.F. & K. Holland	197	P. Gorm & I. Neilsen
34	J. Asztalos	115	A.K. & B.H. Ouinn	198	G.R. & M.E. Metcalfe
35	P. Johnson, M. & G. Thompson, P. & F. Debreczeny	116	D.J. & S.M. Reid	199	P. Gorm & I. Neilsen
36	Moolarben Coal Mine Owned/Controlled Land	117	J.M. Dick	200	V.K. Grimshaw
37	J. Szymkarczuk	118	A. Scott	201	K. & G. Towerton
38	State of NSW	119	P.J. Kearns	202	H. & V. Butler
39	R. & D. Sprigg	120	P.S. & D.R. Ord	203	D. Miller
40	J. Devenish	121	E.J. Cullen	204	R. & J. Donnan
41a,c	Moolarben Coal Mine Owned/Controlled Land	122	W.F. Wirth	205	D. Sparrow
41b	P. Libertis	123	N.D. Sullivan	206	C. Marshall & R.Vella
42	C. & L. Schmidt	124	W.J. & H.E. Bailey	207	A. & D. Smith
43	Moolarben Coal Mine Owned/Controlled Land	125	D.B. McBride	208	S. & C. Hasaart
44	Moolarben Coal Mine Owned/Controlled Land	126	M.P. Julian	209	F. Mawson
45	NSW Elec. Trans. Auth	127	B.K.T. & S.A. Bracken	210	J. & A. Tebbutt
46a,c,d,f,g	Ulan Coal Mines Ltd.	128	A. Sims	211	S. McGregor & W. Gray
46b	North Eastern Wiradjuri Wilpinjong Community Fund Limited	129	M. Yelds	212	E. & M. Lepik
47	S.F. & M.R. Andrews	130	G. McEwen	213	D. & J.Parsonage
48	Moolarben Coal Mine Owned/Controlled Land	131	G.R. & R.A. King	214	R. & E. O'Neil
49	Moolarben Coal Mine Owned/Controlled Land	132	N. Atkins	215	S. & P. Green
50	Moolarben Coal Mine Owned/Controlled Land	133	J.M. & T.E. Tynan	216	G. Holland & F. Handicott
51	Moolarben Coal Mine Owned/Controlled Land	134	Moolarben Coal Mine Owned/Controlled Land	217	R.P. & J.L. Patterson
52	Moolarben Coal Mine Owned/Controlled Land	136	Cumbo Land Pty Ltd	218	G. & G. Soady
53	W.D. & M.S. Bryant	137	Cumbo Land Pty Ltd	219	T. & S. Riger
54	M. A. & C. Harris	138	Cumbo Land Pty Ltd	220	S. Rusten & N. Smith
55	M.J. Cundy	139	Ulan Coal Mines Ltd.	221	State of NSW
56	M.J.& V Cundy	140	Cumbo Land Pty Ltd	222	B. Purtell
57	M.J. Cundy	141	Wilpinjong Coal Pty. Limited141	223	E. Palmer & J. Stewart
58	Moolarben Coal Mine Owned/Controlled Land	142	Cumbo Land Pty Ltd	224	R. & P. Dupond
59	G. & G. M. Szymkarcuk	143	Cumbo Land Pty Ltd	225	G. & R.F. Doulates
60	C.L. Rayner & D.M. Mundey	144	J.T. & Y.R Jones	226	L. & F. Muscat
61	M.A. Miller	145	Cumbo Land Pty Ltd	227	W. & J. Hughes
62	R. C. Menchin	146	Cumbo Land Pty Ltd	228	P. Libertis
63	B. F. & B. Whiticker	147	Cumbo Land Pty Ltd	229	J. & B. Lowe
64	Moolarben Coal Mine Owned/Controlled Land	148	Moolarben Coal Mine Owned/Controlled Land	230	D. Rawlinson & D. Hoole
65	Cumbo Land Pty Ltd	149	Mid Western Regional Council	231	T. Morrison & S. Benny
66	Rostherne Pty Ltd	150	Ulan Coal Mines Ltd	232	L. & J. Haaring
68	Cumbo Land Pty Ltd	151	A.I. Cunningham (Land entrusted to Catholic Church)	233	K. & D. Boal
69	Moolarben Coal Mine Owned/Controlled Land	152	Moolarben Coal Mine Owned/Controlled Land	234	D. & L. Gaw
70	D.J. & A. Coventry	153	Moolarben Coal Mine Owned/Controlled Land	235	L. & R. Wilson
71	Council of the Shire of Mudgee	154	Moolarben Coal Mine Owned/Controlled Land	236	R. & C. Donovan

No.	NAME	No.	NAME	No.	NAME
72	Ulan Electricity	155	Moolarben Coal Mine Owned/Controlled Land	237	A. Puskaric
73	Moolarben Coal Mine Owned/Controlled Land	156	Moolarben Coal Mine Owned/Controlled Land	238	B. Powell
74	Moolarben Coal Mine Owned/Controlled Land	157	Moolarben Coal Mine Owned/Controlled Land	239	J. Delarue
75	P. Ban	158	Moolarben Coal Mine Owned/Controlled Land	240	G.J. & D.M. Hartley
76	S.R & P.C Carbone	159	Moolarben Coal Mine Owned/Controlled Land	241	Moolarben Coal Mine Owned/Controlled Land
77	Moolarben Coal Mine Owned/Controlled Land	160	Minister for Education & Training	242	Mid Western Regional Council
78	Moolarben Coal Mine Owned/Controlled Land	160b	Moolarben Coal Mine Owned/Controlled Land	243	R.J. Hopper & T.H. Thompson
79	P. T.J. & S.E. Nagle	161	Moolarben Coal Mine Owned/Controlled Land	244	Y.R. Jones
80	W. & D.I. Sebelic	162	D.M. Harrison	245	M.P. & K.L.E. Cresham
81	Moolarben Coal Mine Owned/Controlled Land	163	Moolarben Coal Mine Owned/Controlled Land	246	A.W. & L.M. Murray
247	J. & H. & K. Batshon	258	P.M. & C.D. Elias	308	N.A. Dower
248	G. Boustani	259	State Rail Authority of NSW	309	G.S. Maher
249	C.J. & J.I. Eldridge	299	Country Energy	310	K.I. Death
250	G.C. Eldridge	300	C.M. Collins & C.Y. Marshall	311	B.J. & L.C. Williamson
251	N.F. Potter & C.E. Selley	301	Moolarben Coal Mine Owned/Controlled Land	312	M.S. & J.J. Ioannou
252	G.A. & R.M. Johnston	302	Moolarben Coal Mine Owned/Controlled Land	313	N.J. & B.D.E. Pracy
253	Ulan Coal Mines Ltd	303	H.J. Ungaro	314	S.L. Ford
254	Ulan Coal Mines Ltd	304	G. Balajan	315	W.J. Richards & B.J. Uzelac
255	H.J. & H. Schmitz	305	L. Barisic & M. Aul	316	C.R. Vassel & C.M. Williams
256	R.C. Campbell	306	E. Armstrong	317	R.J. Hore & V. Bingham
257	Ulan Coal Mines Ltd	307	M. Chant & N.K. Young	320	Moolarben Coal Mine Owned/Controlled Land

APPENDIX 6:
NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Table 2 of the conditions are to apply under all meteorological conditions except the following:
   (a) wind speeds greater than 3 m/s at 10 metres above ground level; or
   (b) stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m above ground level; or
   (c) stability category G temperature inversion conditions.

Determination of Meteorological Conditions

1. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.

Compliance Monitoring

2. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.

3. This monitoring must be carried out at least 12 times a year, unless the Secretary directs otherwise.

4. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the NSW Industrial Noise Policy (as amended from time to time), in particular the requirements relating to:
   (a) monitoring locations for the collection of representative noise data;
   (b) meteorological conditions during which collection of noise data is not appropriate;
   (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
   (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

APPENDIX 7:
UNDERGROUND MINE LAYOUT AND LOCATION OF SENSITIVE FEATURES

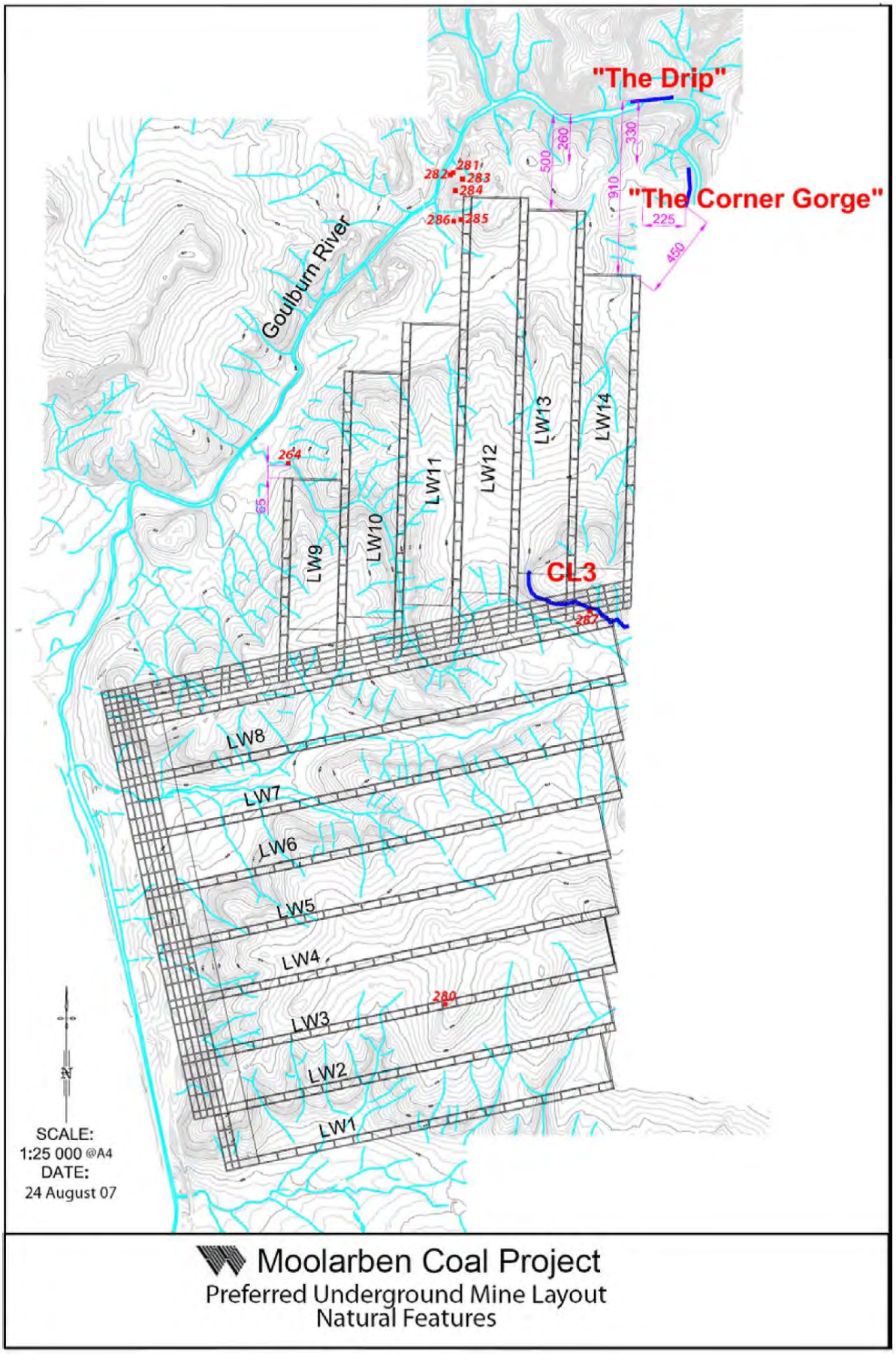


Figure 7.1 Sensitive Natural Features

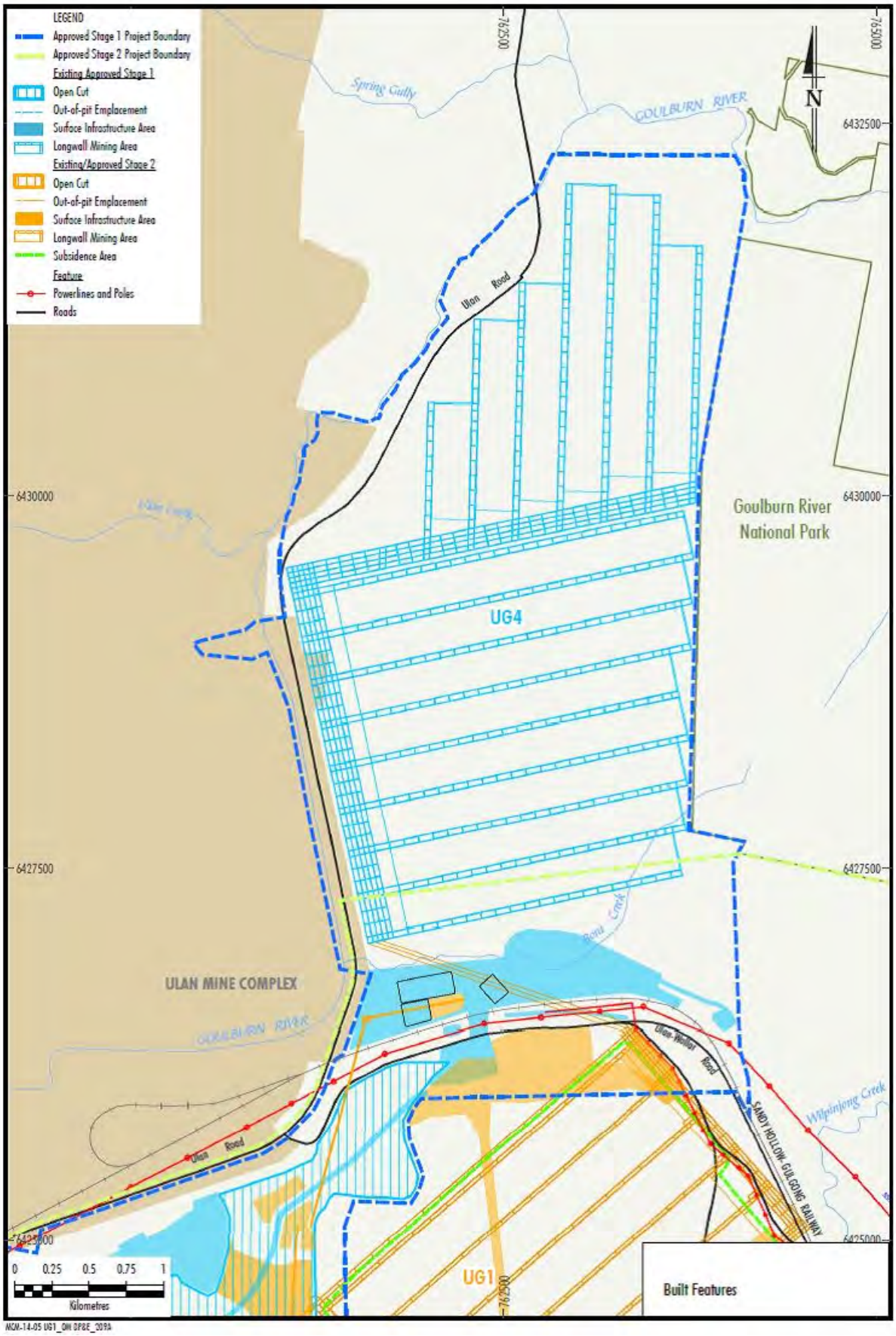
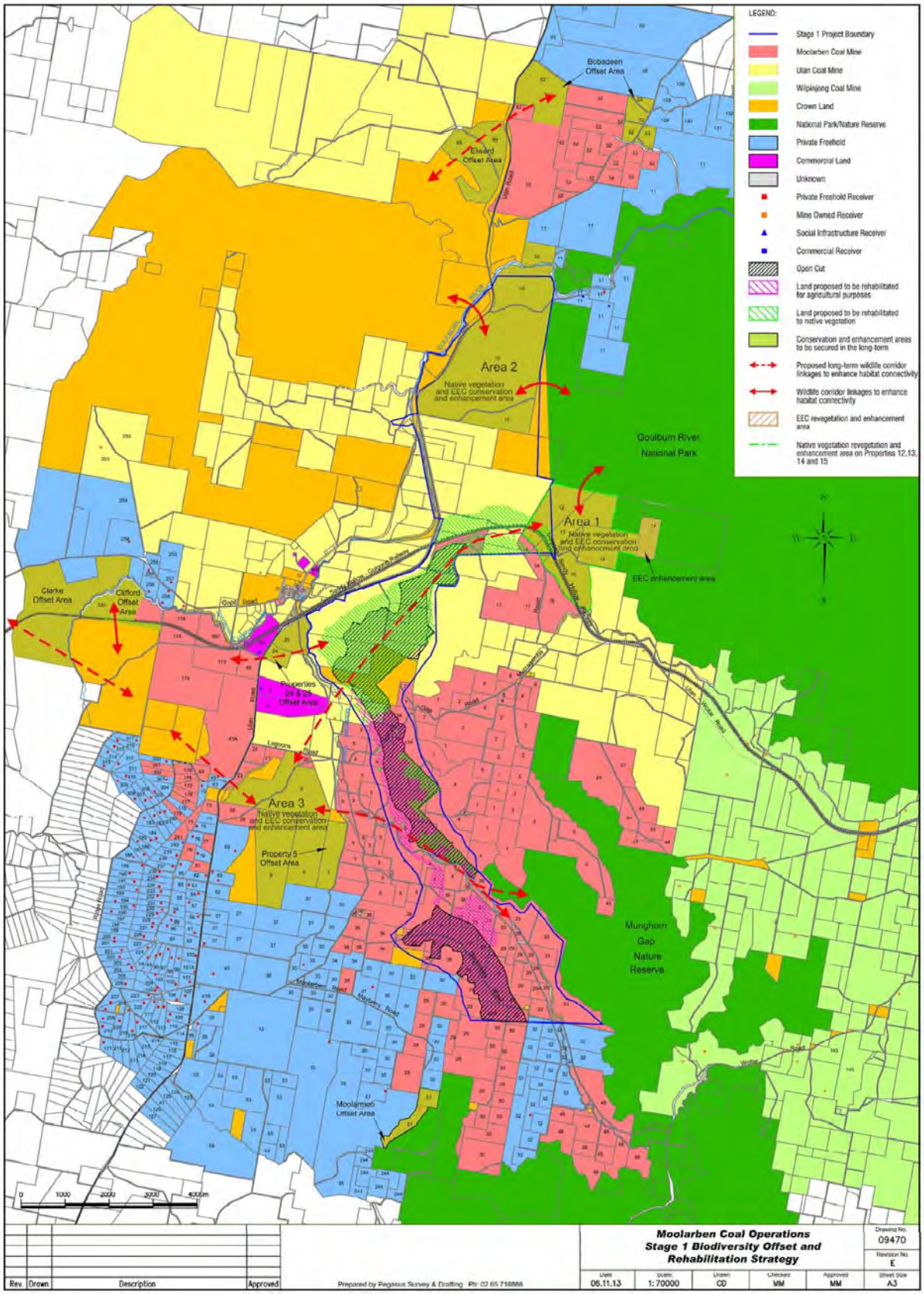
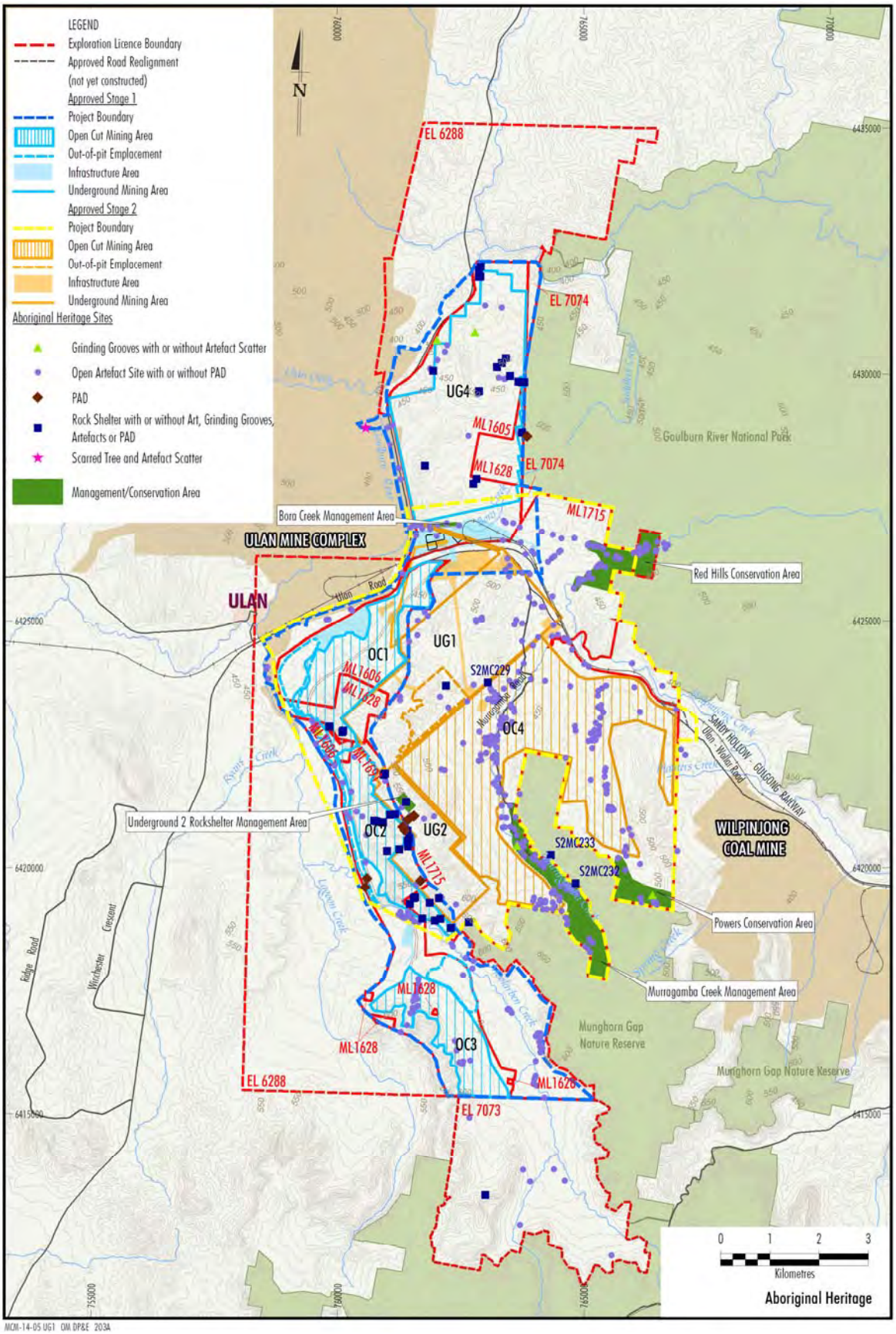


Figure 7.2 Sensitive Built Features

APPENDIX 8:
REHABILITATION AND BIODIVERSITY OFFSET STRATEGY



APPENDIX 9:
ABORIGINAL HERITAGE



Site Name	Site Type	X Centre	Y Centre	Artefact Density	Management Recommendation
S1MC1	Scarred Tree	760670	6424444	1	Intensive scientific recording prior to disturbance.
S1MC2	Artefact Scatter	760840	6424339	14	Surface Collection
S1MC3	Isolated Find	760846	6424309	1	Surface Collection
S1MC4	Isolated Find	760866	6424307	1	Surface Collection
S1MC5	Artefact Scatter	760867	6424306	3	Surface Collection
S1MC6	Isolated Find	760890	6424301	1	Surface Collection
S1MC7	Isolated Find	760867	6424294	1	Surface Collection
S1MC8	Isolated Find	760548	6424002	1	Surface Collection
S1MC9	Isolated Find	760508	6424018	1	Surface Collection
S1MC10	Isolated Find	760645	6424004	1	Surface Collection
S1MC11	Artefact Scatter	760924	6423968	3	Surface Collection
S1MC12	Isolated Find	760933	6423948	1	Surface Collection
S1MC13	Isolated Find	761054	6423910	1	Surface Collection
S1MC14	Isolated Find	761050	6423907	1	Surface Collection
S1MC15	Isolated Find	761252	6425269	1	Surface Collection
S1MC16	Isolated Find	761168	6425107	1	Surface Collection
S1MC17	Isolated Find	760997	6425271	1	Surface Collection
S1MC18	Isolated Find	759777	6425026	1	Conservation
S1MC19	Isolated Find	759786	6425012	1	Conservation
S1MC20	Isolated Find	759816	6425028	1	Conservation
S1MC21	Isolated Find	760296	6425214	1	Conservation
S1MC 22	Isolated Find	760297	6425216	1	Conservation
S1MC 23	Isolated Find	760269	6425239	1	Conservation
S1MC24	Isolated Find	760514	6425250	1	Surface Collection
S1MC25	Isolated Find	761802	6425783	1	Surface Collection
S1MC26	Isolated Find	761766	6425183	1	Conservation
S1MC27	Isolated Find	761828	6425100	1	Conservation
S1MC28	Isolated Find	761627	6425002	1	Conservation
S1MC29	Isolated Find	761619	6424707	1	Conservation
S1MC30	Isolated Find	761135	6424559	1	Surface Collection
S1MC31	Isolated Find	761132	6424567	1	Surface Collection
S1MC32	Isolated Find	761124	6424585	1	Surface Collection
S1MC33	Isolated Find	761125	6424584	1	Surface Collection
S1MC34	Isolated Find	761128	6424583	1	Surface Collection
S1MC35	Isolated Find	761125	6424584	1	Surface Collection
S1MC36	Isolated Find	761255	6424616	1	Surface Collection
S1MC37	Isolated Find	761255	6424616	1	Surface Collection
S1MC38	Isolated Find	761279	6424617	1	Surface Collection
S1MC39	Isolated Find	761279	6424617	1	Surface Collection
PAD 1	Pad 1	761452	6424581	N/A	Conservation
PAD 2	Pad 2	761265	6423464	N/A	Conservation
PAD 3	Pad 3	761265	6423392	N/A	Conservation
S1MC40	Artefact Scatter	760441	6421958	12	Test Excavations and Salvage
S1MC41	Isolated Find	760384	6421732	1	Test Excavations and Salvage
S1MC42	Isolated Find	760408	6421838	1	Test Excavations and Salvage
S1MC43	Artefact Scatter	760558	6421874	9	Test Excavations and Salvage
S1MC44	Isolated Find	760550	6421657	1	Test Excavations and Salvage
S1MC45	Isolated Find	760582	6421721	1	Test Excavations and Salvage
S1MC46	Isolated Find	760547	6421941	1	Test Excavations and Salvage
S1MC47	Isolated Find	760637	6422033	1	Test Excavations and Salvage

Site Name	Site Type	X Centre	Y Centre	Artefact Density	Management Recommendation
S1MC48	Isolated Find	760569	6421916	1	Test Excavations and Salvage
S1MC49	Isolated Find	760543	6422069	1	Test Excavations and Salvage
S1MC50	Isolated Find	760340	6422126	1	Test Excavations and Salvage
S1MC51	Isolated Find	760434	6422195	1	Test Excavations and Salvage
S1MC52	Isolated Find	760422	6422175	1	Test Excavations and Salvage
S1MC53	Artefact Scatter	759942	6422062	39	Test Excavations and Salvage
S1MC54	Artefact Scatter	760966	6421764	3	Conservation
S1MC55	Rockshelter & Artefacts	760964	6421902	8	Conservation
S1MC56	Rockshelter & Artefacts	760936	6421882	1	Conservation
S1MC57	Artefact Scatter	760906	6421882	16	Conservation
S1MC58	Artefact Scatter	761241	6419040	10	Conservation
S1MC59	Artefact Scatter	761274	6419089	8	Conservation
S1MC60	Artefact Scatter	761555	6418906	12	Conservation
S1MC61	Isolated Find	761650	6418891	1	Conservation
S1MC62	Isolated Find	761503	6418958	1	Conservation
S1MC63	Isolated Find	761502	6418979	1	Conservation
S1MC64	Isolated Find	761502	6418979	1	Conservation
S1MC65	Isolated Find	761382	6418984	1	Conservation
S1MC66	Artefact Scatter	761345	6418974	24	Conservation
S1MC67	Artefact Scatter	761298	6418996	52	Conservation
S1MC68	Isolated Find	761300	6419026	1	Conservation
S1MC69	Isolated Find	761300	6419031	1	Conservation
S1MC70	Isolated Find	761427	6419023	1	Conservation
S1MC71	Isolated Find	761427	6419023	1	Conservation
S1MC72	Isolated Find	761421	6419023	1	Conservation
S1MC73	Isolated Find	761429	6419089	1	Conservation
S1MC74	Isolated Find	761687	6419730	1	Conservation
S1MC75	Isolated Find	761683	6419722	1	Conservation
S1MC76	Isolated Find	761683	6419722	1	Conservation
S1MC77	Isolated Find	761597	6419653	1	Unmitigated impact
PAD 4	Pad 4	761685	6419735	N/A	Conservation
PAD 5	Pad 5	761685	6419735	N/A	Conservation
PAD 6	Pad 6	761341	6420748	N/A	Conservation
36-3-0222	Artefact Scatter	760420	6420820	6	Intensive Recording and Salvage
36-3-0223	Isolated Find	760420	6420880	1	Intensive Recording and Salvage
S1MC78	Artefact Scatter	761628	6417183	12	Test Excavations and Salvage
S1MC79	Isolated Find	761592	6417154	1	Test Excavations and Salvage
S1MC80	Isolated Find	761535	6417281	1	Surface Collection
S1MC81	Isolated Find	761547	6417308	1	Surface Collection
S1MC82	Isolated Find	761563	6417309	1	Surface Collection
S1MC83	Isolated Find	761557	6417330	1	Surface Collection
S1MC84	Artefact Scatter	761580	6417360	6	Surface Collection
S1MC85	Isolated Find	761613	6417323	1	Surface Collection
S1MC86	Isolated Find	761612	6417508	1	Surface Collection
S1MC87	Isolated Find	761615	6417500	1	Surface Collection
S1MC88	Isolated Find	761608	6417465	1	Surface Collection
S1MC89	Isolated Find	761591	6417421	1	Surface Collection
S1MC90	Isolated Find	761579	6417403	1	Surface Collection

Site Name	Site Type	X Centre	Y Centre	Artefact Density	Management Recommendation
S1MC91	Isolated Find	761631	6417624	1	Surface Collection
S1MC92	Isolated Find	761659	6417596	1	Surface Collection
S1MC93	Isolated Find	761659	6417588	1	Surface Collection
S1MC94	Artefact Scatter	761638	6417728	3	Surface Collection
S1MC95	Isolated Find	762537	6415994	1	Surface Collection
S1MC96	Isolated Find	762530	6416009	1	Surface Collection
S1MC97	Isolated Find	762523	6416029	1	Surface Collection
S1MC98	Isolated Find	762475	6416038	1	Surface Collection
S1MC99	Isolated Find	762553	6416059	1	Surface Collection
S1MC100	Isolated Find	762414	6416282	1	Surface Collection
S1MC101	Isolated Find	762415	6416282	1	Surface Collection
S1MC102	Artefact Scatter	762379	6416477	3	Surface Collection
S1MC103a	Artefact Scatter	762693	6416081	2	Surface Collection
S1MC103	Artefact Scatter	763978	6415601	184	Conservation
S1MC104	Artefact Scatter	764042	6415564	4	Conservation
S1MC105	Isolated Find	763996	6415683	1	Conservation
S1MC106	Isolated Find	764013	6415735	1	Conservation
S1MC107	Isolated Find	766017	6415739	1	Conservation
S1MC108	Isolated Find	764026	6415756	1	Conservation
S1MC109	Isolated Find	764023	6416068	1	Conservation
S1MC110	Isolated Find	764118	6416246	1	Conservation
S1MC111	Isolated Find	764135	6416310	1	Conservation
S1MC112	Isolated Find	764136	6416312	1	Conservation
S1MC113	Isolated Find	764140	6416326	1	Conservation
S1MC114	Isolated Find	764148	6416337	1	Conservation
S1MC115	Isolated Find	764124	6416425	1	Conservation
S1MC116	Isolated Find	764114	6416357	1	Conservation
S1MC117	Isolated Find	764095	6416462	1	Conservation
S1MC118	Isolated Find	764026	6416575	1	Conservation
S1MC119	Isolated Find	764027	6416566	1	Conservation
S1MC120	Isolated Find	764095	6416601	1	Conservation
S1MC121	Isolated Find	764111	6416632	1	Conservation
S1MC122	Isolated Find	764066	6416619	1	Conservation
S1MC123	Isolated Find	764064	6416622	1	Conservation
S1MC124	Isolated Find	764070	6416630	1	Conservation
S1MC125	Isolated Find	764058	6416612	1	Conservation
S1MC126	Isolated Find	764056	6416612	1	Conservation
S1MC127	Isolated Find	764121	6416573	1	Conservation
S1MC128	Isolated Find	764161	6416333	1	Conservation
S1MC129	Isolated Find	764118	6416557	1	Conservation
S1MC130	Artefact Scatter	762600	6418163	23	Conservation
S1MC131	Isolated Find	762763	6418104	1	Conservation
S1MC132	Artefact Scatter	763451	6417107	33	Conservation
S1MC133	Artefact Scatter	763477	6417119	7	Conservation
S1MC134	Isolated Find	763507	6417086	1	Conservation
S1MC135	Artefact Scatter	763535	6417042	32	Conservation
S1MC136	Artefact Scatter	762737	6417948	5	Conservation
S1MC137	Isolated Find	762338	6418398	1	Conservation
S1MC138	Isolated Find	762315	6418451	1	Conservation
S1MC139	Artefact Scatter	762549	6417807	23	Test Excavations and Salvage
S1MC140	Artefact Scatter	761278	6416654	4	Conservation

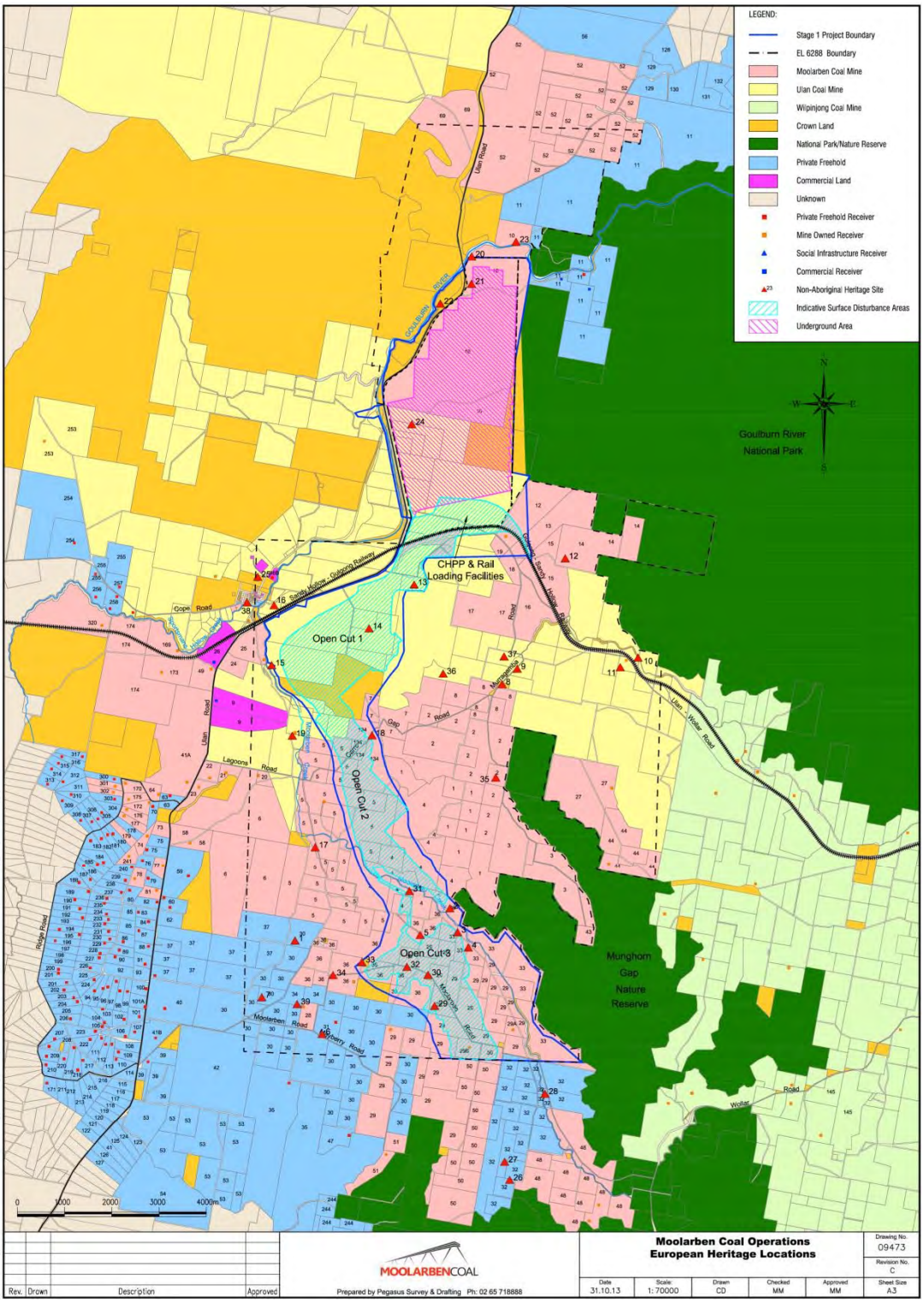
Site Name	Site Type	X Centre	Y Centre	Artefact Density	Management Recommendation
S1MC141	Isolated Find	761409	6416796	1	Test Excavations and Salvage
S1MC142	Isolated Find	761479	6417036	2	Test Excavations and Salvage
S1MC143	Artefact Scatter	761535	6417066	3	Test Excavations and Salvage
S1MC144	Isolated Find	761519	6417142	1	Test Excavations and Salvage
PAD 8	Pad 8	761478	6421053	0	Conservation
PAD 9	Pad 9	761552	6421040	0	Conservation
PAD 10	Pad 10	761551	6421051	0	Conservation
PAD 11	Pad 11	761426	6420964	0	Conservation
PAD 12	Pad 12	761318	6420832	0	Unmitigated impact
S1MC213	Isolated Find	764196	6415322	1	Conservation
S1MC225	Isolated Find	761752	6425887	1	Test Excavations and Salvage
S1MC226	Isolated Find	761726	6426232	1	Test Excavations and Salvage
S1MC227	Isolated Find	761825	6426206	1	Test Excavations and Salvage
S1MC228	Artefact Scatter	762428	6426370	13	Test Excavations and Salvage
S1MC229	Isolated Find	762430	6426375	1	Test Excavations and Salvage
S1MC230	Artefact Scatter	761640	6426786	69	Test Excavations and Salvage
S1MC231	Isolated Find	761907	6426804	1	Test Excavations and Salvage
S1MC232	Isolated Find	761926	6426825	1	Test Excavations and Salvage
S1MC233	Artefact Scatter	761954	6426840	2	Test Excavations and Salvage
S1MC234	Isolated Find	761990	6426858	1	Test Excavations and Salvage
S1MC235	Isolated Find	762126	6426823	1	Test Excavations and Salvage
S1MC236	Artefact Scatter	762199	6426811	14	Test Excavations and Salvage
S1MC237	Isolated Find	762202	6426805	1	Test Excavations and Salvage
S1MC238	Isolated Find	762211	6426803	1	Test Excavations and Salvage
S1MC239	Isolated Find	762220	6426805	1	Test Excavations and Salvage
S1MC240	Artefact Scatter	762231	6426802	7	Test Excavations and Salvage
S1MC241	Artefact Scatter	762272	6426800	10	Test Excavations and Salvage
S1MC242	Isolated Find	762291	6426800	1	Test Excavations and Salvage
S1MC243	Isolated Find	762310	6426800	1	Test Excavations and Salvage
S1MC244	Artefact Scatter	762395	6426732	1	Test Excavations and Salvage
S1MC244a	Artefact Scatter	761552	6426828	30	Test Excavations and Salvage
S1MC245	Isolated Find	761747	6426767	1	Test Excavations and Salvage
S1MC246	Isolated Find	761820	6426775	1	Test Excavations and Salvage
S1MC247	Isolated Find	761831	6426745	1	Test Excavations and Salvage
S1MC248	Isolated Find	761863	6426758	1	Test Excavations and Salvage
S1MC249	Isolated Find	761863	6426771	1	Test Excavations and Salvage
S1MC250	Isolated Find	761860	6426773	1	Test Excavations and Salvage
S1MC252	Isolated Find	761867	6426779	1	Test Excavations and Salvage
S1MC253	Isolated Find	761870	6426772	1	Test Excavations and Salvage
S1MC254	Artefact Scatter	763332	6431357	2	Conservation
S1MC255	Isolated Find	763332	6431357	1	Test Excavations and Salvage
S1MC256	Artefact Scatter	762878	6429620	23	Monitor subsidence
S1MC257	Artefact Scatter	762850	6429600	4	Conservation
S1MC258	Artefact Scatter	762865	6429652	2	Conservation
S1MC259	Isolated Find	762889	6429671	1	Conservation
S1MC260	Isolated Find	762849	6429605	1	Conservation
S1MC261	Rockshelter & Artefact	762876	6429660	2	Conservation
S1MC262	Isolated Find	762876	6429676	1	Conservation
S1MC263	Isolated Find	762177	6430458	1	Conservation
S1MC264	Grinding Grooves & Artefacts	762010	6430705	78	Monitor subsidence: Intensive recording.

Site Name	Site Type	X Centre	Y Centre	Artefact Density	Management Recommendation
S1MC265	Artefact Scatter	762224	6430592	3	Conservation
S1MC266	Isolated Find	763000	6431393	1	Conservation
S1MC267	Rockshelter & Artefact	761945	6430063	10	Monitor subsidence
S1MC268	Isolated Find	761875	6430102	1	Conservation
S1MC269	Isolated Find	761882	6430110	1	Conservation
S1MC270	Isolated Find	762024	6430287	1	Monitor subsidence
S1MC271	Rockshelter & Artefacts	763749	6428829	8	Monitor subsidence
S1MC272	Artefact Scatter	763827	6428747	2	Conservation
S1MC273	Isolated Find	762660	642864	1	Conservation
S1MC274	Isolated Find	761580	6426932	1	Conservation
S1MC275	Isolated Find	761878	6426869	1	Conservation
S1MC276	Isolated Find	761877	6426917	1	Conservation
S1MC277	Isolated Find	761862	6426931	1	Conservation
S1MC278	Isolated Find	761688	6426940	1	Conservation
S1MC279	Isolated Find	761551	6426963	1	Conservation
S1MC280	Rockshelter & Artefacts	762822	6427883	45	Monitor subsidence: Intensive recording.
S1MC281	Artefact Scatter	762865	6432219	11	Monitor subsidence
S1MC282	Artefact Scatter	762851	6432207	65	Monitor subsidence
S1MC283	Rockshelter & Artefacts	762912	6432185	6	Monitor subsidence
S1MC284	Rockshelter & Artefacts	762877	6432127	8	Monitor subsidence
S1MC285	Rockshelter & Artefacts	762905	6431976	2	Monitor subsidence
S1MC286	Rockshelter & Artefacts	762868	6431969	28	Monitor subsidence
S1MC287	Rockshelter & Artefacts	763240	6430143	28	Monitor subsidence: Intensive recording.
S1MC288	Rockshelter & Artefacts	763336	6430223	1	Monitor subsidence: Intensive recording.
S1MC289	Rockshelter & Artefacts	763795	6429838	9	Monitor subsidence: Intensive recording.
S1MC290	Rockshelter & Artefacts	763739	6429835	5	Monitor subsidence: Intensive recording.
S1MC291	Isolated Find	763726	6429853	1	Monitor subsidence: Intensive recording.
S1MC292	Isolated Find	763406	6429904	1	Monitor subsidence: Intensive recording.
S1MC293	Isolated Find	763385	6429901	1	Monitor subsidence: Intensive recording.
S1MC294	Rockshelter & Artefacts	763673	6429849	2	Monitor subsidence: Intensive recording.
S1MC295	Isolated Find	763273	6429928	1	Monitor subsidence: Intensive recording.
S1MC296	Rockshelter & Artefacts	763503	6429961	12	Monitor subsidence: Intensive recording.
S1MC297	Rockshelter & Artefacts	763420	6430329	5	Monitor subsidence: Intensive recording.
PAD 7	Pad 7	763846	6428750	0	Conservation
S1MC298	Artefact Scatter	759258	6423654	75	Test Excavation & Salvage
S1MC299	Isolated Find	759331	6423850	1	Surface Collection
S1MC300	Artefact Scatter	759071	6423798	41	Intensive Recording & Surface Collection
S1MC301	Artefact Scatter	758997	6424100	10	Surface Collection

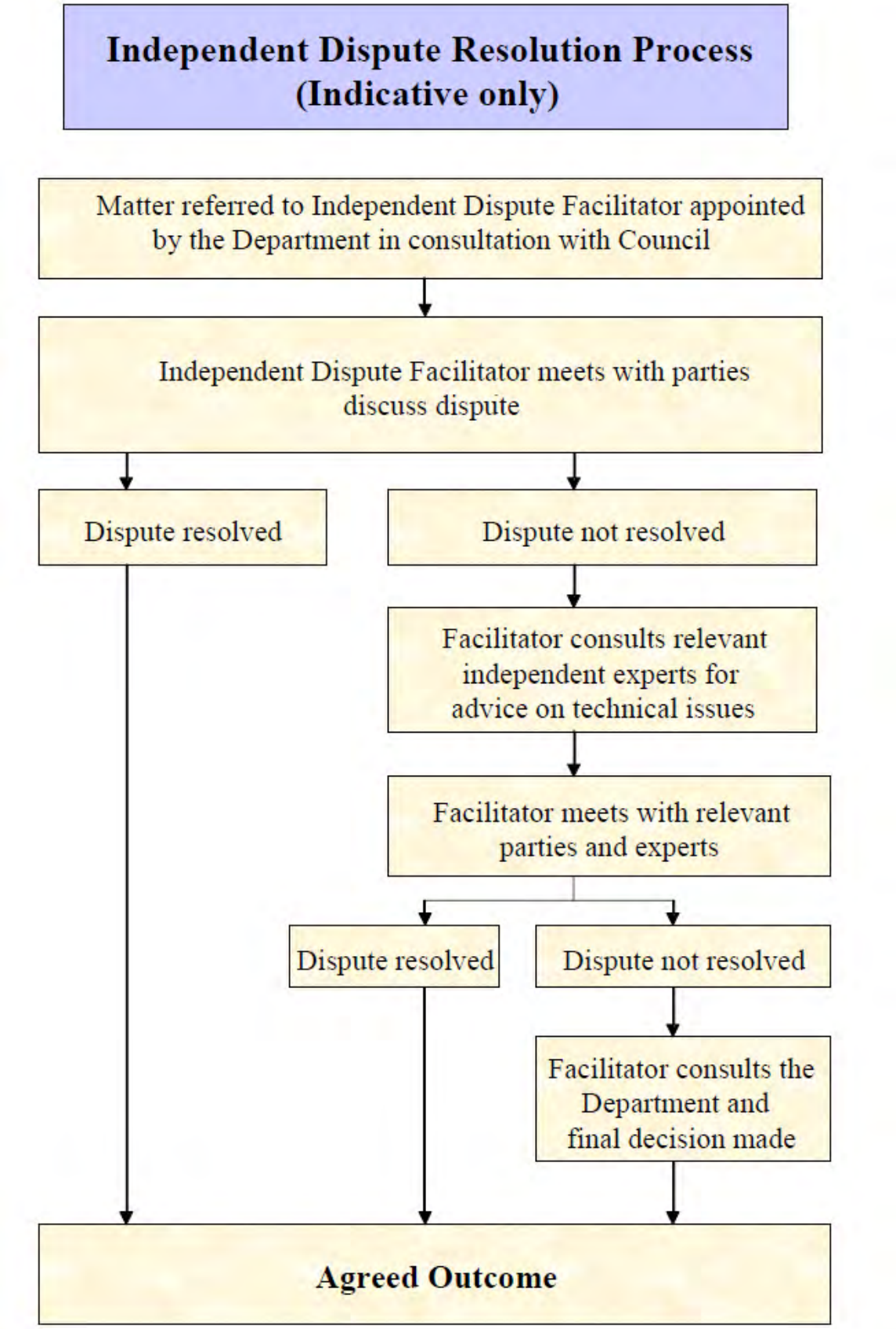
Site Name	Site Type	X Centre	Y Centre	Artefact Density	Management Recommendation
S1MC302	Artefact Scatter	758881	6423779	20	Surface Collection
S1MC303	Artefact Scatter and PAD	762029	6426950	249	Conservation
S1MC304	Artefact Scatter and PAD	762216	6426991	63	Conservation
S1MC305	Artefact Scatter and PAD	762474	6426945	143	Conservation
S1MC306	Isolated Find	763630	6426632	1	Surface Collection
S1MC307	Isolated Find	763714	6426587	1	Surface Collection
S1MC308	Artefact Scatter	763945	6426408	2 + PAD	Test Excavation & Salvage
S1MC309	Isolated Find	763991	6426357	1	Surface Collection
S1MC310	Isolated Find	761014	6428930	1	Surface Collection
S1MC311	Isolated Find	761232	6428099	1	Surface Collection
S1MC312	Isolated Find	761279	6427873	1	Surface Collection
S1MC313	Artefact Scatter	762188	6429182	2	Surface Collection
S1MC314	Artefact Scatter and PAD	761819	6429071	2	Test Excavation & Salvage
S1MC315	Isolated Find	761959	6429047	1	Surface Collection
S1MC316	Artefact Scatter	762039	6429072	2	Surface Collection
S1MC317	Isolated Find	762078	6429120	1	Surface Collection
S1MC318	Isolated Find	762107	6429141	1	Surface Collection
S1MC319	Isolated Find	761634	6429082	1	Surface Collection
S1MC320	Isolated Find	761047	6429251	1	Surface Collection
S1MC321	Isolated Find	763728	6427662	1	Surface Collection
S1MC322	Artefact Scatter and PAD	763693	6428813	3	Conservation
S1MC323	Isolated Find	763211	6432118	1	Surface Collection
S1MC324	Isolated Find	763245	6432104	1	Surface Collection
S1MC325	Isolated Find	760137	6423587	1	Unmitigated impact
S1MC326	Rock Shelter & PAD	759832	6422848	N/A	Unmitigated impact
S1MC327	Rock Shelter & PAD	759841	6422853	N/A	Unmitigated impact
S1MC328	Isolated Find	759847	6422847	1	Unmitigated impact
S1MC329	Rock Shelter & PAD	760119	6422761	N/A	Unmitigated impact
S1MC330	Rock Shelter & PAD	760097	6422739	N/A	Unmitigated impact
S1MC331	Rock Shelter & Artefacts	760843	6421283	10	Test excavation & salvage
S1MC332	Rock Shelter & PAD	762299	6418767	N/A	Unmitigated impact
S1MC333	Rock Shelter & PAD	762086	6418954	N/A	Unmitigated impact
S1MC334	Rock Shelter & PAD	761975	6418915	N/A	Unmitigated impact
S1MC335	Rock Shelter & PAD	761874	6419277	N/A	Unmitigated impact
S1MC336	Rock Shelter & PAD	761725	6418961	N/A	Unmitigated impact
S1MC337	Rock Shelter & PAD	761575	6419390	N/A	Unmitigated impact
S1MC338	Rock Shelter & PAD	761564	6419379	N/A	Unmitigated impact
S1MC339	Rock Shelter & PAD	761544	6419370	N/A	Unmitigated impact

Site Name	Site Type	X Centre	Y Centre	Artefact Density	Management Recommendation
S1MC340	Rock Shelter & PAD	761472	6419251	N/A	Unmitigated impact
S1MC341	Rock Shelter & PAD	761009	6420337	N/A	Unmitigated impact
S1MC342	Rock Shelter & PAD	761252	6420370	N/A	Unmitigated impact
S1MC343	Rock Shelter & PAD	761430	6420424	N/A	Monitor blasting: test excavation & salvage
S1MC344	Rock Shelter & Artefacts	761434	6420500	6	Monitor blasting: test excavation & salvage
S1MC345	Rock Shelter & PAD	761438	6420476	N/A	Unmitigated impact
S1MC346	Rock Shelter & PAD	761423	6420537	N/A	Unmitigated impact
S1MC347	Rock Shelter & PAD	760928	6420913	N/A	Unmitigated impact
S1MC348	Rock Shelter & PAD	760901	6420914	N/A	Unmitigated impact
S1MC349	Rock Shelter & PAD	760793	6420933	N/A	Unmitigated impact
S1MC350	Rock Shelter & PAD	760746	6420946	N/A	Unmitigated impact
S1MC351	Rock Shelter & PAD	761070	6421070	N/A	Unmitigated impact
S1MC352	Rock Shelter & PAD	761168	6421080	N/A	Unmitigated impact
S1MC353	Rock Shelter & PAD	761421	6420743	N/A	Unmitigated impact
S1MC354	Rock Shelter & PAD	761448	6420591	N/A	Unmitigated impact
S1MC355	Artefact Scatter	760344	6422239	2	Unmitigated impact
S1MC356	Artefact Scatter	763124	6426882	1	Salvage
S1MC357	Artefact Scatter	762882	6426983	1	Salvage
S2MC1	Isolated Find	763454	6426266	1	Surface collection
S2MC256	Artefact Scatter	763698	6426910	2	Conservation
S2MC257	Isolated Find	763567	6426991	1	Conservation
S2MC258	Artefact Scatter & PAD	763414	6427000	9	Conservation
S2MC259	Isolated Find	763374	6427039	1	Conservation
S2MC260	Isolated Find	765318	6426505	1	Surface collection
CE-15-IF	Isolated Find	761205	6425777	1	Surface collection

APPENDIX 10:
NON-ABORIGINAL HERITAGE



No	Place Name	Impact Status	Significance	Summary Recommendation
2	Farm site. Portion 218. Ph Moolarben	No impact	Local – moderate	No further action required In situ conservation.
3	Burial site, Roberts family. Portion 146, Ph Moolarben	Impact by Open Cut 3 development	Local – high	Exhumation. Discussion to be held with related families.
4	House & burial site. Portion 63, Ph Moolarben	Impact by Open Cut 3 development	Local – moderate	Exhumation. Discussion to be held with related families.
14	House site. Portion 178 Ph Moolarben	Impact by Open Cut 1 development	Local – moderate	Archival recording
15	Moolarben Dam	No impact	Local – moderate	In situ conservation
18	Carr's Gap Road. Portion 30. Ph Moolarben	Impact by Open Cut 2 development likely	Local – moderate	Archival recording In situ conservation. If impacted recovery works to be recommended
19	Farm site. 'Glen Moor', Portion 203 Ph Moolarben	No impact	Local – exceptional	Archival recording. In situ conservation.
20	Grave & memorial garden. Portion 30 Ph Lennox	No impact	Local - high	Area to be maintained.
22	Stock yards. Portion 34 Ph Lennox	No impact	Local – moderate	Archival recording. In situ conservation.
23	Natural environment. 'The Drip'	No impact	Local – high	Ensure public access is maintained
29	House site. Portion 45 Ph Moolarben	Impact by Open Cut 3 development	Local – moderate	Archival recording.
30	School site. Portion 176 Ph Moolarben	Impact by Open Cut 3 development	Local – moderate	Archival recording.
31	House site, Portion 228, Ph Moolarben	No impact	Local – moderate	Archival recording. In situ conservation.
32	House site. Portion 89 Ph Moolarben	Impact by Open Cut 3 development	Local – moderate	Archival recording.
33	Recreation Ground. Portion 204. Ph Moolarben	No impact	Local – moderate	Archival recording. In situ conservation.


Independent Dispute Resolution Process
(Indicative only)
Matter referred to Independent Dispute Facilitator appointed by the Department in consultation with Council
Independent Dispute Facilitator meets with parties discuss dispute
Dispute resolved
Dispute not resolved
Facilitator consults relevant independent experts for advice on technical issues
Facilitator meets with relevant parties and experts
Dispute resolved
Dispute not resolved
Facilitator consults the Department and final decision made
Agreed Outcome

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning and Public Spaces, the Independent Planning Commission modifies the Project Approval referred to in Schedule 1, subject to the conditions in Schedule 2.

Gordon Kirkby (Chair)
Commission Member

Prof. Chris Fell
Commission Member

Sydney 19 June 2019

SCHEDULE 1

Project Approval 05_0117 for the Moolarben Coal Project Stage 1, granted by the Minister for Planning on 6 September 2007.

SCHEDULE 2

1. In the list of DEFINITIONS, delete DPI Water and DRE and insert the following in alphabetical order:

ANZECC Guidelines	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
BC Act	*Biodiversity Conservation Act 2016*
BCT	NSW Biodiversity Conservation Trust
DoI Lands and Water	Department of Industry Lands and Water Division
DRG	Division of Resources and Geosciences and the Resources Regulator, within the Department
NRAR	Natural Resources Access Regulator

2. In the definition of "EA", after "24 November 2016.", insert
   - Environmental Assessment – Open Cut Optimisation Modification, Volumes 1 and 2, dated November 2017 and associated response to submissions dated May 2018; and supplementary information dated 24 August 2018 (MOD 14).

3. Delete all references to:
   (a) "DRE", and replace with "DRG";
   (b) "Industrial Noise Policy" and replace with "Noise Policy for Industry";
   (c) "DPI Water", and replace with "DoI Lands and Water";

4. In condition 6(a) of Schedule 2 delete "8" and replace with "10".

5. In condition 7(a) and 7(b) of Schedule 2, delete "13", and replace with "16".

6. In condition 8 of Schedule 2:
   (a) in condition 8(b), delete "7" and replace with "8";
   (b) in condition 8(c), delete "9" and replace with "11"; and
   (c) in condition 8(d), delete "18" and replace with "22".

7. Delete condition 1A of Schedule 3, and insert:

Acquisition on Request

1A. (deleted)

Note: the Proponent has acquired all properties provided acquisition on request rights under this approval.

8. In condition 1 of Schedule 3, in Table 1, delete Land numbers 30 and 31.

9. In condition 4 of Schedule 3, in Table 3A, delete "other than those in Table 3".

10. Delete condition 5 of Schedule 3, and insert:

Mitigation Upon Request

5. (deleted)

Note: the Proponent has acquired all properties provided mitigation upon request rights under this approval.

11. In condition 17 of Schedule 3, in Table 5:
(a) delete "30 µg/m^3", and replace with " [d] 25 µg/m^3"; and
(b) insert the following row:

Particulate Matter <2.5 µm ($PM_{2.5}$)	Annual	[a, d] 8 µg/m^3

12. In condition 17 of Schedule 3, in Table 6 , add the following row:

Particulate Matter <2.5 µm ($PM_{2.5}$)	24 hour	[b] 25 µg/m^3

13. In condition 17 of Schedule 3, in "Notes to Tables 5-7", in note b, delete ";", and insert "with up to 5 allowable exceedances over the life of the project;"

14. In condition 19 in Schedule 3, in Table 8:
(a) delete "30 µg/m^3", and replace with " [d] 25 µg/m^3"; and
(b) insert the following row:

Particulate Matter <2.5 µm ($PM_{2.5}$)	Annual	[a, d] 8 µg/m^3

15. In condition 19 in Schedule 3, in Table 9, add the following row:

Particulate Matter <2.5 µm ($PM_{2.5}$)	24 hour	[b] 25 µg/m^3	Increment [b]

16. In condition 19 of Schedule 3, in "Notes to Tables 8-10", in note b, delete ";", and insert "with up to 5 allowable exceedances over the life of the project;".

17. In condition 20 of Schedule 3, delete "dust emissions", and replace with "particulate matter (including PM_{10} and $PM_{2.5}$)".

18. In condition 20A(d) of Schedule 3, after "supplementary monitors," insert "including a real-time $PM_{2.5}$ monitor,"

19. In condition 32 of Schedule 3, in Table 11 add the following rows

Treated Water Discharge Volume	• Up to 10ML/day for the following periods (unless the Secretary agrees otherwise): o until the commencement of mining operations in UG4; and o following completion of mining operations in UG4 • Up to 15 ML/day during mining operations in UG4 • Greater than 15 ML/day during prolonged wet periods, with the approval of EPA.
Treated Water Discharge Quality	• Electrical conductivity limit of 685 µS/cm (100^{th} percentile discharge limit) for up to 10ML/day until 30 June 2022 (unless the Secretary agrees otherwise) • After 30 June 2022 (unless the Secretary agrees otherwise) an alternative electrical conductivity limit for treated water discharges as determined under condition 32A
Storages constructed for the Water Treatment Facility	• Brine and feedwater storages designed to store a 100 year ARI 72 hour storm event • Brine storages are suitably lined to comply with a permeability standard of $< 1 \times 10^{-9}$ m/s over 1000mm or equivalent standard

20. After condition 32 of Schedule 3, insert the following condition:

Independent Water Quality Study

32A. By 1 December 2021, unless the Secretary agrees otherwise, the Proponent must complete an Independent Water Quality Study in accordance with the ANZECC Guidelines, in consultation with EPA and to the satisfaction of the Secretary. The study must:
(a) be undertaken by an independent scientific organisation with suitable water expertise whose appointment has been approved by the Secretary;
(b) collect and utilise water quality monitoring data in the Goulburn River using locations endorsed by the EPA;
(c) determine appropriate background salinity and heavy metal levels for the Goulburn River upstream of the project site;
(d) recommend an electrical conductivity limit for treated water discharges to the Goulburn River from the Moolarben Coal Complex based on the process outlined in the ANZECC Guidelines.

21. In condition 33 of Schedule 3:
(a) In condition 33(a), after "DoI Lands and Water" insert ", NRAR";
(b) in condition 33(b)(ii), after "watercourses that could be affected by the project; delete "and", and insert
- daily flow levels upstream and downstream of the treated mine water discharge point in the Goulburn River Diversion; and";
(c) In condition 33(b)(iii), after "riparian vegetation", insert
- brine emplacement in underground workings and potential changes to groundwater and surface water quality;"; and
(d) In condition 33(b)(iv), after "water quality", insert "and flow".

22. After condition 33, insert the following condition:

"Brine Management Plan

33A. Prior to operating the Water Treatment Facility, the Proponent shall prepare a Brine Management Plan for the project, in consultation with the EPA, and to the satisfaction of the Secretary. This plan must:
(a) be prepared by suitably qualified and experienced persons whose appointment has been approved by the Secretary;
(b) detail the methods that would be used to manage brine, the proposed brine storage locations and the volumes of brine that would be managed at each location;
(c) detail the measures that would be implemented to avoid and/or minimise impacts from the storage of brine at the surface, and the transfer and disposal of brine in underground workings;
(d) include a program to investigate options to decrease the quantity of brine over time; and
(e) include a program to monitor potential impacts of brine storage, transfer and disposal in underground workings.

Following approval, the Proponent must implement the Brine Management Plan for the project.

Note: Water Treatment Facility operations commence following commissioning."

23. In condition 34 of Schedule 3, in the Note to Table 12, delete "TSC Act" and replace with "BC Act".

24. After condition 34 of Schedule 3, insert the following condition:

"Supplementary Biodiversity Offset Strategy

34A. The Proponent shall implement the supplementary biodiversity offset strategy for the project as summarised in Table 12A, and shown conceptually in Appendix 8A, to the satisfaction of the Secretary.

Table 12A: Summary of Supplementary Biodiversity Offset Strategy

Gilgal property credit type	***Credits required***	***Gilgal property credits (area)***	***Residual credit requirement***
Ecosystem Credits			
PCT 281[1] Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion	35	35 (5 ha)	-
PCT 618[1] White Box - Grey Box - red gum - Rough- barked Apple grassy woodland on rich soils on hills in the upper Hunter	73	0	73
PCT 1606 White Box – Narrow-leaved Ironbark – Blakely's Red Gum shrubby open forest of the central and upper Hunter	150	150 (14 ha)	-
PCT 1660[2] Narrow-leaved Ironbark heathy woodland on sandstone ranges of the Sydney Basin and Brigalow Belt South	411	411 (53 ha)	-
PCT 479[3] Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion	204	204 (22.5 ha)	-
PCT 1176[4] Slaty Box - Grey Gum shrubby woodland on footslopes of the upper Hunter Valley, Sydney Basin Bioregion	233	233 (27 ha)	-
PCT 1696 Blakely's Red Gum - Rough-barked Apple shrubby woodland of central and upper Hunter	331	0	331
Total	**1,437**	**1,033 (121.5 ha)**	**404**
Species Credits			

Gilgal property credit type	*Credits required*	*Gilgal property credits (area)*	*Residual credit requirement*
Regent Honeyeater	1,568	1,568 (221 ha)	-
Koala	77	64 (9 ha)	13
Brush-tailed Rock Wallaby	693	693 (98 ha)	-

1. Listed as or meets the criteria for *White Box-Yellow Box-Blakely's Red Gum Woodland EEC* under the BC Act and *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC* under the EPBC Act.
2. Under the FBA offsetting option rules PCT 1660 can be used to offset impacts on PCT 1629 *Narrow-leaved Stringybark – Grey Gum shrubby open forest on sandstone ridges of the Sydney Basin*.
3. Under the FBA offsetting option rules PCT 479 can be used to offset impacts on PCT 1661 *Narrow-leaved Ironbark - Black Pine - Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin.*
4. Under the FBA offsetting option rules PCT 1176 can be used to offset impacts on PCT 1669 *Red Ironbark - Grey Gum - Narrow-leaved Stringybark - Brown Bloodwood shrubby open forest on sandstone ranges of the Sydney Basin.*

Note: The credits in Table 12A have been calculated in accordance with Framework for Biodiversity Assessment of the NSW Biodiversity Offset Policy for Major Projects (OEH, 2014) and may need to be converted to reasonably equivalent 'biodiversity credits', within the meaning of the BC Act, if the credits are to be retired in accordance with the Biodiversity Offsets Scheme of the BC Act."

25. After condition 35 of Schedule 3, insert the following conditions:

"35A. By 30 September 2021, the Proponent shall make an application to secure the credits associated with the areas of the Gilgal property identified in Table 12A under a Biodiversity Stewardship Agreement, unless otherwise agreed by the Secretary.

Rehabilitation Offsets

35B Within 12 months of the commencement of activities under MOD 14, unless otherwise agreed by the Secretary, the proponent must, in consultation with OEH, the Department and DoEE and to the satisfaction of the Secretary, develop suitable rehabilitation performance and completion criteria for the vegetation communities to be established in the rehabilitated OC2 and/or OC3 landforms to generate the residual ecosystem and species credits for Koala listed in Table 12A.

The performance and completion criteria must include consideration of the effect of climatic conditions, such as drought, the *NSW Biodiversity Offsets Policy for Major Projects 2014* and the associated *Fact sheet: Mine Site Rehabilitation (OEH, 2014).*

Notes:
- *The rehabilitation offset performance and completion criteria form a component of the Rehabilitation Management Plan required under condition 69 of this schedule.*
- *The indicative final rehabilitation areas are shown in Figure 8.2 of Appendix 8.*

35C If at the end of 10 years after landform establishment in OC2 and/or OC3, unless otherwise agreed by the Secretary, the rehabilitation does not meet the performance and completion criteria in condition 35B to the satisfaction of the Secretary, the Proponent must retire the relevant number of residual credits listed in Table 12A under other mechanisms provided by the Biodiversity Offsets Scheme of the BC Act, to the satisfaction of the Secretary.

Notes:
- *Landform establishment is a recognised stage of rehabilitation when the final land shape has been developed prior to growth medium development and ecosystem development.*
- *As landform establishment stage will progressively occur across the mine site, the performance criteria for new areas progressing into the landform establishment stage will need to be assessed by the Secretary on a regular basis, for example every 3 years, to determine whether the requirements of the condition are being met.*
- *In accordance with the NSW Biodiversity Offsets Policy for Major Projects, additional biodiversity credits can be generated for the ongoing management of the rehabilitation area to ensure its biodiversity values are continually improved. Any additional credits could be secured through a Biobanking Agreement and used to offset future developments.*

35D Notwithstanding the requirements in conditions 35B and 35C, the Proponent may retire the residual credits listed in Table 12A earlier than the specified timeframe in condition 35C by other mechanisms under the BC Act in place of rehabilitation, to the satisfaction of the Secretary."

26. In conditions 36(b), 36(c) 36(f) and 37 (including the Note to condition 37) of Schedule 3, after each reference to "biodiversity offset strategy", insert "described in Table 12".

27. In condition 36(d), after "managing salinity;", insert

- "avoiding and mitigating the spread of Phytophthora cinnamomi (*P.cinnamomi*) with consideration of actions identified in the relevant threat abatement plan;"

28. In condition 37 of Schedule 3, delete "30 June 2015", and replace with "30 September 2021".

29. In condition 68(d) of Schedule 3, delete "strategy", and replace with "strategies in Table 12 and Table 12A"

30. Delete condition 70 of Schedule 3.

31. In condition 76 of Schedule 3, delete "Secretary Industry", and replace with "DRG".

32. In Appendix 1, delete the land schedule table and replace with the following table:

Lot and Deposited Plan Number	Tenure Type
Lot 1 DP115031	Freehold
Pt Lot 1 DP803204	Freehold
Lot 1 DP817487	Freehold
Pt Lot 102 DP755442	Freehold
Lot 107 DP755442	Freehold
Lot 108 DP755442	Freehold
Lot 109 DP755442	Freehold
Pt Lot 11 DP1152406	Freehold
Lot 110 DP755442	Freehold
Pt Lot 112 DP755454	Freehold
Pt Lot 113 DP755454	Freehold
Lot 119 DP755442	Freehold
Pt Lot 140 DP755442	Freehold
Lot 145 DP755442	Freehold
Lot 146 DP755442	Freehold
Pt Lot 157 DP755442	Freehold
Lot 16 DP755442	Freehold
Pt Lot 167 DP755442	Freehold
Lot 17 DP755442	Freehold
Pt Lot 170 DP755442	Freehold
Pt Lot 172 DP755442	Freehold
Lot 18 DP755442	Freehold
Pt Lot 183 DP755442	Freehold
Lot 19 DP755442	Freehold
Pt Lot 192 DP755442	Freehold
Pt Lot 193 DP755442	Freehold
Lot 2 DP115031	Freehold

Lot and Deposited Plan Number	Tenure Type
Pt Lot 2 DP878678	Freehold
Pt Lot 205 DP755442	Freehold
Pt Lot 218 DP755442	Freehold
Lot 223 DP755442	Freehold
Pt Lot 228 DP755442	Freehold
Pt Lot 229 DP755442	Freehold
Lot 234 DP755442	Freehold
Pt Lot 238 DP755442	Freehold
Lot 248 DP755442	Freehold
Pt Lot 260 DP755442	Freehold
Pt Lot 261 DP755442	Freehold
Pt Lot 262 DP755442	Freehold
Pt Lot 289 DP704098	Freehold
Pt Lot 3 DP878678	Freehold
Pt Lot 37 DP755442	Freehold
Lot 40 DP755442	Freehold
Lot 44 DP755442	Freehold
Lot 45 DP755442	Freehold
Lot 50 DP755442	Freehold
Lot 51 DP755442	Freehold
Lot 52 DP755442	Freehold
Lot 53 DP755442	Freehold
Pt Lot 6 DP115031	Freehold
Pt Lot 6 DP878678	Freehold
Pt Lot 60 DP755442	Freehold
Pt Lot 61 DP755442	Freehold
Pt Lot 62 DP755442	Freehold
Lot 63 DP755442	Freehold
Lot 64 DP755442	Freehold
Pt Lot 7 DP878678	Freehold
Lot 89 DP755442	Freehold
Pt Lot 93 DP755442	Freehold
Pt Lot 93 DP755454	Freehold
Pt Lot 95 DP755442	Freehold
Pt Lot 96 DP755454	Freehold
Pt Lot 97 DP755454	Freehold
Lot 98 DP755442	Freehold
Lot 99 DP755442	Freehold
Pt Lot 65 DP755442	Freehold
Pt Lot 208 DP755442	Freehold
Pt Lot 4 DP575167	Freehold
Pt Lot 88 DP755442	Freehold
Lot 152 DP755442	Crown

Lot and Deposited Plan Number	Tenure Type
Lot 290 DP704098	Crown
Pt Lot 125 DP755442	Freehold
Pt Lot 91 DP755442	Freehold
Lot 242 DP755442	Freehold
Pt Lot 7009 DP1025321	Crown
Pt Lot 204 DP755442	Crown
Lot 176 DP755442	Crown
Lot 7010 DP1025345	Crown
Pt Lot 92 DP755442	Freehold
Lot 277 DP755442	Freehold
Pt Lot 253 DP755442	Freehold
Lot 272 DP755442	Freehold
Pt Lot 1 DP1089166	Freehold
Pt Lot 1 DP1099037	Freehold
Lot 179 DP755442	Freehold
Lot 1 DP722881	Freehold
Lot 55 DP722794	Crown
Lot 20 DP755439	Freehold
Lot 33 DP755439	Crown
Lot 178 DP755442	Freehold
Pt Lot 1 DP720332	Freehold
Lot 2 DP722882	Freehold
Lot 56 DP722795	Crown
Pt Lot 75 DP750773	Freehold
Lot 45 DP736630	Freehold
Lot 3 DP722882	Freehold
Lot 7005 DP1096180	Crown
Lot 34 DP755439	Crown
Lot 7004 DP1116207	Crown
Pt Lot 7303 DP1143562	Crown
Lot 7302 DP1143562	Crown
Pt Lot 13 DP1152406	Freehold
Lot 17 DP1140073	Freehold
Lot 16 DP1140073	Freehold
Lot 18 DP1140073	Freehold
Lot 20 DP1140073	Freehold
Lot 1 DP1214133	Freehold
Pt Lot 3 DP1214133	Freehold
Pt Lot 5 DP1240416	Freehold
Pt Lot 31 DP755439	Crown
Pt Lot 44 DP736630	Freehold
Pt Lot 43 DP736630	Crown
Pt Lot 1 DP1246895	Freehold

Lot and Deposited Plan Number	Tenure Type
Pt Lot 2 DP1246895	Freehold
Other Land	
Roads located between or adjacent to the above parcels of land	Council and Crown
Creeks or streams located between or adjacent to the above parcels of land	Crown
Sandy Hollow – Gulgong Railway	State Rail Authority

33. In Appendix 2, delete Figure 2.1 and Figure 2.2, and replace with the following:

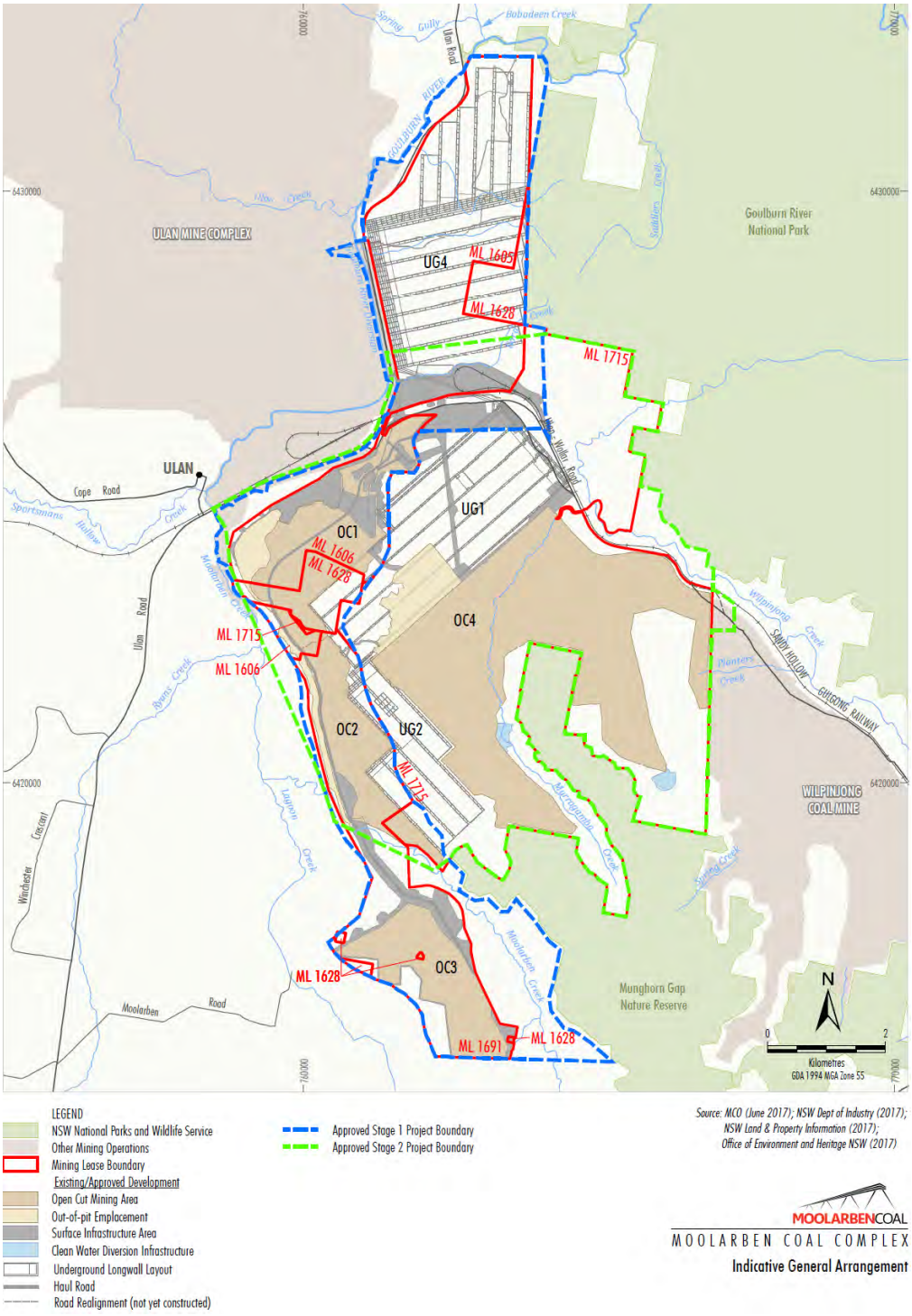


Figure 2.1 – General Project Arrangement

34. In Appendix 5, delete Figure 5.1 and Table 5.1 and replace with the following figure and table:

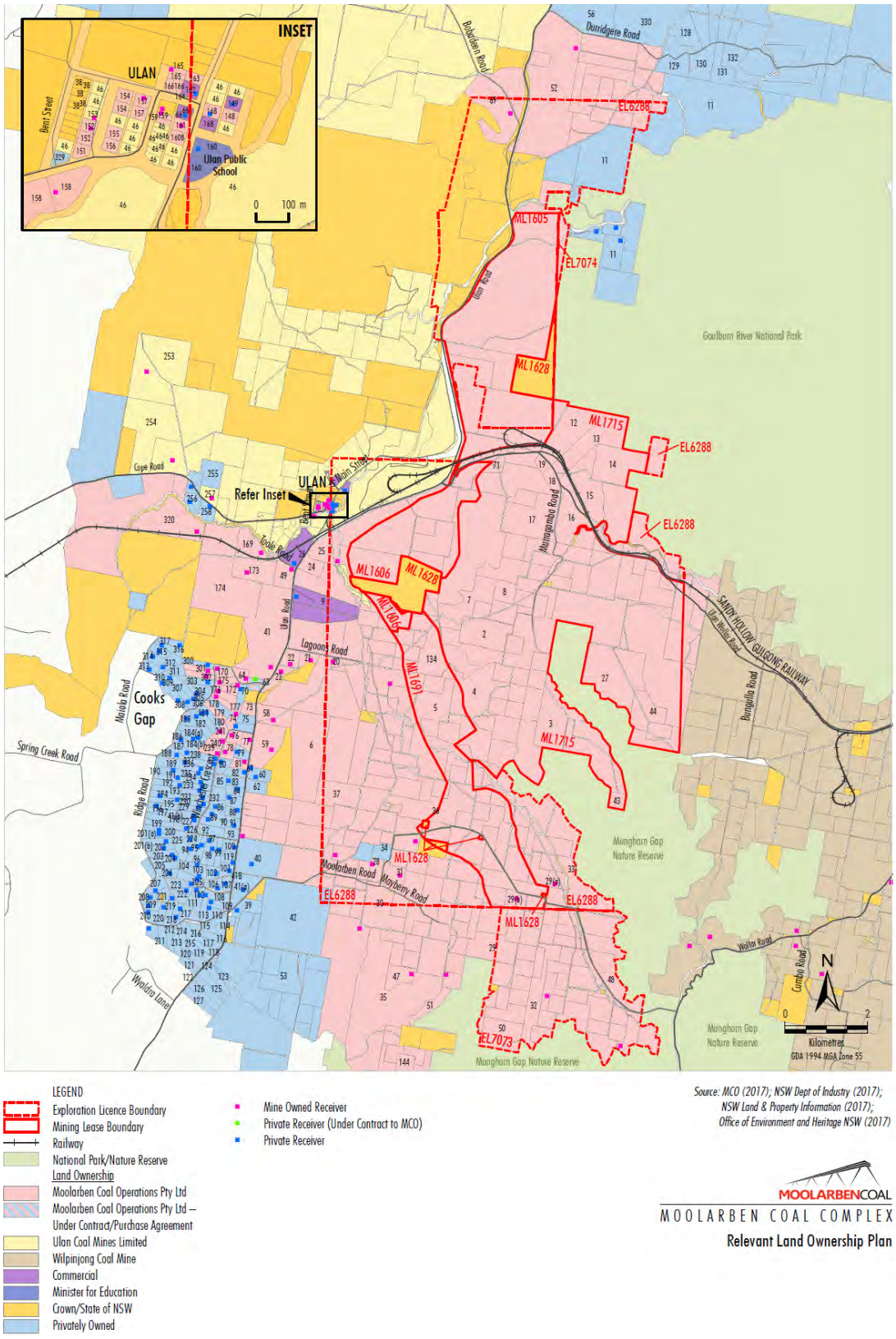


Figure 5.1 Relevant Land Ownership

Ref No	Landholder
1-8	Moolarben Coal Operations Pty Ltd
9	Orica Australia Pty Limited
10	Moolarben Coal Operations Pty Ltd
11	JE Mullins & CD Imrie
12-25	Moolarben Coal Operations Pty Ltd
26	Forty North Pty Limited
27-33	Moolarben Coal Operations Pty Ltd
34	T Rheinberger
35-37	Moolarben Coal Operations Pty Ltd
38	The State of New South Wales
39	RM & DJ Sprigg
40	JM Devenish
41	Moolarben Coal Operations Pty Ltd
41(a&b)	PP Libertis
42	C & L Schmidt
43-44	Moolarben Coal Operations Pty Ltd
45	Advance Energy
46	Ulan Coal Mines Limited
46(b)	North-Eastern Wiradjuri Wilpinjong Community Fund Limited
47-52	Moolarben Coal Operations Pty Ltd
53	WD & MS Bryant
54	MA & C Harris
56	V Cundy
58-59	Moolarben Coal Operations Pty Ltd
60	CL Rayner & DM Mundey
61	MA Miller
62	R Menchin
63	BF & B Whiticker
64	Moolarben Coal Operations Pty Ltd
66	Rostheme Pty Limited
69	Moolarben Coal Operations Pty Ltd
70	DJ & A Coventry
71	Moolarben Coal Operations Pty Ltd
73-74	Moolarben Coal Operations Pty Ltd
75	P Ban
76-78	Moolarben Coal Operations Pty Ltd
79	PTJ & SE Nagle
80	W & D Sebelic
81	Moolarben Coal Operations Pty Ltd
82	SC Hungerford & MC Clemens
83	DS Sebelic
85	J & Z Nikolovski
86	NW Harris
87	BJ & K Howe
88	BC Meyers
89	MV & HM Glover & E & BJ Tomlinson
90	SA Powell
91	HM Graham
92	VA Pullicino & J, S & G Bonnici
93	F & M Fenech
94	LK Mittemayer
95	BJ Withington
96	D Lazicic
97	DJ & MD Smith
98	ME & JJ Piper
99	DE Jenner & WB Jensen
100	W Ellem
101	RD & DMZ Hull
101(a)	PJ Kearns
102	KA Roberts
103	SB Burnett & SL Grant
104	RA & LA Deeben
105	DJ & N Katsikaris
106	TB & JH Reid
107	ZJ & M & AA Raso
108	R Varga
109	DA Evans
110	JT Thompson & HT Evans
111	GJ & NJ McEwan
112	MJ & LM Croft
113	CPG Ratcliff
114	TF & K Holland
115	PR McLean
116	DJ & SM Reid
117	JM Dick
118	A Scott
119	PJ Kearns
120	PS & DR Ord
121	EJ Cullen
122	WF Wirth
123	G Tuck-Lee & Symons
124	WJ & HE Bailey
125	DB McBride
126	MP Julian
127	BKT & SA Bracken
128	AW Sims
129	M Yelds
130	GP McEwen
131	GR & RA King
132	N Atkins
134	Moolarben Coal Operations Pty Ltd
144	Moolarben Coal Operations Pty Ltd
148	Moolarben Coal Operations Pty Ltd
149	Mid-Western Regional Council
151-152	Moolarben Coal Operations Pty Ltd
153	Ulan Coal Mine Limited
154-159	Moolarben Coal Operations Pty Ltd
160	Minister For Education And Training
160(b)	Moolarben Coal Operations Pty Ltd
161	Moolarben Coal Operations Pty Ltd
162	Rowmint Pty Limited
163-166	Moolarben Coal Operations Pty Ltd
168	PJL Constructions Pty Limited
169-170	Moolarben Coal Operations Pty Ltd
171	AD & SA McGregor
172-177	Moolarben Coal Operations Pty Ltd
178	PR Stone
180	CD & LL Barrett
181	SM Forster
182	J Dutoitcook
183	R & EA Steines
184(a&b)	LA Stevenson
186	RW & IJ Adamson
187	BT & KM Feeney
188	KR & T Fielding
189	GA Fay
190	T & LK Sahyoun
191	BW & TS Lasham
192	D Williams
193	DJ Moloney
194	PM & K Potts
195	R Cottam
196	F Saxberg & M Weir
197	PGG & I Neilsen
198	GR & ME Metcalfe
199	PGG & I Nielsen
200	VK Grimshaw
201	KR & GM Towerton
202	H & VF Butler
203	DJ Miller
204	RB & JE Donnan
205	DW Sparrow & M Tallan
206	CA Marshall & R Vella
207	AA & DM Smith
208	SA & CR Hasaart
209	F Mawson
210	JM & AM Tebutt
211	SA McGregor & WJ Gray
212	E & M Lepik
213	D & J Parsonage
214	RK & EG O'Neil
215	SG & PM Green
216	G Holland & FA Handicott
217	GF & GEL Soady
219	T & S Riger
220	SJ Rusten & NJ Smith
221	The State of New South Wales
222	BJ Purtell
223	EW Palmer & JM Stewart
224	RS & PCC Dupond
225	G & RF Doualetas
226	LAA & FC Muscat
227	WP & JA Hughes
229	JJ & BA Lowe
230	DA Hoole & DT Rawlinson
231	T Morrison & SM Benny
232	L & JA Haaring
233	K & D Boal
234	D & L Gaw
235	LM & RS Wilson
236	RG & CA Donovan
237	B & S Stokes
238	B Powell
239-241	Moolarben Coal Operations Pty Ltd
244	JT & YR Jones
245	MP & KLE Cresham
247	J & K Batshon
248	G Boustani
249	CJ & JI Eldridge
251	NF Potter & CE Selley
253-254	Ulan Coal Limited
255	HJ & H Schmitz
256	RC Campbell
258	PM & CD Elias
300	CM Collins & CY Marshall
301-302	Moolarben Coal Operations Pty Ltd
303	HJ Ungaro
304	G Balajan
305	L Barisic & M Aul
306	E Armstrong
307	M Chant & NK Young
308	NA Dower
309	GS Maher
310	KI Death
311	BJ & LC Williamson
312	MS & JJ Ioannou
313	NJ & BDE Pracy
314	SL Ford
315	WJ Richards & BJ Uzelac
316	CR Vassel & CM Williams
317	RJ Hore & V Bingham
320	Moolarben Coal Operations Pty Ltd
325	S & T Fevale
326	AW & LM Murray
327	CA Tanner
328	Essential Energy
329	G Tuck-Lee
330	Nwiran Pty Limited

Table 5.1: Landowners

35. In Appendix 8, delete Figure 8.1 and Figure 8.2, and replace with the following figure:

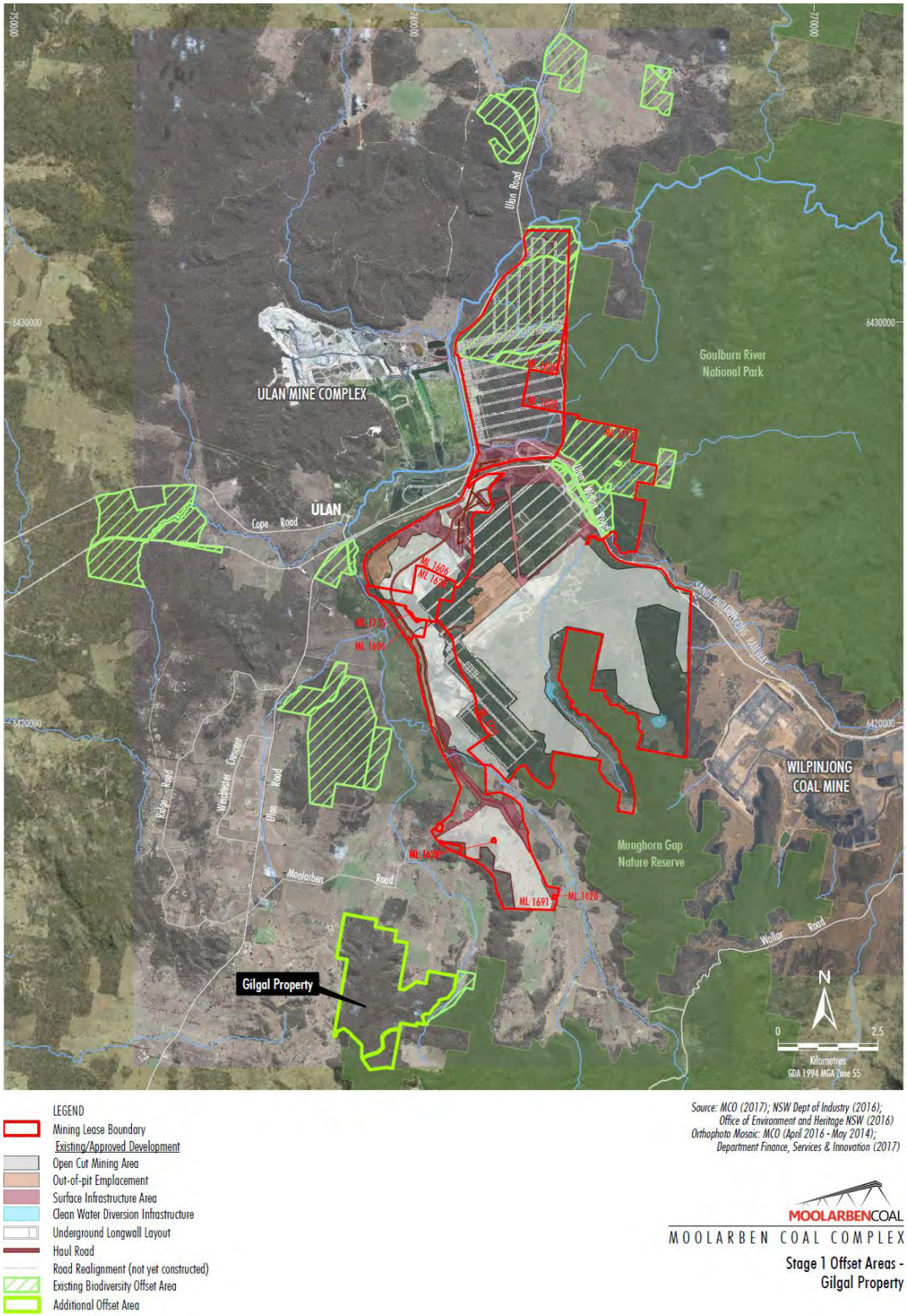
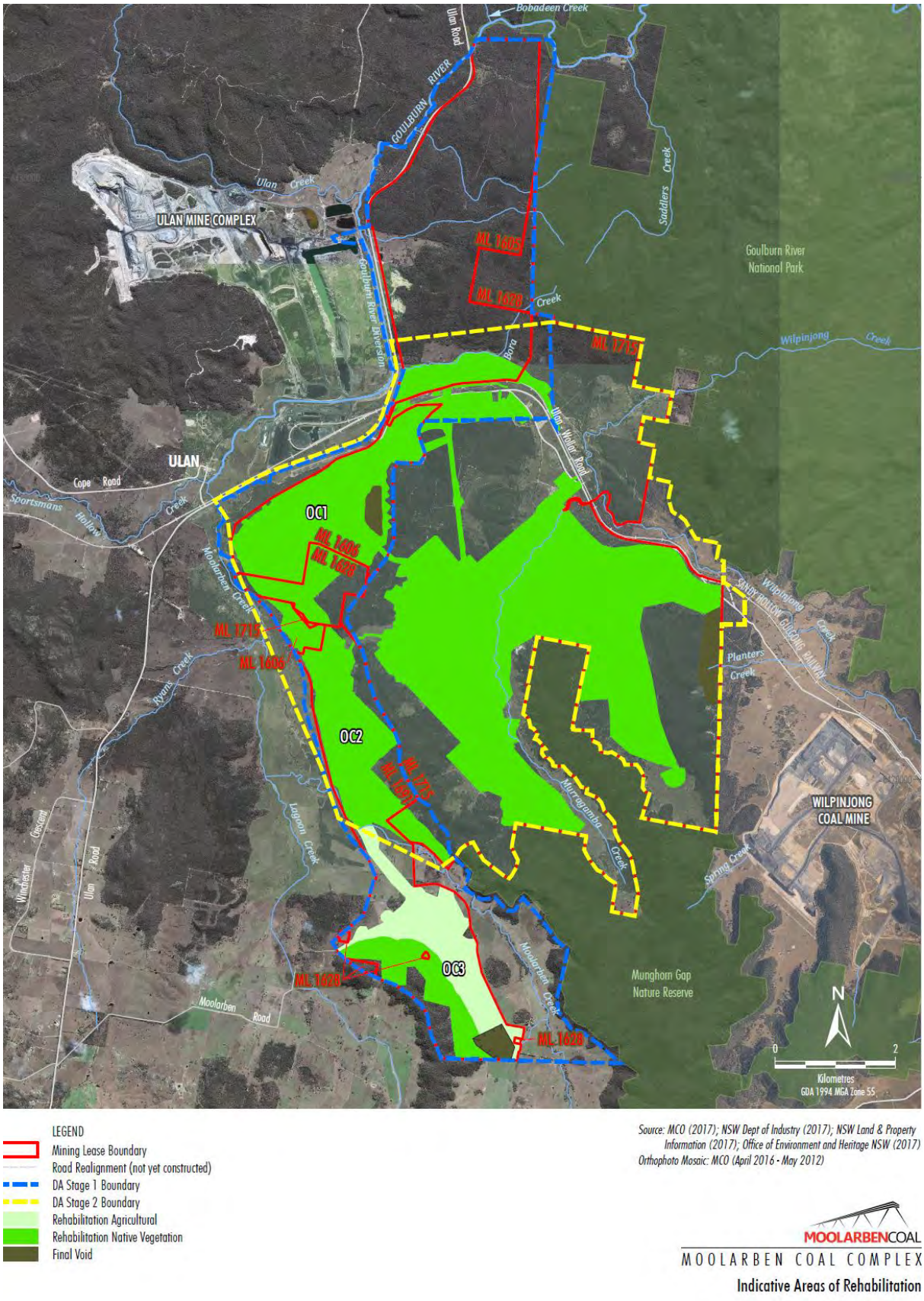


Figure 8.1 Biodiversity Offset Areas (see Tables 12 and 12A)



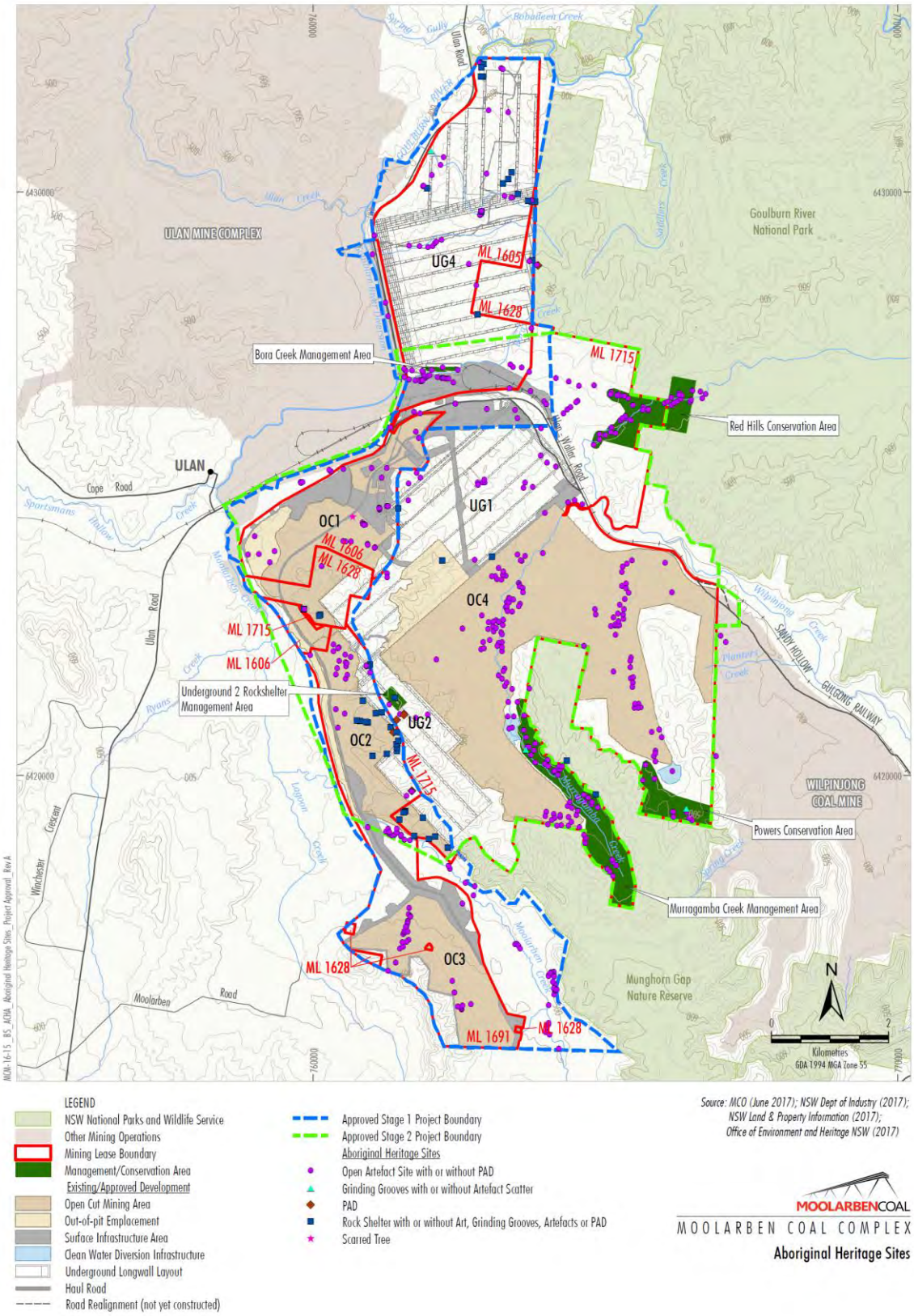
LEGEND
- Mining Lease Boundary
- Road Realignment (not yet constructed)
- DA Stage 1 Boundary
- DA Stage 2 Boundary
- Rehabilitation Agricultural
- Rehabilitation Native Vegetation
- Final Void

Source: MCO (2017); NSW Dept of Industry (2017); NSW Land & Property Information (2017); Office of Environment and Heritage NSW (2017) Orthophoto Mosaic: MCO (April 2016 - May 2012)

MOOLARBENCOAL
MOOLARBEN COAL COMPLEX
Indicative Areas of Rehabilitation

Figure 8.2: Indicative Rehabilitation Areas

36. In Appendix 9, delete Figure 9.1 and Table 9.1 and replace with the following Figure and Table:



9.1 Aboriginal Cultural Heritage sites

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0691	CE-15-IF	Isolated Find	36-3-2621	S1MC339	Rock shelter with PAD
36-3-0237	MC11	Open Artefact Site	36-3-2622	S1MC340	Rock shelter with PAD
36-3-0223	MC2	Open Artefact Site	36-3-2623	S1MC341	Rock shelter with PAD
36-3-0241	MC4	Open Artefact Site	36-3-2624	S1MC342	Rock shelter with PAD
36-3-0240	MC6	Artefact Scatter	36-3-2625	S1MC343	Rock shelter with PAD
36-3-0337	MC7	Open Artefact Site	36-3-2626	S1MC344	Rock shelter with artefacts
36-3-0239	MC8	Open Artefact Site	36-3-2627	S1MC345	Rock shelter with PAD
36-3-0222	Moolarben Creek MC1	Artefact Scatter	36-3-2628	S1MC346	Rock shelter with PAD
36-3-3144	MUG1-Mod 1	Isolated Find	36-3-2629	S1MC347	Rock shelter with PAD
36-3-0837	PAD 1 Moolarben Coal	Rock Shelter and PAD	36-3-2630	S1MC348	Rock shelter with PAD
36-3-0956	PAD 10 Moolarben Coal	PAD	36-3-2631	S1MC349	Rock shelter with PAD
36-3-0957	PAD 11 Moolarben Coal	PAD	36-3-2632	S1MC350	Rock shelter with PAD
36-3-0958	PAD 12 Moolarben Coal	PAD and Rockshelter	36-3-2633	S1MC351	Rock shelter with PAD
36-3-0838	PAD 2 Moolarben Coal	Artefact Scatter and PAD	36-3-2634	S1MC352	Rock shelter with PAD
36-3-0839	PAD 3 Moolarben Coal	Artefact Scatter and PAD	36-3-2635	S1MC353	Rock shelter with PAD
36-3-0883	PAD 4 Moolarben Coal	PAD	36-3-2636	S1MC354	Rock shelter with PAD
36-3-0884	PAD 5 Moolarben Coal	PAD	36-3-2660	S1MC355	Artefact Scatter
36-3-0885	PAD 6 Moolarben Coal	PAD	36-3-2661	S1MC356	Isolated Find
36-3-0113	PAD 7 Moolarben Coal	PAD	36-3-2662	S1MC357	Artefact Scatter
36-3-0954	PAD 8 Moolarben Coal	Artefact Scatter and PAD	36-3-1150	S2MC001	Isolated Find
36-3-0955	PAD 9 Moolarben Coal	PAD	36-3-1151	S2MC002	Isolated Find
36-3-0798	S1MC001	Scarred Tree	36-3-1152	S2MC003	Artefact Scatter
36-3-0799	S1MC002	Artefact Scatter	36-3-1153	S2MC004	Isolated Find
36-3-0800	S1MC003	Isolated Find	36-3-1154	S2MC005	Artefact Scatter
36-3-0801	S1MC004	Isolated Find	36-3-1155	S2MC006	Artefact Scatter
36-3-0802	S1MC005	Artefact Scatter	36-3-1156	S2MC007	Isolated Find
36-3-0803	S1MC006	Isolated Find	36-3-1157	S2MC008	Isolated Find
36-3-0804	S1MC007	Isolated Find	36-3-1158	S2MC009	Isolated Find
36-3-0805	S1MC008	Isolated Find	36-3-1159	S2MC010	Artefact Scatter
36-3-0806	S1MC009	Isolated Find	36-3-1160	S2MC011	Isolated Find
36-3-0807	S1MC010	Isolated Find	36-3-1161	S2MC012	Isolated Find
36-3-0808	S1MC011	Artefact Scatter	36-3-1162	S2MC013	Isolated Find
36-3-0809	S1MC012	Isolated Find	36-3-1163	S2MC014	Artefact Scatter
36-3-0810	S1MC013	Isolated Find	36-3-1164	S2MC015	Artefact Scatter
36-3-0811	S1MC014	Isolated Find	36-3-1165	S2MC016	Artefact Scatter
36-3-0812	S1MC015	Isolated Find	36-3-1166	S2MC017	Artefact Scatter
36-3-0813	S1MC016	Isolated Find	36-3-1167	S2MC018	Artefact Scatter and PAD
36-3-0814	S1MC017	Isolated Find	36-3-1168	S2MC019	Isolated Find
36-3-0815	S1MC018	Isolated Find	36-3-1169	S2MC020	Artefact Scatter
36-3-0816	S1MC019	Isolated Find	36-3-1170	S2MC021	Isolated Find
36-3-0817	S1MC020	Isolated Find	36-3-1171	S2MC022	Artefact Scatter
36-3-0818	S1MC021	Isolated Find	36-3-1172	S2MC023	Isolated Find
36-3-0819	S1MC022	Isolated Find	36-3-1173	S2MC024	Isolated Find
36-3-0820	S1MC023	Isolated Find	36-3-1174	S2MC025	Isolated Find
36-3-0821	S1MC024	Isolated Find	36-3-0238	S2MC028, MC10	Open Artefact Site
36-3-0822	S1MC025	Isolated Find	36-3-1175	S2MC029	Artefact Scatter
36-3-0823	S1MC026	Isolated Find	36-3-1176	S2MC030	Artefact Scatter
36-3-0824	S1MC027	Isolated Find	36-3-1177	S2MC031	Isolated Find

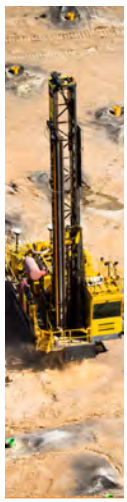
AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0825	S1MC028	Isolated Find	36-3-1178	S2MC032	Artefact Scatter
36-3-0826	S1MC029	Isolated Find	36-3-1179	S2MC033	Artefact Scatter
36-3-0827	S1MC030	Isolated Find	36-3-1180	S2MC034	Isolated Find
36-3-0828	S1MC031	Isolated Find	36-3-1181	S2MC035	Isolated Find
36-3-0829	S1MC032	Isolated Find	36-3-1182	S2MC036	Isolated Find
36-3-0830	S1MC033	Isolated Find	36-3-1183	S2MC037	Isolated Find
36-3-0831	S1MC034	Isolated Find	36-3-1184	S2MC038	Artefact Scatter
36-3-0832	S1MC035	Isolated Find	36-3-1185	S2MC039	Artefact Scatter
36-3-0833	S1MC036	Isolated Find	36-3-1186	S2MC040	Artefact Scatter
36-3-0834	S1MC037	Isolated Find	36-3-1186b	S2MC041	Isolated Find
36-3-0835	S1MC038	Isolated Find	36-3-1187	S2MC042	Artefact Scatter
36-3-0836	S1MC039	Isolated Find	36-3-1188	S2MC043	Artefact Scatter
36-3-0845	S1MC040	Artefact Scatter	36-3-1189	S2MC044	Artefact Scatter
36-3-0846	S1MC041	Isolated Find	36-3-1190	S2MC045	Artefact Scatter
36-3-0847	S1MC042	Isolated Find	36-3-1191	S2MC046	Artefact Scatter
36-3-0848	S1MC043	Artefact Scatter	36-3-1192	S2MC047	Artefact Scatter
36-3-0849	S1MC044	Isolated Find	36-3-1193	S2MC048	Artefact Scatter
36-3-0850	S1MC045	Isolated Find	36-3-1194	S2MC049	Isolated Find
36-3-0851	S1MC046	Isolated Find	36-3-1195	S2MC050	Artefact Scatter
36-3-0852	S1MC047	Isolated Find	36-3-1196	S2MC051	Artefact Scatter
36-3-0853	S1MC048	Isolated Find	36-3-1197	S2MC052	Isolated Find
36-3-0854	S1MC049	Isolated Find	36-3-1198	S2MC053	Artefact Scatter
36-3-0855	S1MC050	Isolated Find	36-3-1199	S2MC054	Artefact Scatter
36-3-0856	S1MC051	Isolated Find	36-3-1200	S2MC055	Artefact Scatter
36-3-0857	S1MC052	Isolated Find	36-3-1201	S2MC056	Artefact Scatter
36-3-0858	S1MC053	Artefact Scatter	36-3-1202	S2MC057	Artefact Scatter
36-3-0859	S1MC054	Artefact Scatter	36-3-1203	S2MC058	Artefact Scatter
36-3-0860	S1MC055	Rock Shelter with Artefacts	36-3-1204	S2MC059	Artefact Scatter
36-3-0861	S1MC056	Rock Shelter with Artefacts	36-3-1206	S2MC059b	Isolated Find
36-3-0862	S1MC057	Artefact Scatter	36-3-1207	S2MC060	Isolated Find
36-3-0863	S1MC058	Artefact Scatter	36-3-1208	S2MC061	Artefact Scatter
36-3-0864	S1MC059	Artefact Scatter	36-3-1209	S2MC062	Artefact Scatter
36-3-0865	S1MC060	Artefact Scatter	36-3-1210	S2MC063	Artefact Scatter
36-3-0866	S1MC061	Isolated Find	36-3-1211	S2MC064	Artefact Scatter
36-3-0867	S1MC062	Isolated Find	36-3-1212	S2MC065	Artefact Scatter
36-3-0868	S1MC063	Isolated Find	36-3-1213	S2MC066	Isolated Find
36-3-0869	S1MC064	Isolated Find	36-3-1214	S2MC067	Artefact Scatter
36-3-0870	S1MC065	Isolated Find	36-3-1215	S2MC068	Isolated Find
36-3-0871	S1MC066	Artefact Scatter	36-3-1216	S2MC069	Isolated Find
36-3-0872	S1MC067	Artefact Scatter	36-3-1217	S2MC070	Artefact Scatter
36-3-0873	S1MC068	Isolated Find	36-3-1218	S2MC071	Artefact Scatter
36-3-0874	S1MC069	Isolated Find	36-3-1219	S2MC072	Artefact Scatter
36-3-0875	S1MC070	Isolated Find	36-3-1220	S2MC073	Isolated Find
36-3-0876	S1MC071	Isolated Find	36-3-2581	S2MC074	Artefact Scatter
36-3-0877	S1MC072	Isolated Find	36-3-1221	S2MC075	Isolated Find
36-3-0878	S1MC073	Isolated Find	36-3-1222	S2MC076	Artefact Scatter
36-3-0879	S1MC074	Isolated Find	36-3-1223	S2MC077	Artefact Scatter
36-3-0880	S1MC075	Isolated Find	36-3-1224	S2MC078	Artefact Scatter
36-3-0881	S1MC076	Isolated Find	36-3-1225	S2MC079	Isolated Find
36-3-0882	S1MC077	Isolated Find	36-3-1226	S2MC080	Artefact Scatter
36-3-0886	S1MC078	Artefact Scatter	36-3-1227	S2MC081	Artefact Scatter
36-3-0887	S1MC079	Isolated Find	36-3-1228	S2MC082	Artefact Scatter
36-3-0888	S1MC080	Isolated Find	36-3-1229	S2MC083	Isolated Find
36-3-0889	S1MC081	Isolated Find	36-3-1230	S2MC084	Isolated Find
36-3-0890	S1MC082	Isolated Find	36-3-1231	S2MC085	Isolated Find
36-3-0891	S1MC083	Isolated Find	36-3-1232	S2MC086	Artefact Scatter
36-3-0892	S1MC084	Artefact Scatter	36-3-1233	S2MC087	Artefact Scatter
36-3-0893	S1MC085	Isolated Find	36-3-1234	S2MC088	Artefact Scatter
36-3-0894	S1MC086	Isolated Find	36-3-1235	S2MC089	Artefact Scatter
36-3-0895	S1MC087	Isolated Find	36-3-1236	S2MC090	Isolated Find

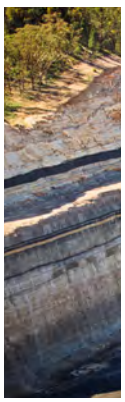
AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0896	S1MC088	Isolated Find	36-3-1237	S2MC091	Isolated Find
36-3-0897	S1MC089	Isolated Find	36-3-1238	S2MC092	Isolated Find
36-3-0898	S1MC090	Isolated Find	36-3-1239	S2MC093	Artefact Scatter
36-3-0899	S1MC091	Isolated Find	36-3-1240	S2MC094	Isolated Find
36-3-0900	S1MC092	Isolated Find	36-3-1241	S2MC095	Isolated Find
36-3-0901	S1MC093	Isolated Find	36-3-1242	S2MC096	Artefact Scatter
36-3-0902	S1MC094	Artefact Scatter	36-3-1243	S2MC097	Artefact Scatter
36-3-0903	S1MC095	Isolated Find	36-3-1244	S2MC098	Isolated Find
36-3-0904	S1MC096	Isolated Find	36-3-1245	S2MC099	Isolated Find
36-3-0905	S1MC097	Isolated Find	36-3-1246	S2MC100	Artefact Scatter
36-3-0906	S1MC098	Isolated Find	36-3-1247	S2MC101	Artefact Scatter
36-3-0907	S1MC099	Isolated Find	36-3-1248	S2MC102	Isolated Find
36-3-0908	S1MC100	Isolated Find	36-3-1249	S2MC103	Isolated Find
36-3-0909	S1MC101	Isolated Find	36-3-1250	S2MC104	Artefact Scatter
36-3-0910	S1MC102	Artefact Scatter	36-3-1251	S2MC105	Isolated Find
36-3-0912	S1MC103	Artefact Scatter	36-3-1252	S2MC106	Isolated Find
36-3-0911	S1MC103a	Artefact Scatter	36-3-1253	S2MC107	Isolated Find
36-3-0913	S1MC104	Artefact Scatter	36-3-1254	S2MC108	Artefact Scatter
36-3-0914	S1MC105	Isolated Find	36-3-1255	S2MC109	Artefact Scatter
36-3-0915	S1MC106	Isolated Find	36-3-1256	S2MC110	Isolated Find
36-3-0916	S1MC107	Isolated Find	36-3-1257	S2MC111	Artefact Scatter
36-3-0917	S1MC108	Isolated Find	36-3-1258	S2MC112	Artefact Scatter
36-3-0918	S1MC109	Isolated Find	36-3-1259	S2MC113	Isolated Find
36-3-0919	S1MC110	Isolated Find	36-3-1260	S2MC114	Artefact Scatter
36-3-0920	S1MC111	Isolated Find	36-3-1261	S2MC115	Isolated Find
36-3-0921	S1MC112	Isolated Find	36-3-1262	S2MC116	Artefact Scatter
36-3-0922	S1MC113	Isolated Find	36-3-1263	S2MC117	Isolated Find
36-3-0923	S1MC114	Isolated Find	36-3-1264	S2MC118	Isolated Find
36-3-0924	S1MC115	Isolated Find	36-3-1265	S2MC119	Artefact Scatter
36-3-0925	S1MC116	Isolated Find	36-3-1266	S2MC120	Isolated Find
36-3-0926	S1MC117	Isolated Find	36-3-1267	S2MC121	Isolated Find
36-3-0927	S1MC118	Isolated Find	36-3-1268	S2MC122	Artefact Scatter
36-3-0928	S1MC119	Isolated Find	36-3-1269	S2MC123	Artefact Scatter
36-3-0929	S1MC120	Isolated Find	36-3-1270	S2MC124	Artefact Scatter
36-3-0930	S1MC121	Isolated Find	36-3-1271	S2MC125	Artefact Scatter
36-3-0931	S1MC122	Isolated Find	36-3-1272	S2MC126	Artefact Scatter
36-3-0932	S1MC123	Isolated Find	36-3-1273	S2MC127	Isolated Find
36-3-0933	S1MC124	Isolated Find	36-3-1274	S2MC128	Artefact Scatter
36-3-0934	S1MC125	Isolated Find	36-3-1275	S2MC129	Artefact Scatter
36-3-0935	S1MC126	Isolated Find	36-3-1276	S2MC130	Artefact Scatter
36-3-0936	S1MC127	Isolated Find	36-3-1277	S2MC131	Isolated Find
36-3-0937	S1MC128	Isolated Find	36-3-1278	S2MC132	Artefact Scatter
36-3-0938	S1MC129	Isolated Find	36-3-1279	S2MC133	Artefact Scatter
36-3-0939	S1MC130	Artefact Scatter	36-3-1280	S2MC134	Artefact Scatter
36-3-0940	S1MC131	Isolated Find	36-3-1281	S2MC135	Artefact Scatter
36-3-0941	S1MC132	Artefact Scatter	36-3-1282	S2MC136	Isolated Find
36-3-0942	S1MC133	Artefact Scatter	36-3-1283	S2MC137	Isolated Find
36-3-0943	S1MC134	Isolated Find	36-3-1284	S2MC138	Isolated Find
36-3-0944	S1MC135	Artefact Scatter	36-3-1285	S2MC139	Isolated Find
36-3-0945	S1MC136	Artefact Scatter	36-3-1286	S2MC140	Artefact Scatter
36-3-0946	S1MC137	Isolated Find	36-3-1287	S2MC141	Artefact Scatter
36-3-0947	S1MC138	Isolated Find	36-3-1288	S2MC142	Isolated Find
36-3-0948	S1MC139	Artefact Scatter	36-3-1289	S2MC143	Isolated Find
36-3-0949	S1MC140	Artefact Scatter	36-3-1290	S2MC144	Isolated Find
36-3-0950	S1MC141	Isolated Find	36-3-1291	S2MC145	Artefact Scatter
36-3-0951	S1MC142	Artefact Scatter	36-3-1292	S2MC146	Artefact Scatter
36-3-0952	S1MC143	Artefact Scatter	36-3-1293	S2MC147	Isolated Find
36-3-0953	S1MC144	Isolated Find	36-3-1294	S2MC148	Artefact Scatter
36-3-1029	S1MC213	Isolated Find	36-3-1295	S2MC149	Isolated Find
36-3-1041	S1MC225	Isolated Find	36-3-1296	S2MC150	Artefact Scatter
36-3-1042	S1MC226	Isolated Find	36-3-1297	S2MC151	Grinding Grooves and Artefact Scatter
36-3-1043	S1MC227	Isolated Find	36-3-1298	S2MC152	Artefact Scatter

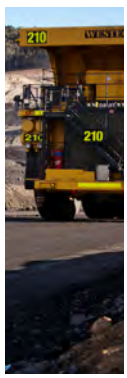
AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-1044	S1MC228	Artefact scatter	36-3-1299	S2MC153	Artefact Scatter
36-3-1045	S1MC229	Isolated Find	36-3-1300	S2MC154	Artefact Scatter
36-3-1046	S1MC230	Artefact Scatter	36-3-1301	S2MC155	Isolated Find
36-3-1047	S1MC231	Isolated Find	36-3-1302	S2MC156	Artefact Scatter
36-3-1048	S1MC232	Isolated Find	36-3-1303	S2MC157	Artefact Scatter
36-3-1049	S1MC233	Artefact Scatter	36-3-1304	S2MC158	Artefact Scatter
36-3-1050	S1MC234	Isolated Find	36-3-1305	S2MC159	Artefact Scatter
36-3-1051	S1MC235	Isolated Find	36-3-1306	S2MC160	Isolated Find
36-3-1052	S1MC236	Artefact Scatter	36-3-1307	S2MC161	Artefact Scatter
36-3-1053	S1MC237	Isolated Find	36-3-1308	S2MC162	Artefact Scatter
36-3-1054	S1MC238	Isolated Find	36-3-1309	S2MC163	Artefact Scatter
36-3-1055	S1MC239	Isolated Find	36-3-1310	S2MC164	Isolated Find
36-3-1056	S1MC240	Artefact Scatter	36-3-1311	S2MC165	Artefact Scatter
36-3-1057	S1MC241	Artefact Scatter	36-3-1312	S2MC166	Isolated Find
36-3-1058	S1MC242	Isolated Find	36-3-1313	S2MC167	Isolated Find
36-3-1059	S1MC243	Isolated Find	36-3-1314	S2MC168	Artefact Scatter
36-3-1060	S1MC244	Artefact Scatter	36-3-1315	S2MC169	Isolated Find
36-3-1113	S1MC244a	Artefact Scatter	36-3-1316	S2MC170	Artefact Scatter
36-3-1061	S1MC245	Isolated Find	36-3-1317	S2MC171	Artefact Scatter
36-3-1062	S1MC246	Isolated Find	36-3-1318	S2MC172	Artefact Scatter
36-3-1063	S1MC247	Isolated Find	36-3-1319	S2MC173	Isolated Find
36-3-1064	S1MC248	Isolated Find	36-3-1320	S2MC174	Isolated Find
36-3-1065	S1MC249	Isolated Find	36-3-1321	S2MC175	Isolated Find
36-3-1066	S1MC250	Isolated Find	36-3-1322	S2MC176	Artefact Scatter
36-3-1067	S1MC252	Isolated Find	36-3-1323	S2MC177	Artefact Scatter
36-3-1068	S1MC253	Isolated Find	36-3-1324	S2MC178	Artefact Scatter
36-3-1069	S1MC254	Artefact Scatter	36-3-1325	S2MC179	Artefact Scatter
36-3-1070	S1MC255	Artefact Scatter and PAD	36-3-1326	S2MC180	Artefact Scatter
36-3-1071	S1MC256	Artefact Scatter	36-3-1327	S2MC181	Artefact Scatter
36-3-1072	S1MC257	Artefact Scatter	36-3-1328	S2MC182	Isolated Find
36-3-1073	S1MC258	Artefact Scatter	36-3-1329	S2MC183	Artefact Scatter
36-3-1074	S1MC259	Isolated Find	36-3-1330	S2MC184	Isolated Find
36-3-1075	S1MC260	Isolated Find	36-3-1331	S2MC185	Isolated Find
36-3-1076	S1MC261	Rock Shelter with Artefacts	36-3-1332	S2MC186	Artefact Scatter
36-3-1077	S1MC262	Isolated Find	36-3-1333	S2MC187	Isolated Find
36-3-1078	S1MC263	Isolated Find	36-3-1334	S2MC188	Artefact Scatter
36-3-1079	S1MC264	Grinding Grooves and Artefact Scatter	36-3-1335	S2MC189	Isolated Find
36-3-1080	S1MC265	Artefact Scatter	36-3-1336	S2MC190	Isolated Find
36-3-1081	S1MC266	Isolated Find	36-3-1337	S2MC191	Artefact Scatter
36-3-1082	S1MC267	Rock Shelter with Artefacts	36-3-1338	S2MC192	Isolated Find
36-3-1083	S1MC268	Isolated Find	36-3-1339	S2MC193	Artefact Scatter
36-3-1084	S1MC269	Isolated Find	36-3-1340	S2MC194	Artefact Scatter
36-3-1085	S1MC270	Isolated Find	36-3-1341	S2MC195	Artefact Scatter
36-3-1086	S1MC271	Rock Shelter with Artefacts	36-3-1342	S2MC196	Artefact Scatter
36-3-1087	S1MC272	Artefact Scatter	36-3-1343	S2MC197	Artefact Scatter
36-3-1088	S1MC273	Isolated Find	36-3-1344	S2MC198	Artefact Scatter
36-3-1089	S1MC274	Isolated Find	36-3-1345	S2MC199	Artefact Scatter
36-3-1090	S1MC275	Isolated Find	36-3-1346	S2MC200	Artefact Scatter
36-3-1091	S1MC276	Isolated Find	36-3-1347, 36-3-1348	S2MC201	Artefact Scatter
36-3-1092	S1MC277	Isolated Find	36-3-1349	S2MC202	Artefact Scatter
36-3-1093	S1MC278	Isolated Find	36-3-1350	S2MC203	Artefact Scatter
36-3-1094	S1MC279	Isolated Find	36-3-1351	S2MC204	Artefact Scatter
36-3-0042	S1MC280; Ulan Creek 2	Rock Shelter with Artefacts and Grinding Grooves	36-3-1352	S2MC205	Artefact Scatter
36-3-1095	S1MC281	Artefact Scatter	36-3-1353	S2MC206	Artefact Scatter
36-3-1096	S1MC282	Artefact Scatter	36-3-1354	S2MC207	Artefact Scatter

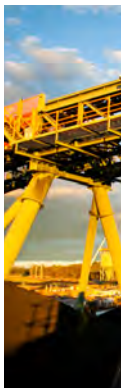
AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
36-3-0098	S1MC283	Rock Shelter with Artefacts	36-3-1355	S2MC208	Artefact Scatter
36-3-1098	S1MC284	Rock Shelter with Artefacts	36-3-1356	S2MC209	Artefact Scatter
36-3-1099	S1MC285	Rock Shelter with Artefacts	36-3-1357	S2MC210	Artefact Scatter
36-3-1100	S1MC286	Rock Shelter with Artefacts	36-3-1358	S2MC211	Isolated Find
36-3-1101	S1MC287	Rock Shelter with Artefacts	36-3-1359	S2MC212	Artefact Scatter
36-3-1102	S1MC288	Rock Shelter with Artefacts	36-3-1360	S2MC213	Isolated Find
36-3-1103	S1MC289	Rock Shelter with Artefacts	36-3-1361	S2MC214	Isolated Find
36-3-1104	S1MC290	Rock Shelter with Artefacts	36-3-1362	S2MC215	Artefact Scatter
36-3-1105	S1MC291	Isolated Find	36-3-1363	S2MC216	Artefact Scatter
36-3-1106	S1MC292	Isolated Find	36-3-1364	S2MC217	Artefact Scatter
36-3-1107	S1MC293	Isolated Find	36-3-1365	S2MC218	Artefact Scatter
36-3-1108	S1MC294	Rock Shelter with Artefacts	36-3-1366	S2MC219	Artefact Scatter
36-3-1109	S1MC295	Isolated Find	36-3-1367	S2MC220	Artefact Scatter
36-3-1110	S1MC296	Rock Shelter with Artefacts	36-3-1368	S2MC221	Isolated Find
36-3-1111	S1MC297	Rock Shelter with Artefacts	36-3-1369	S2MC222	Artefact Scatter
36-3-0840	S1MC298	Artefact Scatter	36-3-1370	S2MC223	Isolated Find
36-3-0841	S1MC299	Isolated Find	36-3-1371	S2MC224	Isolated Find
36-3-0842	S1MC300	Artefact Scatter	36-3-1372	S2MC225	Artefact Scatter
36-3-0843	S1MC301	Artefact Scatter	36-3-1373	S2MC226	Artefact Scatter
36-3-0844	S1MC302	Artefact Scatter	36-3-1374	S2MC227	Artefact Scatter
36-3-1140	S1MC303	Artefact Scatter	36-3-1375	S2MC228	Artefact Scatter
36-3-1141	S1MC304	Artefact Scatter	36-3-1376	S2MC229	Rock Shelter with Artefacts
36-3-1142	S1MC305	Artefact Scatter	36-3-1377	S2MC230	Isolated Find
36-3-1143	S1MC306	Isolated Find	36-3-1378	S2MC231	Rock Shelter with Artefacts
36-3-1144	S1MC307	Isolated Find	36-3-1379	S2MC232	Rock Shelter with Artefacts
36-3-1145	S1MC308	Artefact Scatter and PAD	36-3-1380	S2MC233	Rock Shelter with Artefacts
36-3-1146	S1MC309	Isolated Find	36-3-1381	S2MC234	Artefact Scatter
36-3-1137	S1MC310	Isolated Find	36-3-0016 & 36-3-0134	S2MC236	Rock Shelters with Art and Artefacts
36-3-1138	S1MC311	Isolated Find	36-3-1382	S2MC237	Isolated Find
36-3-1149	S1MC312	Isolated Find	36-3-1383	S2MC238	Artefact Scatter
36-3-1407	S1MC313 (NB1)	Artefact Scatter	36-3-1384	S2MC239	Artefact Scatter
36-3-1408	S1MC314 (NB2)	Artefact Scatter and PAD	36-3-1385	S2MC240	Artefact Scatter
36-3-1409	S1MC315 (NB3)	Isolated Find	36-3-1386	S2MC241	Artefact Scatter
36-3-1410	S1MC316 (NB4)	Artefact Scatter	36-3-1387	S2MC242	Isolated Find
36-3-1411	S1MC317 (NB5)	Isolated Find	36-3-1388	S2MC243	Isolated Find
36-3-1412	S1MC318 (NB6)	Isolated Find	36-3-1389	S2MC244	Isolated Find
36-3-1413	S1MC319 (NB7)	Isolated Find	36-3-1390	S2MC245	Isolated Find
36-3-1414	S1MC320 (NB8)	Isolated Find	36-3-1391	S2MC246	Isolated Find
36-3-1415	S1MC321 (NB9)	Isolated Find	36-3-1392	S2MC247	Artefact Scatter
36-3-1416	S1MC322 (NB10)	Artefact Scatter and PAD	36-3-1393	S2MC248	Artefact Scatter
36-3-1417	S1MC323 (NB11)	Isolated Find	36-3-1394	S2MC249	Artefact Scatter
36-3-2597	S1MC324 (NB12)	Isolated Find	36-3-1395	S2MC250	Artefact Scatter and PAD
36-3-2607	S1MC325	Isolated Find	36-3-1396	S2MC251	Artefact Scatter and

AHIMS	Site Name	Site Type	AHIMS	Site Name	Site Type
					PAD
36-3-2608	S1MC326	Rock shelter with PAD	36-3-1397	S2MC252	Isolated Find
36-3-2609	S1MC327	Rock shelter with PAD	36-3-1398	S2MC253	Isolated Find
36-3-2610	S1MC328	Isolated Find	36-3-1399	S2MC254	Isolated Find
36-3-2611	S1MC329	Rock shelter with PAD	36-3-1400	S2MC255	Isolated Find
36-3-2612	S1MC330	Rock shelter with PAD	36-3-1401	S2MC256	Artefact Scatter
36-3-2613	S1MC331	Rock shelter with artefacts	36-3-1402	S2MC257	Isolated Find
36-3-2614	S1MC332	Rock shelter with PAD	36-3-1403	S2MC258	Artefact Scatter and PAD
36-3-2615	S1MC333	Rock shelter with PAD	36-3-1404	S2MC259	Isolated Find
36-3-2616	S1MC334	Rock shelter with PAD	36-3-1405	S2MC260	Isolated Find
36-3-2617	S1MC335	Rock shelter with PAD	36-3-1406	S2MC261a	Grinding Grooves and Isolated Find
36-3-2618	S1MC336	Rock shelter with PAD	36-3-2602	S2MC262	Artefact Scatter
36-3-2619	S1MC337	Rock shelter with PAD	36-3-3222	S2MC404	Artefact Scatter
36-3-2620	S1MC338	Rock shelter with PAD	36-3-0720; 36-3-0287	WC1 - Wilpinjong Creek 1	Open Artefact Site









MOOLARBENCOAL

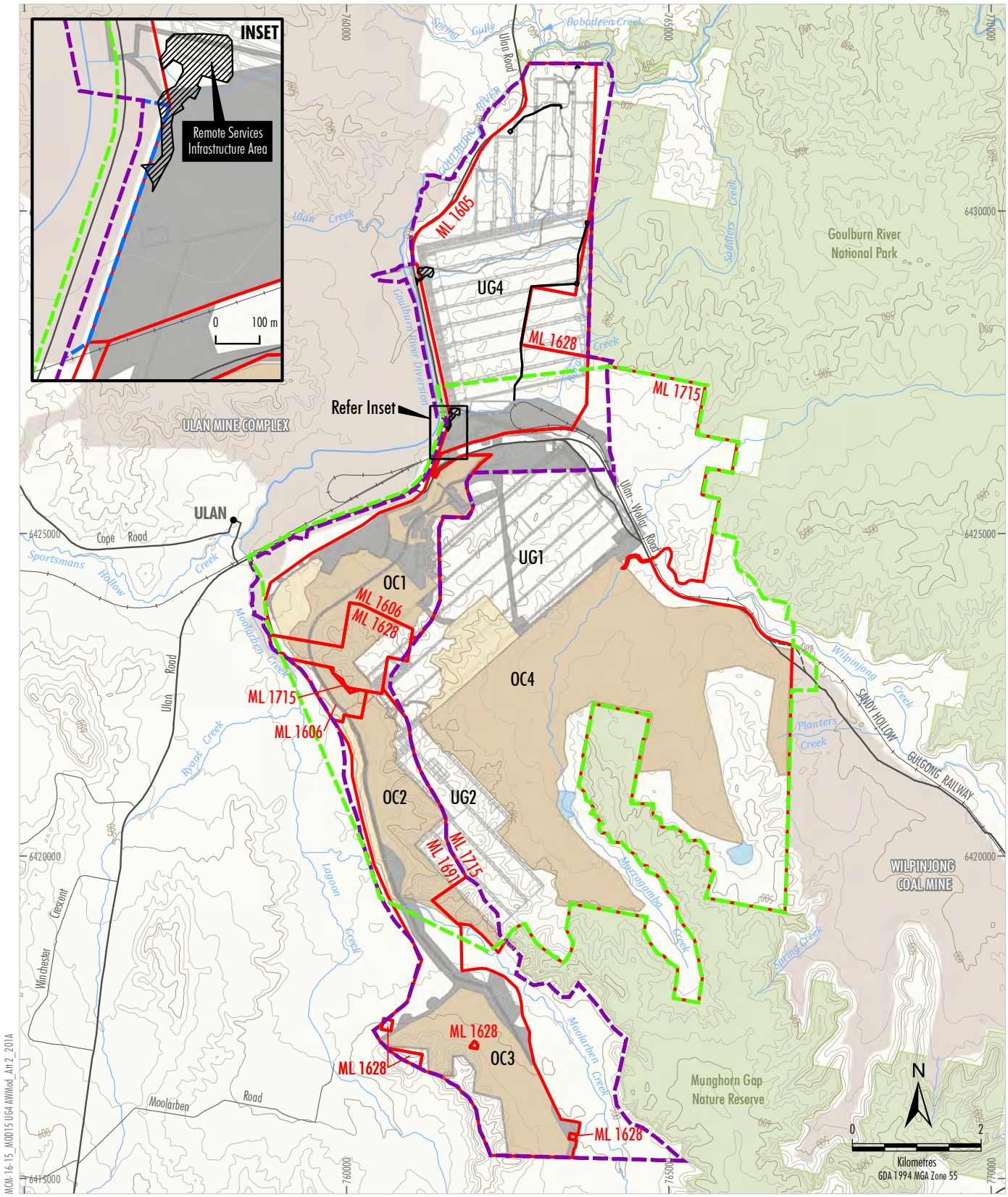
Moolarben Coal Complex
UG4 Ancillary Works Modification

Modification Report

ATTACHMENT 2

REVISED DEVELOPMENT APPLICATION BOUNDARY

YANCOAL
兖煤澳大利亚有限公司



LEGEND

- NSW National Parks and Wildlife Service
- Other Mining Operations
- Mining Lease Boundary

Existing/Approved Development

- Open Cut Mining Area
- Out-of-pit Emplacement
- Surface Infrastructure Area
- Clean Water Diversion Infrastructure
- Underground Longwall Layout
- Haul Road
- Road Realignment (not yet constructed)
- Approved Stage 1 Project Boundary
- Approved Stage 2 Project Boundary

UG4 Ancillary Works Modification

- Indicative Surface Infrastructure Area
- Revised Stage 1 Project Boundary

Source: MCO (2019); NSW Department of Planning, Industry and Environment (2019)

MOOLARBEN COAL COMPLEX

Revised Development Application Boundary

Figure A1