

MOOLARBEN COAL COMPLEX UG4 ANCILLARY WORKS MODIFICATION

SUBMISSIONS REPORT

MOOLARBEN COAL PROJECT STAGE 1
PROJECT APPROVAL (05_0117) [MOD 15]



NOVEMBER 2019
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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).

MCO recently lodged a Modification Report 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 report was placed on public exhibition by the NSW Department of Planning, Infrastructure and Environment (DPIE) from 4 October 2019 to 20 October 2019. During this period, Government agencies, community organisations, and members of the public were invited to provide submissions on the Modification Report to DPIE.

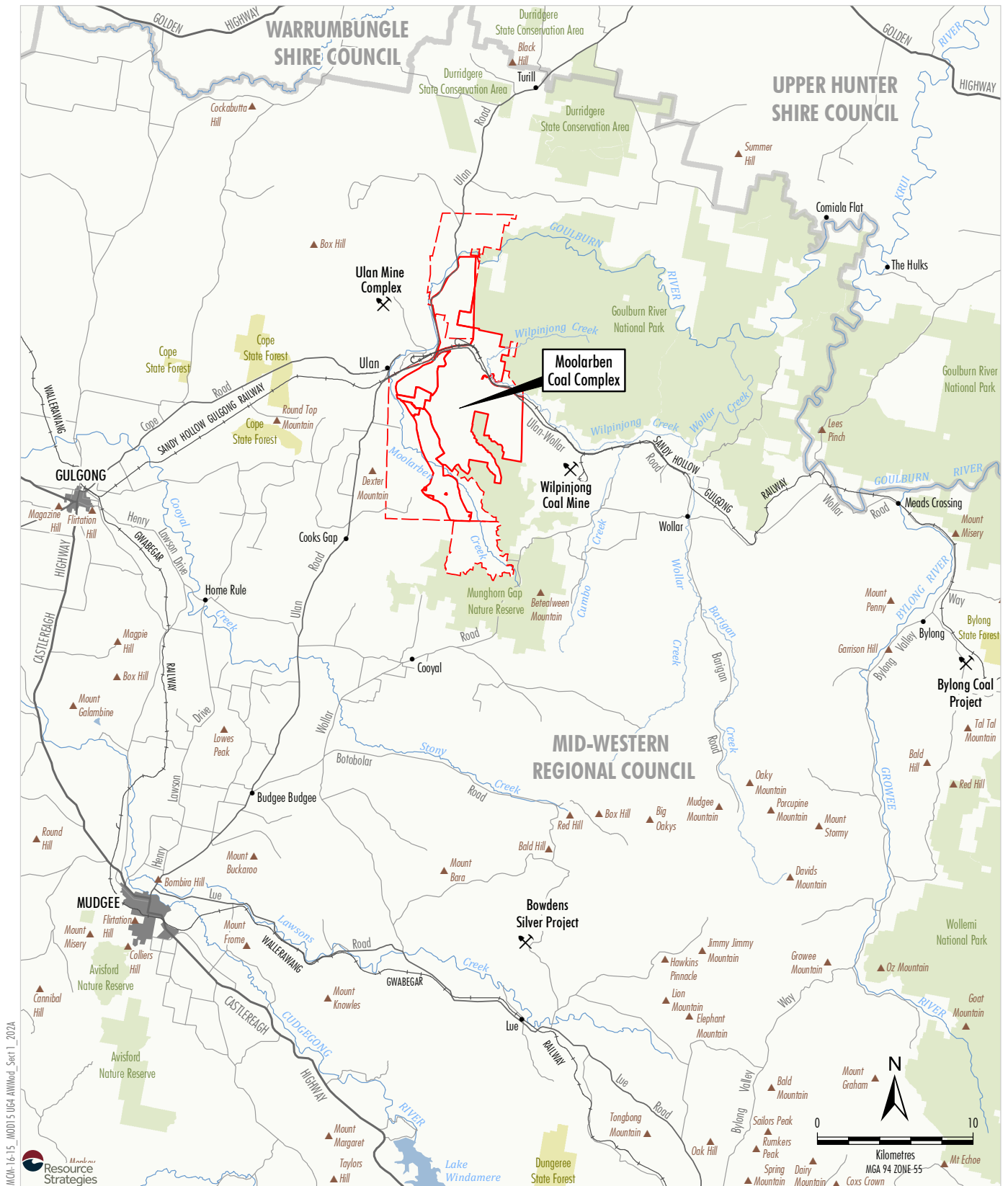
DPIE has requested that MCO review and respond to the submissions that were received on the Modification Report. This Submissions Report has been structured generally in accordance with *Draft Guidance for State Significant Projects: Preparing a Submissions Report* (DPIE, June 2019).

1.1 OVERVIEW OF THE EXHIBITED MODIFICATION

The key proposed changes to the approved Moolarben Coal Complex for the Modification are related to the following (Figure 3):

- 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.



MOOL-16-15_M0015 UGA ANW004_Sect1_2024

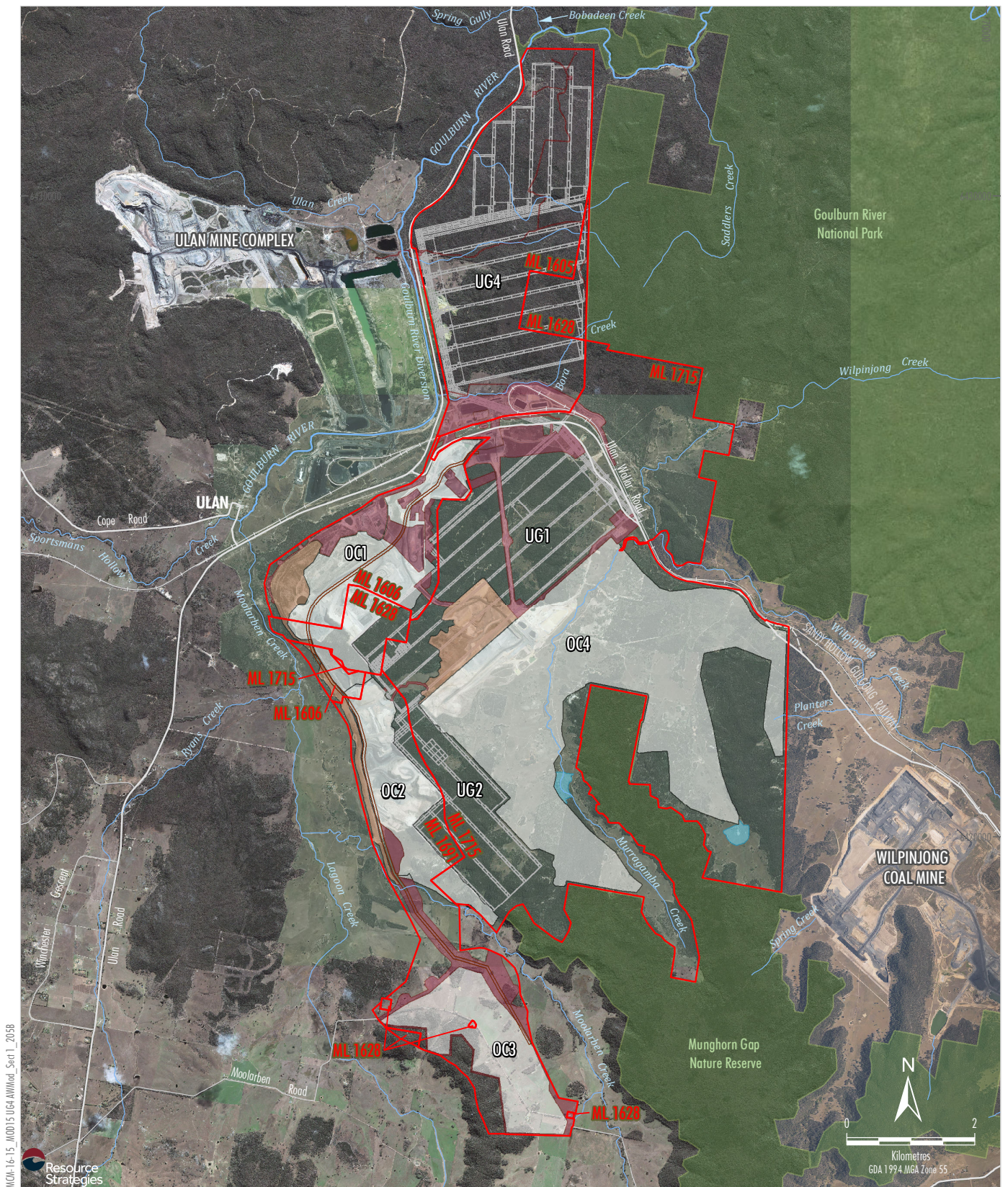
Source: NSW Land & Property Information (2017); NSW Department of Industry (2019); Office of Environment and Heritage NSW (2019)

MOOLARBEN COAL

MOOLARBEN COAL COMPLEX

Regional Location

Figure 1



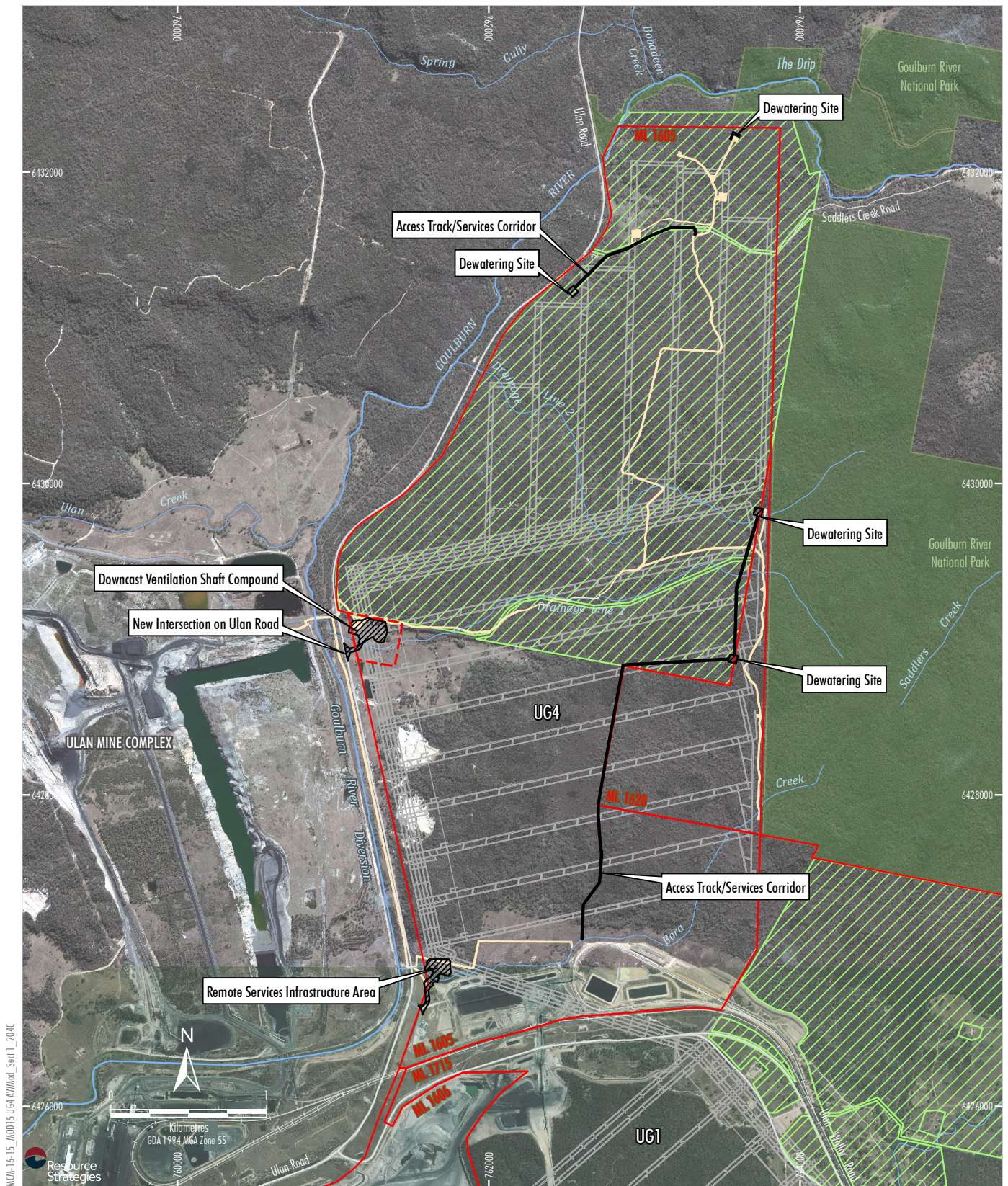
LEGEND

- 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
MOOLARBEN COAL COMPLEX
 Approved Moolarben Coal Complex

Figure 2



MCM-16-15_MMD15 UG4 AMMod_Sect1_204C

- 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
MOOLARBEN COAL COMPLEX
 Indicative Surface Infrastructure Location

Figure 3

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.
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 x 10 ⁻⁹ metres per second (m/s).	
	Unless an EPL authorises otherwise, MCO will comply with section 120 of the NSW Protection of the <i>Environment Operations Act, 1997</i> (PoEO Act).	

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)
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 <i>Storage and Handling of Dangerous Goods – Code of Practice 2005</i> (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.
Waste Management	As per Condition 64 of Schedule 3 of Project Approval 05-0117.	Unchanged.

2 ANALYSIS OF SUBMISSIONS RECEIVED

2.1 SUMMARY OF GOVERNMENT AGENCY SUBMISSIONS

MCO received submissions from seven government agencies:

- Department of Primary Industries;
- NSW Resources Regulator;
- Environmental Protection Authority;
- Roads and Maritime Services;
- Department of Planning, Industry and Environment – Biodiversity Conservation Division;
- Division of Resources and Geoscience; and
- Mid-Western Regional Council.

Comments from agencies are outlined in Table 2, along with responses from MCO.

2.2 SUMMARY OF COMMUNITY ORGANISATION AND PUBLIC SUBMISSIONS

MCO received submissions from five community organisations and 24 members of the public.

Responses to issues raised from community organisations and members of the public are outlined in Table 3, along with responses from MCO. Appendix A provides a list of submitters, reconciliation of issues raised in their submissions and where the response can be found in the Submissions Report.

2.3 KEY ISSUES RAISED IN SUBMISSIONS

The issues in submissions from community organisations and members of the public pertained to:

- matters that have the potential to be impacted by the Modification:
 - potential impacts to Goulburn River water quality due to surface disturbance within Bora Creek (matter 1);
 - potential impacts to the existing biodiversity offset area (matter 2);
 - potential Aboriginal cultural heritage impacts (matter 3);
 - potential noise impacts (matter 4);
 - potential traffic and road safety impacts (matter 5); and
 - potential visual impacts (matter 6).
- matters that **do not** have the potential to be impacted by the Modification:
 - potential impacts to groundwater and The Drip (matter 7); and
 - potential impacts from coal extraction (matter 8).

The issues raised by members of the public and community organisations are illustrated in Chart 1.

Chart 1
Issues Raised in Submissions

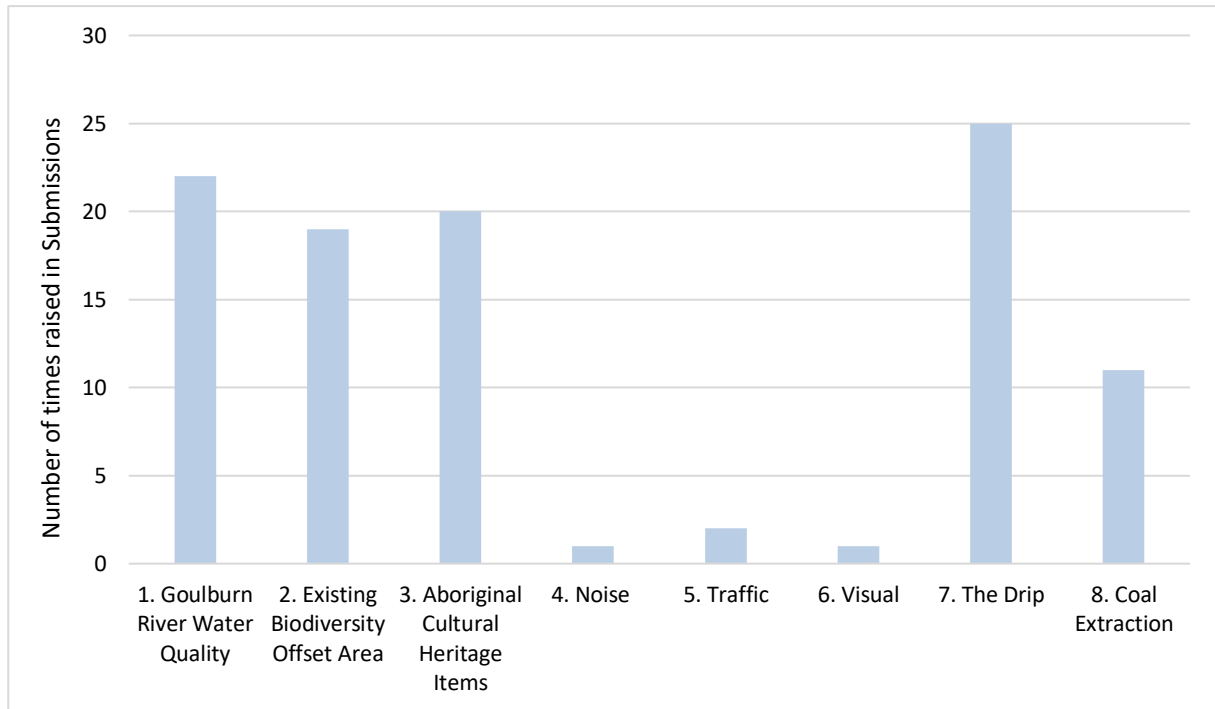


Table 2
Response to Government Agency Submissions

Summary of Comment	MCO Response
Department of Primary Industries	
<i>The Department of Primary Industries has reviewed the proposal and has no comments.</i>	Noted.
NSW Resources Regulator	
<i>The Resources Regulator advises the Department of Planning and Environment – Resources Assessments rehabilitation requirements have been adequately addressed in the Statement of Environmental Effects for Moolarben Coal Complex UG4 Ancillary Works Modification, received 2 October 2019.</i>	Noted.
Environmental Protection Authority	
<i>The EPA has reviewed the SEE for the proposed modifications and considers that the proposed changes will not lead to any significant impacts on air, water or noise quality beyond the site boundary.</i>	Noted.
<i>The EPA requests clarification as to whether the sediment dams associated with the Down Cast Ventilation Shaft and Remote Services Infrastructure Area compounds will be managed as nil-discharge (incorporated into Moolarben's dirty water management network) or whether it's proposed they will be included in the Environment Protection Licence as licensed discharge points, should the modification be approved.</i>	MCO confirms that the sediment dams associated with the downcast ventilation shaft and remote services infrastructure area are proposed to be included in the Environmental Protection Licence (EPL) consistent with other sediment control dams at the Moolarben Coal Complex. It should be noted, that both sediment dams will be managed to maintain sufficient freeboard following rainfall events in accordance with the <i>Moolarben Coal Complex Water Management Plan</i> . The dams will be appropriately sized and designed in accordance with Landcom (2004) and the <i>Moolarben Coal Complex Water Management Plan</i> .
Department of Planning, Industry and Environment – Biodiversity Conservation Division	
<i>The accredited assessor should provide a certified, final version of the BDAR.</i>	As outlined in the attached letter from ELA, the BDAR provided as Appendix B to the Modification Report (dated 1 October 2019) was the final version of the BDAR. The BDAR was signed off by Cheryl O'Dwyer who is an Accredited Person under the BC Act (BAAS18153).

Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response
<i>Department of Planning, Industry and Environment – Biodiversity Conservation Division</i>	
<p><i>The proponent should justify the delineation of species polygons for glossy black-cockatoos and gang-gang cockatoos.</i></p>	<p>As outlined in the BCD's BioNet Threatened Biodiversity Data Collection (TBDC) database, the Gang-gang Cockatoo and Glossy Black-cockatoo species habitat polygons are required to map areas of potential breeding habitat (i.e. hollow-bearing trees). Given hollow-bearing trees were infrequently identified throughout PCT 479, the full extent of this community was not considered to provide suitable breeding habitat for these species.</p> <p>Species habitat polygons for both species of cockatoos were based on 30 metre buffers around all hollow-bearing trees within PCT 479. ELA has confirmed that the 30 m buffer is based on the method for mapping flora species habitat polygons in Section 6.4.1.29 of the BAM. In the absence of an equivalent method for fauna species, this approach is considered a reasonable method to appropriately identify the portions of PCT 479 which provide potential breeding habitat for the Gang-gang Cockatoo and Glossy Black-cockatoo.</p> <p>Section 6.4.1.29 of the BAM states:</p> <p><i>...The species polygon is used to show the location of individual plants present on the subject land. The species polygon is to be established by the location of the individual plant or group of plants, and a 30m buffer area around the outside of the individual plant or group of plants.</i></p>
<p><i>An assessment of hollow-bearing trees in PCT 281 for gang-gang cockatoos should be provided.</i></p>	<p>ELA has confirmed that targeted searches for tree hollows within the Modification area and surrounds did not identify any hollow-bearing trees within PCT 281. As such, this community was not identified as containing any breeding habitat for the Gang-gang Cockatoo.</p>

Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response																								
Department of Planning, Industry and Environment – Biodiversity Conservation Division																									
Mitigation and management measures should be included for all potential indirect impacts identified in Table 26 of the BDAR.	<p>The table below has been prepared to identify the indirect impacts as per Table 26 of the BDAR along with the corresponding mitigation and management measures outlined in Table 27 of BDAR. MCO has also identified additional mitigation and management measures where required. As demonstrated in the table below, mitigation and management measures have been proposed for each of the potential indirect impacts identified in the BDAR.</p> <table><tr><th colspan="3">Reconciliation of Indirect Impacts and Proposed Mitigation/Management Measures</th></tr><tr><th>Indirect Impact as Per Table 26 of BDAR</th><th>Mitigation/Management Measure as per Table 27 of BDAR</th><th>Additional Mitigation/Management Measure</th></tr><tr><td>Inadvertent impacts on adjacent habitat or vegetation.</td><td><ul style="list-style-type: none">Instigating clearing protocols including pre-clearing surveys, staged clearing, and the presence of a trained ecological or licensed wildlife handler during clearing events.</td><td>N/A</td></tr><tr><td>Sedimentation and contaminated and/or nutrient-rich run-off.</td><td><ul style="list-style-type: none">Erosion and sediment control measures to control the quality of water released from the site into the receiving environment.</td><td>N/A</td></tr><tr><td>Noise, dust or light spill.</td><td><ul style="list-style-type: none">Construction works during daylight hours, except ventilation shaft drilling.Management of dust generation.</td><td>N/A</td></tr><tr><td>Transport of weeds and pathogens from the site to adjacent vegetation.</td><td><ul style="list-style-type: none">Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas.</td><td>N/A</td></tr><tr><td>Increase in pest animal populations.</td><td><ul style="list-style-type: none">Implementation of pest control measures.</td><td>N/A</td></tr><tr><td>Vehicle strike.</td><td><ul style="list-style-type: none">Staff training to communicate environmental aspects and responsibilities.</td><td><ul style="list-style-type: none">Vehicle access to the Modification areas will be limited to authorised personnel only. Speeds will be limited on mine roads.</td></tr></table>	Reconciliation of Indirect Impacts and Proposed Mitigation/Management Measures			Indirect Impact as Per Table 26 of BDAR	Mitigation/Management Measure as per Table 27 of BDAR	Additional Mitigation/Management Measure	Inadvertent impacts on adjacent habitat or vegetation.	<ul style="list-style-type: none">Instigating clearing protocols including pre-clearing surveys, staged clearing, and the presence of a trained ecological or licensed wildlife handler during clearing events.	N/A	Sedimentation and contaminated and/or nutrient-rich run-off.	<ul style="list-style-type: none">Erosion and sediment control measures to control the quality of water released from the site into the receiving environment.	N/A	Noise, dust or light spill.	<ul style="list-style-type: none">Construction works during daylight hours, except ventilation shaft drilling.Management of dust generation.	N/A	Transport of weeds and pathogens from the site to adjacent vegetation.	<ul style="list-style-type: none">Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas.	N/A	Increase in pest animal populations.	<ul style="list-style-type: none">Implementation of pest control measures.	N/A	Vehicle strike.	<ul style="list-style-type: none">Staff training to communicate environmental aspects and responsibilities.	<ul style="list-style-type: none">Vehicle access to the Modification areas will be limited to authorised personnel only. Speeds will be limited on mine roads.
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Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response		
Department of Planning, Industry and Environment – Biodiversity Conservation Division			
Mitigation and management measures should be included for all potential indirect impacts identified in Table 26 of the BDAR (Cont.)	Indirect Impact as Per Table 26 of BDAR	Mitigation/Management Measure as per Table 27 of BDAR	Additional Mitigation/Management Measure
	Rubbish dumping.	<ul style="list-style-type: none">Staff training to communicate environmental aspects and responsibilities.	<ul style="list-style-type: none">Implementation of access restrictions to the Modification area.
	Wood collection.	<ul style="list-style-type: none">Instigating clearing protocols including pre-clearing surveys, staged clearing, and the presence of a trained ecological or licensed wildlife handler during clearing events.Staff training to communicate environmental aspects and responsibilities.	<ul style="list-style-type: none">Implementation of access restrictions to the Modification area
	Bush rock removal and disturbance.	<ul style="list-style-type: none">Instigating clearing protocols including pre-clearing surveys, staged clearing, and the presence of a trained ecological or licensed wildlife handler during clearing events.Staff training to communicate environmental aspects and responsibilities.	N/A

Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response		
Department of Planning, Industry and Environment – Biodiversity Conservation Division			
Mitigation and management measures should be included for all potential indirect impacts identified in Table 26 of the BDAR (Cont.)	Indirect Impact as Per Table 26 of BDAR	Mitigation/Management Measure as per Table 27 of BDAR	Additional Mitigation/Management Measure
	Increased risk of fire.	<ul style="list-style-type: none">Staff training to communicate environmental aspects and responsibilities.	<ul style="list-style-type: none">Firebreaks will be maintained where required around the Moolarben Coal Complex to minimise the spread of bushfires.Maintenance of fire-fighting equipment at the Moolarben Coal Complex.MCO will liaise with the Cooks Gap Rural Fire Service as required, so that both parties are aware of fires in and adjoining the area of the Moolarben Coal Complex.
	Disturbance to specialist breeding and foraging habitat.	<ul style="list-style-type: none">Instigating clearing protocols including pre-clearing surveys, staged clearing, and the presence of a trained ecological or licensed wildlife handler during clearing events.Timing works to avoid critical life cycle events such as breeding or nursing.	N/A

Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response
Division of Resources and Geoscience	
<p><i>The Division has reviewed the information supplied in relation to the abovementioned Modification and acknowledges that there are no proposed changes to the approved mining areas, mining layout, ore processing rate, mine life, mining methods or production limits. There is also no change to the Moolarben ore resource/reserve. The Division supports the Modification to ensure the safe and efficient operation of the approved UG4 underground mining area.</i></p> <p><i>Accordingly, the Division has no resource recovery/utilisation or resource sterilisation issues in relation to the Modification, and no recommended conditions of consent.</i></p> <p><i>The Division has determined that, should the Modification be approved, identified risks or opportunities can be effectively regulated through the conditions of mining authorities issued under the Mining Act 1992 therefore has no further comments at this time.</i></p>	Noted.
Roads and Maritime Services	
<p>The T-intersection at Saddlers Creek Road and Ulan Road proposed for access to the northern dewatering sites is unsatisfactory for the proposed use.</p>	<p>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.</p> <p>Vehicle movements at the intersection of Saddlers Creek Road with Ulan Road have been reviewed by TTPP (2019) with regard to the Austroads (2017b) warrants for rural intersection treatments. Traffic volumes at the intersection of Ulan Road with Saddlers Creek Road warrant the minimum preferred treatment, being BAL and BAR treatments in Ulan Road, regardless of the traffic generated by the Modification.</p> <p>The Modification would not generate any additional demand for left turn movements from Ulan Road into Saddlers Creek Road, and as such, any requirement to provide a BAL treatment at the intersection would be unrelated to the Modification.</p> <p>In addition, MCO would consult with RMS and Council prior to the commencement of construction at the northern bore sites (expected 2026) and confirm any traffic control measures or treatment required specifically for the Modification traffic.</p> <p>MCO will continue to monitor Saddlers Creek Road during construction activities and will implement relevant management measures in consultation with MWRC, as required that may include road watering and grading. Traffic management measures would be designed and implemented, taking into consideration the traffic volumes and short-term nature of the construction activity (i.e. 8 weeks for earth works and 12 weeks for construction), and may include (for example) provision of advance warning signs on Ulan Road to alert drivers to the presence of trucks turning in and out of Saddlers Creek Road, and traffic controllers to manage passing traffic during the movement of any larger equipment floats or cranes into or out of Saddlers Creek Road.</p>

Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response
Roads and Maritime Services	
<p>Roads and Maritime seeks further details regarding the extent of upgrades to Saddlers Creek Road and the upgrades need to account for future and continued use.</p>	<p>Saddlers Creek Road is a Crown Road listed as part of Mid-Western Regional Council's Unmaintained and Unformed Roads Policy. It should be noted that the Mid-western Regional Council did not comment on the current condition and proposed maintenance of Saddlers Creek Road.</p> <p>Notwithstanding, 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 along Saddlers Creek Road would be negligible. As such, MCO is not proposing to upgrade Saddlers Creek Road as part of the Modification.</p> <p>As stated above, MCO will continue to monitor Saddlers Creek Road during construction activities and will implement relevant management measures in consultation with MWRC, as required that may include road watering and grading. Traffic management measures would be designed and implemented, taking into consideration the traffic volumes and short-term nature of the construction activity (i.e. 8 weeks for earth works and 12 weeks for construction), and may include (for example) provision of advance warning signs on Ulan Road to alert drivers to the presence of trucks turning in and out of Saddlers Creek Road, and traffic controllers to manage passing traffic during the movement of any larger equipment floats or cranes into or out of Saddlers Creek Road.</p>
<p>Forecasts undertaken by GTA Consultants (2015) pertaining to peak hour traffic volumes at key intersections are unlikely to be representative of the traffic impacts on the broader network therefore further consideration is needed as to the level of required intersection treatments.</p>	<p>GTA Consultants (2015a) conducted surveys of vehicle turning movements during specific peak hours at key intersections in 2012 and 2015, and analysed their operational performance with forecast traffic changes for years 2017 and 2027. Those analyses included the cumulative effects of the Moolarben UG1 Optimisation Modification and other major projects in the region including those described in Section 3.4 of the Road Transport Review (TTPP, 2019).</p> <p>To quantify existing traffic conditions, an automatic traffic survey was undertaken by TTPP on Ulan Road near the site of the proposed new access road. The survey was conducted over one week between Friday 12 October 2018 and Thursday 18 October 2018.</p> <p>To compare forecasts against existing conditions, the inputs to the GTA Consultants (2015a) SIDRA analyses were compared with the surveyed volumes in 2018, which found comparisons which suggest that the GTA Consultants (2015a) forecasts of peak hour volumes at intersections for 2017 are generally consistent with the surveyed conditions in 2018 and so may be considered to be reasonably representative of existing conditions.</p> <p>The results of the analyses demonstrate that the changes to traffic conditions which would occur with the Modification would have negligible impact on the operation of the existing intersections serving the Moolarben Coal Complex. The intersections would operate with low delays to vehicles and spare capacity. No changes to the existing intersections are required to accommodate the changed traffic conditions which would result from the Modification.</p>

Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response
Roads and Maritime Services	
<p>Roads and Maritime does not object to the proposal subject to provision of additional information provided by MCO.</p> <ul style="list-style-type: none"> Prior to commencement of construction associated with the Modification the proponent is required to provide further detail as to the proposed new access intersecting with Ulan Road (MR214) and it is to be designed in accordance with Section 138(2) of the Roads Act, 1993. 	<p>MCO acknowledges approval under Section 138 of the Roads Act will be required prior to the commencement of the new intersection.</p>
<ul style="list-style-type: none"> Prior to the commencement of construction works, the proponent is to contact Roads and Maritime's Field Traffic Manager on 1300 656 371 to determine if a Road Occupancy Licence (ROL) is required. In the event a ROL is required, the proponent is to obtain a ROL prior to works commencing within three (3) metres of the travel lane of Ulan Road. 	<p>Prior to the commencement of construction works within the Ulan Road Reserve, MCO will contact the RMS to determine if a ROL is required.</p>
<ul style="list-style-type: none"> Additional information on any ancillary works, such as relocation of services, vegetation removal, transitions for drainage, batter slopes and arrangements being made for any required road reserve widening acquisition. 	<p>The Modification disturbance footprint accounts for works required for the new intersection. Such works will be confirmed via the Section 138 approval process.</p>
<ul style="list-style-type: none"> RMS seeks the proponent considers the change in use of the intersection between Saddlers Creek Road and Ulan Road resulting from the Modification. The current T-intersection arrangement with Ulan Road appears unsatisfactory. 	<p>As outlined above, 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.</p> <p>Vehicle movements at the intersection of Saddlers Creek Road with Ulan Road have been reviewed by TTPP (2019) with regard to the Austroads (2017b) warrants for rural intersection treatments. Traffic volumes at the intersection of Ulan Road with Saddlers Creek Road warrant the minimum preferred treatment, being BAL and BAR treatments in Ulan Road, regardless of the traffic generated by the Modification.</p> <p>The Modification would not generate any additional demand for left turn movements from Ulan Road into Saddlers Creek Road, and as such, any requirement to provide a BAL treatment at the intersection would be unrelated to the Modification.</p>

Table 2 (Continued)
Response to Government Agency Submissions

Summary of Comment	MCO Response
Roads and Maritime Services	
<ul style="list-style-type: none"> A Traffic Management Plan developed in consultation with relevant council(s) and Roads and Maritime to outline measures to manage traffic related issues associated with the proposal and to determine the final details of haulage, road specific mitigation measures and haulage timing. Further details of proposed haulage routes, confirmation of vehicles types and volumes, including peaks during construction including use of Oversize/Overmass (OSOM) heavy vehicles is to be provided. Use of OSOM will subject to provisions under the relevant special permit via the Heavy Vehicle Regulator. Safe Intersection Sight Distance (SISD) within a posted 100km/h posted speed limit at this intersection for the proposed use does not meet relevant Austroads requirements and requires further consideration. Safety of all road users together with MCO employees using this intersection again requires a more considered approach. Installation of Advance Truck Warning Signs (W5-22 Size B) with a distance plate (W8-5 Size B) under, located 250 metres in advance of the proposed new access and the intersection with Saddlers Creek Road along Ulan Road. 	<p>Works utilising the Ulan Road/Saddlers Creek Road intersection are not expected to commence until approximately 2026. A TMP will be developed in consultation with MWRC and RMS prior to Modification construction activities commencing at the northern dewatering sites.</p>
Mid-Western Regional Council	
<p><i>Council requests that the proposed intersection with Ulan Road be designed in accordance with Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings (Austroads, 2017), and that the proponent consult with NSW Roads and Maritime Services and Council to obtain all relevant approvals for the works to be undertaken. All works will be the full cost of the proponent.</i></p>	<p>MCO agrees and accept MWRC's request.</p> <p>As stated in Section 2.1 of the Modification Report:</p> <p><i>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).</i></p> <p>Section 6.6.3 of the Modification Report also confirms:</p> <p><i>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.</i></p> <p>The above responses to RMS also provide further detail regarding the information which MCO will provide as part of the Section 138 approval process.</p>
<p><i>Council acknowledges that the proposed modification is not anticipated to have any additional groundwater impacts, or impacts to 'The Drip', which is a significant natural feature for the Mid-Western Region. To that end, the proponent should ensure compliance with the consent, to appropriately manage mining practices in the vicinity of 'The Drip', and to uphold their statement of commitment in Appendix 3: Statement of Commitments (1) Protect The Drip and Goulburn River Gorge.</i></p>	<p>Noted.</p>

Table 3
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
Matters that have the Potential to be Impacted by the Modification	
1. Potential Impacts to the Goulburn River water quality due to surface disturbance within Bora Creek	
Surface disturbance in Bora Creek has the potential to mobilise additional sediment-laden run-off into the creek which could lead to subsequent surface water quality impacts to the Goulburn River.	<p>The Modification would involve the construction of a remote services infrastructure area, including a culvert crossing, within Bora Creek catchment.</p> <p>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 in accordance with the requirements of the Water Management Plan using suitable erosion and sediment controls designed in accordance with <i>Managing Urban Stormwater: Soils and Construction including Volume 1, Volume 2A -Installation of Services and Volume 2C – Unsealed Roads</i>.(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.</p> <p>The Moolarben Coal Complex Water Management Plan will be updated to include the areas proposed to be impacted by the Modification.</p>
2. Potential Impacts to the Existing Biodiversity Offset Area	
Surface disturbance within the existing biodiversity offset area and availability of replacement offsets.	<p>The Modification has been designed to minimise impacts to native vegetation by following existing access tracks where possible. As a result, only approximately 10 ha of native vegetation would be cleared for the Modification. Of the 10 ha of native vegetation proposed to be cleared, <u>approximately 3.25 ha occurs within Offset Area 2</u> (see Table 6 of the Modification Report). In addition to offsetting the impacts from the Modification as a whole, MCO would replace, to the satisfaction of DPIE and DoEE, this portion of the existing Offset Area 2 with an equivalent area in a different location.</p> <p>After accounting for the credits required under Modification 14 and this Modification, the Gilgal Property would still have sufficient area to compensate for the proposed disturbance within Offset Area 2 (see Table 8 of the Modification Report). MCO therefore proposes to relocate the 3.25 ha of proposed disturbance within Offset Area 2 to the Gilgal Property.</p> <p>In accordance with Section 7.2.2 of the <i>EPBC Act Environmental Offsets Policy</i> (SEWPaC, 2012), 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 <i>Biodiversity Conservation Act 2016</i> and <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p>

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
3. Potential Impacts to Aboriginal Cultural Heritage	
<p>Portions of the Modification footprint had not been subject to field surveys.</p>	<p>As stated in Section 11.2 of the ACHA:</p> <p><i>...The subject area included the full extent of the Modification footprint, except for one route readjustment for an access track/ services corridor on the North Dewatering Site and Access Track/ Services Corridor. This resulted in a small area of the Modification footprint which fell outside of the surveyed area. This area was not surveyed (Figure 6), however it was determined to be likely to have an identical archaeological character as the adjacent subject 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/ services corridor.</i></p> <p>In consideration of the above, Niche Environment and Heritage conducted additional heritage surveys with the RAPs along the portion of the proposed access track and services corridor on 31 October 2019. These surveys did not identify any additional items of heritage value that would be impacted by the Modification.</p> <p>Niche has prepared an additional assessment report which outlines the survey methods and results, and is provided in Appendix C of this Submissions Report. The additional assessment report prepared by Niche will be provided to the RAPs.</p>

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
3. Potential Impacts to Aboriginal Cultural Heritage Items	
<p>Further disturbance to high scientific significance site S1MC 230 near the Bora Creek Management Area.</p>	<p>Site S1MC230 was originally identified in 2006 during the Stage 1 Environmental Assessment. The ACHA prepared by Hamm (2006) for the Stage 1 Environmental Assessment determined that this site has “<i>some research potential</i>” and was given a significance rating of “<i>high archaeological significance</i>”. Although Hamm (2006) noted that part of the site (~60%) has already been impacted by ploughing, it was recommended that this site be subject to test excavations and salvage.</p> <p>Surface salvage and sub-surface investigation (test excavations) were undertaken during 2008/2009.</p> <p>Consequently, the Modification would not be the first instance of approved salvage and disturbance of this site. Notwithstanding, the site would be managed in accordance with the approved Heritage Management Plan, as follows:</p> <ol style="list-style-type: none"> 1. the disturbance area would be minimised to the extent required for the proposed construction and operational activities to be undertaken; 2. disturbance boundaries would be demarcated to restrict impacts to the approved footprint; and 3. management of the site would occur in accordance with the approved Heritage Management Plan, including: <ol style="list-style-type: none"> a) surface collection (Section 5.5 of approved Heritage Management Plan); b) archaeological excavation (Section 5.6 of approved Heritage Management Plan); and c) artefact analysis (Section 5.7 of approved Heritage Management Plan). <p>In addition to the above, the proposed Modification would not impact the Bora Creek Management Area described in Section 5.2.1 of the approved Heritage Management Plan. The Bora Creek Management Area is located to the east of site S1MC230 and has restricted access. These measures are considered appropriate for the protection of Aboriginal cultural values within the Bora Creek Management Area, which are considered to be representative of the heritage values in the locality.</p>

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
3. Potential Impacts to Aboriginal Cultural Heritage Items	
<p>The Modification should avoid impacts to sites S1MC 230, S1MC 278, S1MC 433 and S1MC 434 by relocating the proposed remote services infrastructure area.</p>	<p>The remote services infrastructure area proposed as part of the Modification is required to support safe and efficient operation of the UG4 workings with the final location of this infrastructure area selected on the basis of avoiding or minimising impacts to Aboriginal heritage, native vegetation and other environmental considerations.</p> <p>The location of the proposed remote services infrastructure area to the longwall mining area is critical to recognising the efficiencies outlined in Section 3 of the Modification Report. It should be noted that, in Section 15.3 of the ACHA, Niche Environment and Heritage concluded the following:</p> <p><i>The Modification is required for the optimisation of the currently approved UG4 underground mine area. The likely harm to Wiradjuri cultural heritage from the proposed works is assessed, for the most part to be low, and the harm therefore justified by the relative necessity of the Modification.</i></p> <p>Wiradjuri cultural heritage values were considered during the project design. The footprint of the remote services infrastructure area has been placed, and progressively optimised to reduce its overall size in an area that contains abundant Wiradjuri archaeology. The design of the entire project footprint has sought to avoid the areas demarcated in the MCO HMP as conservation areas (i.e. the Bora Creek Conservation Area), to generally be in areas of previous ground disturbance (cleared areas, previously cleared areas, existing roadways and corridors), and to be coincident with archaeological sites that have already been managed under the MCO HMP.</p> <p>MCO would implement the management and mitigation measures described in the ACHA, which are consistent with the protocols of the Heritage Management Plan.</p> <p>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).</p> <p>MCO would continue to liaise with the RAPs throughout survey and salvage activities for the Modification in accordance with the Heritage Management Plan.</p>

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
3. Potential Impacts to Aboriginal Cultural Heritage Items	
<p>Dissatisfaction with the ACHA assessment which found that salvaging sites would result in a 'partial loss of value' rather than 'total loss'.</p>	<p>Sites identified as having Aboriginal heritage value are managed in accordance with the approved Heritage Management Plan. The management procedures outlined in the Heritage Management Plan are undertaken to record and recover a representative sample of heritage items to avoid a total loss of value.</p> <p>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. The proposed mitigation actions, while not resulting in the conservation of archaeological sites or heritage values in their entirety are measures put in place to promote, through both the activity and results of archaeological work, the principle of inter-generational equity as described in the <i>Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)</i>.</p> <p>Section 5.5 of the approved Heritage Management Plan states (emphasis added):</p> <p><i>Where not already undertaken, sites scheduled for surface collection and/or test excavation will be subject to recording according to archaeological best practice, as outlined in the OEH policy Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010b) and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011).</i></p> <p><i>Consistent with the OEH policy Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010b), <u>analysis of collected and salvaged artefacts will seek to further the knowledge of past human behaviours in the Moolarben area.</u></i></p> <p>Given this, Niche Environment and Heritage concluded that the Modification would not result in complete loss of value of the heritage items proposed to be disturbed.</p> <p>Notwithstanding the above, it is recognised that a number of the Aboriginal parties would consider that the Project results in a complete loss of value of these individual sites. It should be noted that the ACHA concluded that these objects are typical of those found across the wider locality and are considered to be well represented by other sites which would not be impacted by the Modification (i.e. they would remain in-situ).</p>

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
3. Potential Impacts to Aboriginal Cultural Heritage Items	
Potential cumulative impacts to Aboriginal cultural heritage.	<p>Section 5 of the ACHA provides a detailed description of the previous assessments that have been undertaken in the Modification area and wider locality. To assist in assessing the cumulative impacts of the Modification, this section includes a description of all works previously undertaken, and all items of heritage significance identified, at the Moolarben Coal Complex, Ulan Coal Mine and Wilpinjong Coal Mine.</p> <p>In summary it was determined that there has been extensive Aboriginal cultural heritage assessment undertaken adjacent to the Modification area and confirms that the sites identified within the Modification area are typical of the type and contents of sites previously recorded in similar landforms at and around the local area.</p> <p>Given the potential impacts from the Modification were determined by Niche (2019) not to be significant, it is unlikely that the Modification would result in any significant cumulative impacts to the Aboriginal heritage values of the wider region.</p>
Lack of ongoing consultation with Registered Aboriginal Parties.	<p>MCO will maintain ongoing consultation with Aboriginal stakeholders throughout the life of the Moolarben Coal Complex. Section 5.13 of the approved Heritage Management Plan outlines the protocol for ongoing consultation with the RAPs, stating:</p> <p><i>Ongoing consultation with RAPs will occur via meetings throughout the life of the Moolarben Coal Complex. Meetings will be open to all RAPs and will provide a forum for RAPs to raise any issues they may have regarding the Moolarben Coal Complex, and for MCO to provide updates.</i></p> <p><i>Meetings with RAPs will be convened at least annually by MCO. Issues and matters that may be discussed in the meetings include (but are not limited to):</i></p> <ul style="list-style-type: none"> • <i>mine progress;</i> • <i>proposed fieldwork;</i> • <i>implementation of Aboriginal Cultural Awareness Training;</i> • <i>review of the HMP;</i> • <i>key results of any fieldwork; and</i> • <i>updates on the Aboriginal Heritage Conservation Strategy (Section 5.2).</i> <p><i>RAPs will be notified of upcoming meetings with a minimum of 10 business days notice. Additional meetings with RAPs may be held on an as required/requested basis if agreed by MCO. Minutes (notes) from these meetings will be made available to all RAPs within four weeks of the meeting.</i></p>

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
4. Potential Noise Impacts	
Concern regarding noise impacts associated with the 24-hour operations.	<p>Construction of the downcast ventilation shaft compound would occur 24 hours per day, seven days per week. 24 hours per day construction was assessed in the Phase 1 Noise modelling scenario. It should be noted that construction would only be short-term with earth works and access taking approximately 12 weeks and construction of the shaft itself taking approximately 6 months.</p> <p>Construction of the other components of the Modification (i.e. the remote services infrastructure area and dewatering bores) would only occur during daytime hours.</p> <p>The Noise Review prepared by SLR (2019) assessed the potential noise impacts associated with the Modification and concluded there would be:</p> <ul style="list-style-type: none"> • no exceedance of the Project Approval noise limits are predicted during the daytime, evening and night-time at any privately owned receivers from the UG4 Ancillary Works Phase 1 in isolation; and • no exceedance of the Project Approval noise limits are predicted during the daytime, evening and night-time at any privately owned receivers from the approved Moolarben Coal Complex (i.e. open cut, underground and coal processing operations) plus the UG4 Ancillary Works Phase 1.
Impacts associated with increased road traffic noise.	<p>As discussed in Section 6.4.2 of the Modification Report, there is not expected to be any significant traffic noise impacts associated with the Modification given:</p> <ul style="list-style-type: none"> • a small number of trucks/traffic are proposed to be associated with deliveries to construction sites with no increase in peak workforce vehicle movements; • the majority of the traffic will be transporting excavated material from each of the construction sites back to the open cut pit for disposal; and • the majority of traffic will be on Ulan Road between the construction sites and the open cut pit where there are no private receivers, therefore there would be negligible noise impacts on private receivers in the locality.
5. Potential Traffic and Road Safety Impacts	
Potential road safety impacts associated with the Modification traffic.	<p>The results of the Traffic Review prepared by TTPP (2019) concluded:</p> <p><i>... 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...</i></p> <p>Notwithstanding, 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. These management measures would continue to be implemented by MCO in accordance with the relevant RMS requirements, taking into consideration the traffic volumes and nature of the construction activity.</p>

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
5. Potential Traffic and Road Safety Impacts	
Potential deterioration of public roads being used by the Modification.	As detailed in Section 6.6 of the Modification Report, 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, traffic movements would only occur over a short period (approximately 6 months for the initial phase followed by a further 3 months occurring in approximately 2026). 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).
Potential to congest Saddlers Creek Road during construction of the Northern dewatering site.	Given the relatively short construction periods and minor works associated with the northern dewatering sites, the potential for congestion is limited. MCO would implement traffic management for construction vehicles entering and exiting the northern dewatering site to Ulan Road and along Saddlers Creek Road. Through traffic would be maintained during works adjacent to Saddlers Creek Road as part of the traffic management plan required for works within the road reserve.
6. Potential Visual Impacts	
Visual impacts along Saddlers Creek Road resulting from proposed vegetation clearing and associated impacts on local tourism.	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. It should be noted that earth works and access to the northern dewatering site would take approximately eight weeks while construction of the boreholes at each dewatering site would take approximately eight to 12 weeks. Services will be buried along Saddlers Creek Road. As such, the potential visual impact, which would be greatest during the construction phase, would only be short-term and visual impacts of the Modification along Saddlers Creek Road are expected to be low. The ongoing visual impacts of the dewatering sites along Saddlers Creek Road during operations would be very low given the minor nature of the infrastructure at this location.
Matters that do not have the Potential to be Impacted by the Modification	
7. Potential Impacts to The Drip	
Proximity of dewatering sites to The Drip	The Modification would not change mine layout, extraction height or rate of production. As such, the Modification would not result in any additional potential impacts to The Drip or any other surrounding groundwater resources. The Modification would not involve any changes to the approved mining operations at UG4. Given this, the Modification would not result in any change to approved groundwater impacts
Monitoring and management of groundwater impacts at The Drip to maintain 'Nil Impact' requirement as specified in the Project Approval.	
Need for consideration of recent groundwater monitoring results and an independent expert review of predicted impacts.	
Potential impacts to the groundwater system and groundwater dependent ecosystems (e.g. The Drip) breaching the principles of ecologically sustainable development, intergenerational equity and the precautionary principle.	

Table 3 (Continued)
Response to Community Organisations and Public Submissions

Summary of Comment	MCO Response
8. Potential Impacts from Coal Extraction	
Increased greenhouse gas emissions and contribution to climate change impacts, and associated economic impacts to the community.	An assessment of potential greenhouse gas emissions is provided in Section 6.8.4 of the Modification Report. This concludes that any additional Scope 1 and 2 greenhouse gas emissions would be negligible. As the Modification does not involve any change in mining operations, there would be no change to approved coal production or previously assessed Scope 3 emissions.
Impacts on surrounding landforms due to subsidence.	The Modification would not involve any changes to the approved mining operations at UG4. Given this, the Modification would not result in any change to approved subsidence impacts.

3 CONCLUSION

Section 8.3 of the Modification Report described that approval of the proposed changes to the Moolarben Coal Complex is considered to be justified given:

- 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.

In consideration of the submissions received on the Modification Report, and the responses outlined in this Submissions Report, the Modification is considered to have merit.

4 REFERENCES

- Austroads (2017) *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings*.
- Department of Environment, Climate Change and Water (2010b) *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.
- Department of Planning, Infrastructure and Environment (2019) *Draft Guidance for State Significant Projects: Preparing a Submissions Report*.
- Department of Sustainability, Environment, Water, Population and Communities (2012) *EPBC Act Environmental Offsets Policy*.
- Hamm, G. (2006) *Moolarben Coal Project – Aboriginal Cultural Heritage Assessment Report*.
- Landcom (2004) *Managing Urban Stormwater – Soils and Construction Volume 1 and Volume 2A*.
- Niche Environment and Heritage Pty Ltd (2019) *Aboriginal Cultural Heritage Assessment - Moolarben Coal Operations UG4 Ancillary Works Modification NSW*.
- Office of Environment and Heritage (2011) *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*.
- SLR Consulting (2019) *Moolarben Coal Complex UG4 Ancillary Works Modification – Noise Review*.
- The Transport Planning Partnership (2019) *Moolarben Coal Complex UG4 Ancillary Works Modification – Road Transport Review*.
- Workcover (2005) *Storage and Handling of Dangerous Goods – Code of Practice 2005*.

APPENDIX A
SUBMISSIONS SUMMARY

Table A1
Submissions Summary

Submitter	Online ID	Location	Group	View	Matters that have the Potential to be Impacted by the Modification						Matters that do not have the Potential to be Impacted by the Modification	
					1. Goulburn River Water Quality	2. Existing Biodiversity Offset Area	3. Aboriginal Cultural Heritage Items	4. Noise	5. Traffic	6. Visual	7. The Drip	8. Coal Extraction
Name Withheld	571601	Balmain, New South Wales	Public	Objects								1
Derek Finter	571606	Mudgee, New South Wales	Public	Objects	1	1	1				1	1
Sharyn Munro	571611	Wingham, New South Wales	Public	Objects	1	1	1				1	
Sascha Ettinger	571616	Double Bay, New South Wales	Public	Objects	1	1	1				1	
Leslie Wand	571621	Blandford, New South Wales	Public	Objects	1	1	1				1	
Stephen Thatcher	571626	Muswellbrook, New South Wales	Public	Objects		1	1				1	
Jason Connor	571631	Adamstown Heights, New South Wales	Public	Objects	1	1	1				1	
Jean Ellis	571636	Goolma, New South Wales	Public	Objects	1	1	1				1	
Jennifer Haaring	571661	Cooks gap, New South Wales	Public	Comments				1	1		1	
Name Withheld	571666	Lindfield, New South Wales	Public	Objects	1	1	1				1	
Margaret Burnett	571676	Mudgee, New South Wales	Public	Objects								1
Julia Imrie	571686	Ulan, New South Wales	Public	Objects	1	1	1				1	1
Colin Imr ie	571691	Ulan, New South Wales	Public	Objects	1	1			1	1	1	1
Adair Imrie	571696	Ulan, New South Wales	Public	Objects	1						1	1
Jill Smith	571701	Woolgoolga, New South Wales	Public	Objects	1		1				1	
David Anderson	571706	Rozelle, New South Wales	Public	Objects	1	1	1				1	
Diane O'Mara	571711	Gulgong, New South Wales	Public	Objects	1	1	1				1	
Beverley Atkinson	571716	Scone, New South Wales	Public	Objects	1	1	1				1	
Robbin Binks	571726	Mudgee, New South Wales	Public	Objects	1	1	1				1	
Name Withheld	571731	Mudgee, New South Wales	Public	Objects	1		1				1	
Name Withheld	571736	Mudgee, New South Wales	Public	Objects	1		1				1	
Name Withheld	571747	Mudgee, New South Wales	Public	Objects								1
Elisabeth Brasseur	571756	Mudgee, New South Wales	Public	Objects	1	1	1				1	1
Lyndal Sullivan	571761	Katoomba, New South Wales	Public	Objects	1						1	1
Mudgee District Environment Group	571565	Mudgee, New South Wales	Community Organisation	Objects	1	1	1				1	1
Denman, Aberdeen, Muswellbrook and Scone Healthy Environment Group (DAMS HEG)	571671	Kayuga, New South Wales	Community Organisation	Objects		1					1	1
Mudgee Local Aboriginal Land Council	571721	Mudgee, New South Wales	Community Organisation	Objects	1	1	1				1	
Murong Gialinga Aboriginal and Torres Strait Islander Corporation	571746	Mudgee, New South Wales	Community Organisation	Objects	1	1	1				1	
Ibbai Waggan-Wiradjuri People	571746	Mudgee, New South Wales	Community Organisation	Objects			1					
Total					22	19	21	1	2	1	25	11

APPENDIX B

CONFIRMATION THAT BDAR LODGED WITH MODIFICATION REPORT WAS FINAL

Date: 13 November 2019

David Geering
Department of Planning, Industry & Environment – Biodiversity Conservation Division
Po Box 2111
Dubbo NSW 2830

Dear David,

Moolarben Coal complex Stage 1 (05_0117) – UG4 Ancillary Works Modification (05_0117 MOD 15)

This letter has been written to confirm that the *Moolarben Coal Complex UG4 Ancillary Works Modification Biodiversity Development Assessment Report* prepared by Eco Logical Australia Pty Ltd and dated 1 October 2019 was the final BDAR for the UG4 Modification.

The BDAR was prepared by Dr. Cheryl O'Dwyer who is an Accredited Person under the NSW *Biodiversity Conservation Act 2016* (BC Act) (BAAS18153). As required by clause 6.15 of the BC Act, the BDAR was prepared on the basis of the requirements of (and information provided under) the Biodiversity Assessment Method as at 1 October 2019.

Regards,



Dr. Cheryl O'Dwyer
Senior Ecologist
Eco Logical Australia Pty Ltd

APPENDIX C

ADDITIONAL ASSESSMENT OF UN-SURVEYED PORTION OF ACCESS TRACK

15 November 2019

Addendum to Aboriginal Cultural Heritage Assessment, Moolarben Coal Operations UG4 Ancillary Works Modification

Scope of works

Moolarben Coal commissioned Niche Environment and Heritage again to conduct a cultural heritage survey of the portion of dewatering bore pipeline, measuring approximately 0.5 hectares, that was not previously surveyed (Figure Addendum 1). The survey was to be conducted as per the requirements of the approved Moolarben Coal Complex Heritage Management Plan which includes the following commitment:

In locations with Aboriginal heritage potential where impacts are proposed that may involve significant ground disturbance (e.g. access roads, haul roads), but heritage survey sampling has not occurred to a level consistent with the OEH requirements, MCO will engage an appropriately qualified and experienced archaeologist to conduct a detailed archaeological survey and recording of those locations, in consultation with the RAPs, prior to any impacts occurring.

This letter reports on the results of the additional survey activity and should be read as an addendum to the Moolarben Coal Operations UG4 Ancillary Works Modification Aboriginal Cultural Heritage Assessment, prepared by Niche Environment and Heritage and dated 27 September 2019 ('the main report').

Investigators and contributors

The survey was conducted by:

- Tammy Peterson (Mudgee Local Aboriginal Land Council)
- Emma Syme (Moolarben Coal Operations), and
- Jamie Reeves (Niche Environment and Heritage).

This addendum to the main report was prepared by Jamie Reeves.

Survey context

As described in the main report there are no previously recorded Aboriginal cultural heritage sites in the vicinity of the area requiring additional survey (see Figure 7 of the main report). The additional survey was located adjacent to Survey Unit 14 of the main report. This area is a broad ridge crest in the Munghorn Plateau Soil Landscape, which comprises gently sloping hills and plateaux with skeletal, siliceous soils.

As described in the main report, the archaeological expectation for Munghorn Plateau Soil Landscape is that it may accumulate Aboriginal objects, but these will be sparse outside of rock shelters and in open contexts will not be preserved *in situ* in the skeletal and mobile siliceous sands which erode and displace readily.

Survey results

The cultural heritage survey was conducted on 31 October 2019. Consistent with the previous survey the sampling strategy involved surveying over the entirety of a larger area than the proposed project footprint with surveyors paying close attention to sensitive areas such as rock shelters or areas of ground exposure.

Most of the surveyed area was identical to Survey Unit 14 as described in the main report being shallow, skeletal siliceous soils on gently undulating slopes. Archaeological visibility was generally poor, and archaeological exposure was limited in the ironbark and pine woodlands (Plate Addendum 1). A small low-lying area of deep, gritty white sand with eucalypt woodland was traversed during the survey. This area presented relatively better visibility and exposure than the surrounding slopes. The gritty white sands in this area are poorly consolidated and poorly drained and are interpreted to be *in situ* weathered bedrock (Plate Addendum 2).



Plate Addendum 1. Typical survey conditions in pine and ironbark woodland

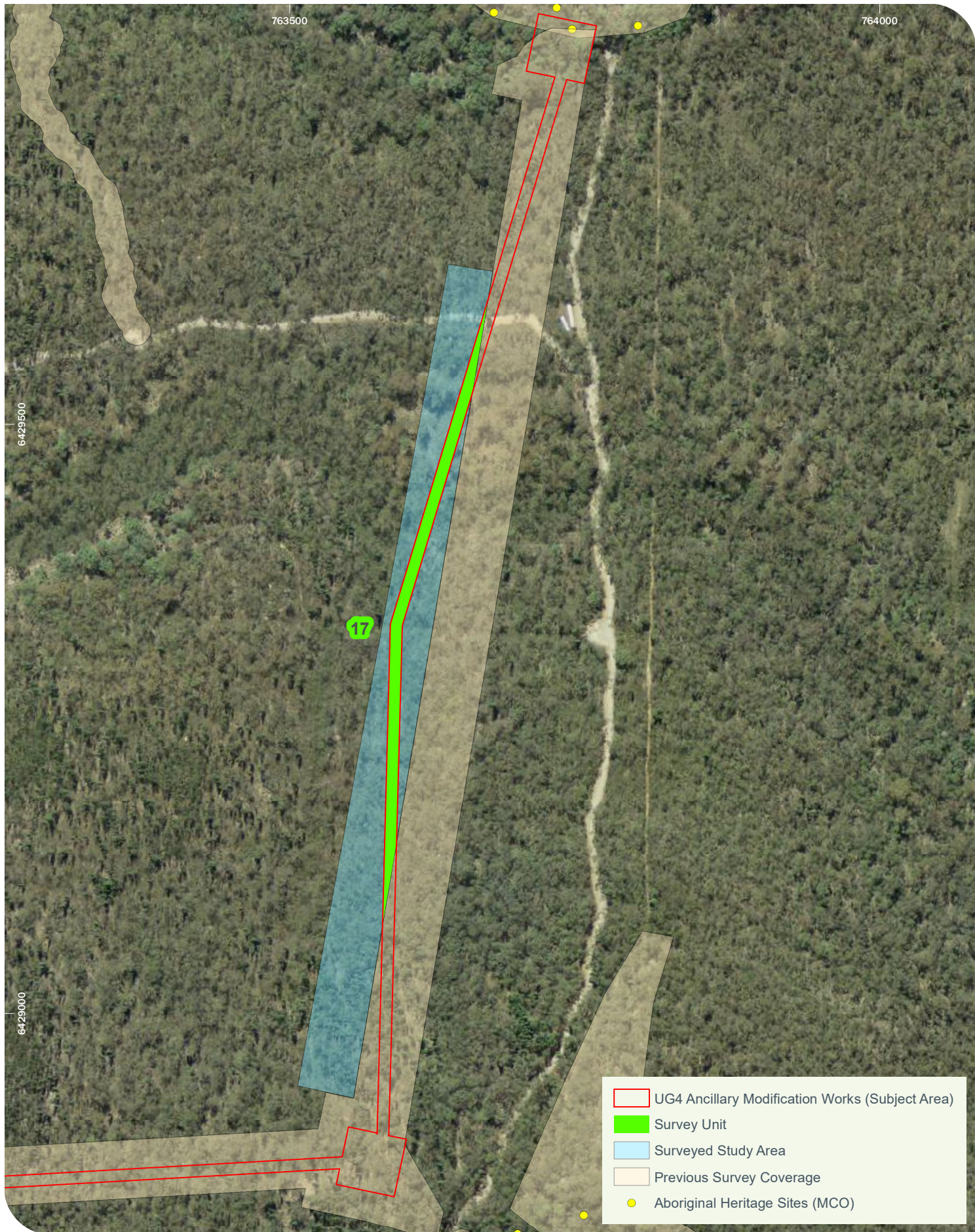


Plate Addendum 2. Survey conditions sandy eucalypt woodland patch

The survey sampling results are described in Table Addendum 1 (note only the project footprint is described in the evaluation of survey coverage) and presented in Figure Addendum 1.

Table Addendum 1. Survey coverage results

Survey Unit	Landform	Survey Unit Area (ha)	Visibility	Exposure	Effective Coverage Area (ha)	Effective Coverage Area %
17	Crest	0.47	10%	10%	<0.01	1%



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No Wiradjuri cultural heritage sites or areas of potential were discovered during the survey. This is consistent with the expectations for the broad rolling hills areas of the Munghorn Plateau Soil Landscape, and consistent with the results described in the main report. Table Addendum 2 provides an updated landform summary for the overall assessment incorporating the results of the additional survey.

Table Addendum 2. Landform summary – sampled areas

Landform	Survey Unit Area (ha)	Effective Coverage Area (ha)	% of landform effectively surveyed	Number of sites	Number of artefacts
Crest	3.13	0.05	1.59%	1	1
Flat	1.98	0.36	18.09%	1	25
Lower Slope	4.47	0.28	6.23%	2	6
Mid Slope	0.55	0.01	2.00%	-	-
Open Depression	0.49	<0.01	0.50%	-	-
Upper Slope	0.20	0.01	6.00%	-	-
Total:	10.82	0.71	6.52%	4	32

Conclusion

In accordance with the Moolarben Coal Heritage Management Plan additional cultural heritage survey of the proposed Moolarben Coal Operations UG4 Ancillary Works Modification footprint was conducted on 31 October 2019. The cultural heritage survey did not find any Wiradjuri cultural heritage sites, and the results were consistent with the previous survey conducted and described in the main report.

The recommendations stated in the main report suffice for the additional area assessed and therefore remain unchanged.

Yours sincerely,



Jamie Reeves
Archaeologist
Niche Environment and Heritage