



LIDDELL COAL OPERATIONS

MODIFICATION 7

Response to Submissions

for

Liddell Coal Operations Pty Limited

November 2018

LIDDELL COAL OPERATIONS MODIFICATION 7

RESPONSE TO SUBMISSIONS

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November 2018

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1 INTRODUCTION

This section provides a background to the Modification and explains the purpose of this Response to Submissions (RTS) document.

1.1 BACKGROUND

Liddell Coal Operations Pty Limited operates the Liddell Coal Operations (LCO) in the Upper Hunter region of New South Wales (NSW). LCO is located at Ravensworth directly east of Lake Liddell, approximately 25 kilometres (km) north west of Singleton, and 26 km south east of Muswellbrook. Liddell Coal Operations Pty Limited is a wholly owned subsidiary of Glencore Coal Pty Limited (Glencore) and manages LCO on behalf of a joint venture between Glencore (67.5%) and Mitsui Matsushima Australia (32.5%).

LCO operates in accordance with Development Consent (DA) 305-11-01 granted under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). DA 305-11-01 was granted on 20 November 2002 and has been modified on six occasions with the most recent modifications (Modifications 5 and 6) being made under the former Section 75W of the EP&A Act (pursuant to the former clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation)). DA 305-11-01 (as modified) enables mining operations to be undertaken until 31 December 2028.

The Modification seeks adjustments to the DA Boundary (as shown on **Figure 1**) to facilitate remediation works on a portion of the Mountain Block Offset Area in accordance with the approved Biodiversity Offset Management Plan (BOMP) (Liddell Coal Operations Pty Limited, 2017). The Modification also seeks administrative amendments to DA 305-11-01 to improve operational efficiency and flexibility in the final years of mining operations to facilitate an optimal final landform whilst ensuring compliance with the site's rehabilitation objectives. A brief description of the Modification is provided in Section 1.2.

Liddell Coal Operations Pty Limited is seeking minor amendments to DA 305-11-01 under the former Section 75W of the EP&A Act. The application was supported by the Liddell Coal Operations Modification 7 Environmental Assessment (Hansen Bailey, 2018) (EA). The EA was placed on public exhibition from 30 August to 13 September 2018. During the public exhibition period, a total of five submissions were received by the Department of Planning and Environment (DPE) from regulatory authorities. A submission from the NSW Office of Environment and Heritage (OEH) was received from DPE on the 18 September 2018. No public or community submissions were received by DPE. This document provides responses to each submission received on the Modification application and EA document. A copy of each submission is provided in **Appendix A**.



LIDDELL COAL OPERATIONS

Modification Overview

FIGURE 1

1.2 OVERVIEW OF MODIFICATION

The Modification includes the following components:

- Minor amendments to the DA Boundary / Project Area (refer to **Figure 1**) to incorporate a portion of the Mountain Block Offset Area to facilitate required remediation works in accordance with the approved BOMP;
- Minor amendment to conditions of DA 305-11-01 to provide the necessary flexibility for mining operations and the associated final landform outcomes to meet the site's rehabilitation objectives;
- Minor amendment to Table 8 of Schedule 3, Condition 37 of DA 305-11-01 to reflect areas available for mine rehabilitation to grassland; and
- Administrative amendments to Schedule 2, Condition 2, and Schedule 3, Conditions 16 and 29 of DA 305-11-01.

1.3 OVERVIEW OF SUBMISSIONS

Submissions were received from the following regulatory authorities:

- Department of Planning & Environment – Division of Resources and Geoscience (DRG);
- Department of Industry (DoI);
- NSW Environment Protection Authority (EPA);
- Muswellbrook Shire Council (MSC);
- Department of Planning & Environment – Resources Regulator (Resources Regulator); and
- OEH.

1.4 STAKEHOLDER ENGAGEMENT

Table 1 outlines the stakeholder consultation undertaken since the submission of the EA on the 21 August 2018. Section 6.1 of the EA provides an account of the stakeholder consultation undertaken in relation to the Modification throughout the preparation of the EA.

Table 1
Stakeholder Engagement Consultation

Stakeholder	Method of Consultation	Items Discussed
Regulatory Stakeholders		
Singleton Shire Council	Meeting held 28 August 2018	Description of the Modification and EA findings
MSC	Meeting held 29 August 2018	Description of the Modification and EA findings
DPE	Various	Status and progress of the RTS document.
DRG	Phone conference meeting held 9 October 2018	Discussion regarding DRG's submission on the proposed Modification and approach to responding.
Resources Regulator	Meeting held 15 October 2018	Discussion regarding Resources Regulator's submission on the proposed Modification and approach to responding.
OEH	Phone calls	Offer of briefing to the Modification
EPA	Phone calls Briefing presentation sent to EPA on 15 June 2018	Offer of briefing to the Modification

1.5 DOCUMENT PURPOSE AND STRUCTURE

This RTS document has been prepared to address the issues raised in submissions from regulatory authorities. The information provided in this RTS supplements the EA which has been prepared for the Modification.

This RTS is structured as follows:

- **Section 2** responds to the issues raised in submissions from regulatory authorities;
- **Section 3** provides a conclusion to the RTS; and
- **Sections 4 and 5** defines abbreviations and lists references used in this document.

2 RESPONSES TO SUBMISSIONS

This section responds to the issues raised in the submissions from regulatory authorities.

2.1 DRG

2.1.1 Sterilisation of Mineral Resources

Issue

“The Division requests that the Geological Survey of NSW – Land Use team be consulted in relation to any additional biodiversity measures, should they be required, to ensure there is no consequent reduction in access to prospective land for mineral exploration, potential for sterilisation of mineral or extractive resources.”

Response

The LCO biodiversity offset areas, including the Mountain Block and Bowmans Creek Riparian Corridor Offset Areas are located within a cluster of land held by Glencore for biodiversity offset purposes. These offset properties have been established to compensate the approved biodiversity impacts of Glencore owned mining operations including LCO and the neighbouring Ravensworth Operations and Mount Owen Complex.

As outlined within 8.1.4 of the EA, the 5.86 hectares (ha) of surplus land within the Mountain Block and Bowmans Creek offset areas (beyond that stipulated under DA 305-11-01 as identified following detailed land survey) will be utilised to compensate for the minor short term impacts to approximately 1 ha of non-threatened native vegetation. Accordingly, the Modification is not seeking additional offset areas beyond the boundary of those previously set aside for biodiversity offset purposes. Therefore, the Modification will not result in any sterilisation of land for mineral exploration or resource extraction.

LCOs discussions with a representative of DRG on 9 October 2018 confirmed that the submission was relating to any additional biodiversity offset measures beyond that described within the EA. LCO will consult with DRG in the unexpected event that additional biodiversity offset measures are required.

2.2 DoI

Issue

“As there is no additional impacts in terms of enlarged footprint, etc, we have no comments.”

Response

Noted.

2.3 EPA

2.3.1 Noise Impacts on Sensitive Receivers

Issue

“The EPA requires the proponent to provide an updated acoustic report that suitably calculates and models the likely noise impacts to residential receivers.

The Acoustic Report prepared by Global Acoustics at Appendix F of the EA states ‘it is unlikely to be any increase in impacts to the community’; however, this appears to be based on assumptions and not modelling despite the proposed activities being closer to receivers. While the EPA acknowledges that the proposed modification is relatively minor in the context of the operations undertaken at the Liddell Coal Mine in totality, the EPA requires a suitable assessment to fully assess the noise impacts from the proposal.”

Response

LCO commissioned Global Acoustics to respond to EPA’s submission by preparing a representative noise model for the proposed remediation works within the Mountain Block Offset Area. The Global Acoustics technical report is provided in **Appendix B**.

The closest sensitive receivers to the proposed remediation works within the Mountain Block Offset Area include R01 and R04, to the east of the proposed works. These receivers were the basis of the noise impact assessment included in Appendix F of the EA, which determined the proposed activities would provide a low risk of noise impacts.

Global Acoustics developed a model consistent with that used within the noise impact assessment for Modification 5 to DA 305-11-01. The 2018 noise modelling scenario (from Modification 5) was used to confirm the potential for cumulative impacts with the currently approved mining operations. It is important to note the current production rates and fleet numbers currently utilised at LCO are generally lower than what that assumed for the 2018 noise model scenario in the Modification 5, thus these results will be conservative.

Global Acoustics modelling confirmed that the proposed remediation works within the Mountain Block Offset Area would not result in noise levels greater than the relevant noise criteria. Further, cumulative noise impacts of the proposed remediation works with LCO’s approved mining operations will continue to comply with the relevant criteria.

As outlined within Section 8.3.4 of the EA, LCO will continue to monitor and manage noise impacts in accordance with the approved Noise Monitoring Program and comply with noise criteria specified within DA 305-11-01.

2.3.2 Project Specific Noise Levels

Issue

“Thorough assessment of the proposed modification is particularly important because the 2013 assessment for Modification 5 for DA 305-11-01 indicated that noise from Liddell Coal Mine is anticipated to increase in mid-2018. The EPA’s submission on to the then Department of Planning and Infrastructure advised that the noise assessment for that modification predicted exceedances of the Project Specific Noise Levels that must be addressed by the proponent in accordance with Chapters 8 and 9 of the Industrial Noise Policy.”

Response

LCO note the need to comply with the Industrial Noise Policy (INP) and the current Development Consent.

Modification 5 to DA 305-11-01 identified the potential for minor exceedances of up to 1 decibel (dB) during the day period. A change in noise level of 2 dB is generally not detectable by the human ear for steady state noise sources (Global Acoustics, 2013). Within this report only two sensitive receivers have been predicted to experience minor exceedances (up to 1 dB) during project year 5 (2018-2019).

It is also important to note that the minor noise exceedances predicted in Modification 5 would only occur under worst case conditions. The worst-case scenario included all equipment operating at exposed elevated levels at maximum sound power both continuously and simultaneously. The worst case operating scenario would also need to coincide with worst case meteorological conditions to produce the predicted maximum noise level. Therefore, the predicted exceedance is very unlikely to occur.

Global Acoustics noise modelling (see **Appendix B**) demonstrates that the proposed remediation works will produce insignificant noise levels in the context of the approved mining operations at LCO in terms of both quantity of equipment and sound power levels.

Noise impacts associated with the proposed remediation works will be monitored and managed in accordance with the approved Noise Monitoring Program and comply with noise criteria specified within DA 305-11-01.

2.3.3 Air Quality

Issue

“Air quality impacts can be managed through existing licence conditions, and there are unlikely to be any increase in impacts to the community.”

The guiding principle for particulate matter management is to adopt all feasible and reasonable best practice mitigation measures. The EA proposes to manage dust emissions by minimising the areas of exposed earth open at any one time with smaller targeted areas exposed and rehabilitated before moving on. Mitigation also includes many measures contained within the Air Quality Management and Monitoring Plan including identification of access roads, vehicle speeds, maintenance of equipment, water carts for dust suppression, stockpile management and progressive rehabilitation.”

Response

Noted. LCO will continue to manage air quality impacts in accordance with the measures described within the approved Air Quality Management and Monitoring Plan. The proposed remediation works are also flexible in nature and can be conducted when conditions are favourable, thereby allowing LCO to further manage potential air quality impacts.

2.4 MUSWELLBROOK SHIRE COUNCIL

2.4.1 Ecological Disturbance

Issue

“Council notes that the modification seeks approval for disturbance that has already occurred, plus some additional areas of disturbance. The Environmental Assessment for the modification downplays the impact this previous disturbance has had on the ecology of the area, with no attempt to quantify the habitat that once occurred in the disturbed area.”

Response

The Modification seeks approval for the proposed remediation works within the Mountain Block Offset Area which will disturb approximately 3.5 ha of land, of which 2.5 ha is previously disturbed land with little to no biodiversity value. It is important to note that the disturbed nature of this area is due to previous rehabilitation attempts to repair landform instability associated with adjacent historic mining activities.

After considerable planning and design work in close consultation with the Resources Regulator and DPE, LCO has established an appropriate plan to remediate the landform instabilities within this area. LCO is subsequently seeking approval under the current regulatory regime to remediate this area to achieve a stable and self-sustaining landform that meets the objectives of the Mountain Block Offset Area. The remediation works will entail the reshaping of the landform to a stable state and establishing native vegetation communities. These works will lead to significant improvements in the biodiversity value of this area within the Mountain Block Offset Area.

2.4.2 Rehabilitation and Future Land Use

Issue

“As a heavily mining affected Local Government Area, Council has an interest in ensuring that former mine sites are rehabilitated to high standards, in line with industry best practice and to support future land uses.”

Response

Noted. LCO is fully committed to rehabilitating its mined land in accordance with requirements of DA 305–11-01. As discussed in Section 8.1.4 in the EA, Liddell Coal Operations Pty Limited currently manages the potential impacts to ecological values through the implementation of its approved:

- Biodiversity Management Plan;
- BOMP; and
- Rehabilitation Strategy (outlined within the Mining Operational Plan (MOP)).

All management plans have been developed in consultation with the regulatory stakeholders and created to ensure best practice rehabilitation is implemented which would enhance and cultivate future land uses.

As such, the sites rehabilitation activities will continue to be managed generally in accordance with the existing Environmental Management Plans, which will be reviewed and updated as required.

2.4.3 Extension of DA Boundary

Issue

“Council raises no objection to the principle of expanding the DA Boundary to account for improved rehabilitation outcomes provided steps are taken to ensure no further encroachment into the Mountain Block Offset Area occurs in the future.”

Response

Noted. LCO is seeking to establish a stable and self-sustaining landform through the proposed remediation activities and associated revegetation works. Extensive planning (including soil testing, materials testing and landform evolution modelling) has taken place prior to preparing the EA in order to create a works program which minimises the extent of disturbance whilst developing a landform design which will achieve a stable and self-sustaining landform.

LCO will ensure that disturbance associated with the proposed remediation works will remain within those areas assessed within the EA.

2.4.4 Mine Operational Footprint

Issue

“1. Identification of the mine operational footprint required to achieve the objective of the modification.

Council is concerned that insufficient consideration has been carried out in relation to the works within the expanded operational footprint required to achieve the rehabilitation outcomes that inform the need for this modification. If inadequate investigation has been carried out to identify the rehabilitation required within the proposed project boundary, the Department, proponent and Council cannot be certain that this modification will achieve its rehabilitation objectives. Should the proposed modification be approved and it eventuate that the proponent remained unable to achieve rehabilitation outcomes intended to be facilitated by this modification, a further modification to the DA consent and/or project boundary may be required.

The lodgement of additional modifications for this purpose of achieving the outcomes intended to be achieved by this modification would suggest an unconsidered piece-meal approach to the development assessment process. This would not be in the interest of the Department, proponent, Council or other stakeholders in the project. Accordingly, Council submits that the Department should satisfy itself that the expanded footprint will be sufficient to encompass all stabilisation and rehabilitation works required to enable the proponent to achieve the final rehabilitation outcomes for the Mountain Block Offset portion of the site.”

Response

Considerable planning in relation to the design of the stabilisation of the landform has been undertaken for the Mountain Block Offset Area. This has entailed soil sampling and analysis to understand the materials being utilised as a growth medium and to identify any amelioration required. Landform evolution modelling and design has also been undertaken with consideration of the heavily undulating land within this area. Through application of best practice landform rehabilitation design and consultation with key regulators (including Resources Regulator and DPE), LCO is confident that the proposed remediation works will be managed within the proposed disturbance boundary assessed within the EA.

In addition to meeting the requirements specified within DA 305-11-01, the proposed remediation activities will be undertaken in accordance with the relevant LCO Environmental Management Plans which will be reviewed and updated as required so that potential impacts on the environment are appropriately monitored, mitigated and managed.

2.4.5 Disturbance Outside of Operation Footprint

Issue

“2. Limitation to work carried out outside expanded operation footprint.

It is understood that the proposed development would involve the disturbance of previously undisturbed land held as a biodiversity offset. The application has been accompanied by an Ecological Assessment which considers the ecological impacts associated with the expansion of the project’s operational footprint.

The study area for this assessment reflects the proposed extended development boundary and assumes that disturbance will not be caused outside of the new proposed area. In this view, the Department should impose conditions on any approval to ensure rehabilitation work in the extended project area does not cause disturbance to the Mountain Block Offset area outside the modified project boundary. An effective way to manage this would be by requiring vehicles working on the rehabilitation, within the extended project area, to carry GIS tracking software to monitor their location and identify, record and report on any transgression to the project boundary.

Given the limited information prepared regarding the intended rehabilitation work, it is difficult to identify the likelihood of vehicles associated with this operation leaving the project boundary and thereby causing disturbances to ecological communities. The imposition of a condition requiring the GIS monitoring of vehicles operating at the site would be an effective measure to ensure operations are limited to the approved project area and manage the potential for disturbance to be caused to native flora and fauna in the Mountain Block Offset area outside the development boundary.”

Response

The Proposed Disturbance Boundary for rehabilitation works as presented in the EA reflects the area which will be subject to disturbance activities. Disturbance for the works presented in the Modification will not occur outside the Proposed Disturbance Boundary. The Disturbance Boundary has been identified through careful planning based on landform design developed in conjunction with landform evolution modelling.

Section 2.3.4 of the current approved MOP stipulates the current procedures necessary before any site disturbance can take place at LCO. A number of other protocols listed within the MOP are in place for LCO employees and contractors to ensure all disturbance boundaries are adhered to. This includes ensuring the approved disturbed boundary is appropriately marked out with pegs and high visibility flagging tape to ensure any employee or contractor does not disturb land outside the approved limits.

LCO also has a Ground Disturbance Permit which has triggers in place that require the Environment and Community Department to determine potential impacts prior to any ground disturbance. This process informs whether the work is approved and whether any controls are required to be implemented prior to or during proposed works to prevent or manage likely impacts.

LCO do not believe it is necessary to propose the use of GIS monitoring of vehicles when strict contemporary protocols are already in place within LCO's approved Environmental Management Plans.

2.4.6 Weed Management

Issue

"3. Weed management and minimisation of impact on adjoining offset area.

As the proposed modification would expand the project area to encompass a previously undisturbed offset area, Council is interested in ensuring disturbances to areas of ecological significance outside the project area are minimised.

Council recommends the Department impose conditions that require the proponent to take reasonable steps to minimise ecological disturbances within the expanded project boundary.

Of particular concern in relation to this matter is the possible spread of weeds into the expanded project area and adjacent the biodiversity offset area, as a result of the proposed rehabilitation works in the expanded operation footprint. Accordingly, Council requests that if the modification is approved the proponent be required to prepare and implement a weed management program for the modified site operations. Any such program should include requirements for the monitoring, control and eradication of invasive weeds both within the expanded project area and the neighbouring Mountain Block Offset."

Response

LCO has obligations under its approved BOMP and Biodiversity Management Plan to conduct weed control and management practices within their classified offset areas, which will continue to be relevant to the Modification.

LCO's management plans specify the requirement for weed inspections of the Mountain Block offset area every four months. Weed control will continue to be conducted in accordance with current LCO's existing management practices.

2.4.7 Modification to Consent Conditions

Issue

“4. Modification to consent conditions

In addition to the alteration of the project boundary the proposed modification seeks amendment to conditions of consent relating to the mine rehabilitation.

The Environmental Assessment indicates that the changes to consent conditions proposed are predominately administrative and are to allow a level of flexibility with the sites final rehabilitation.

Prior to granting consent to the modification of the conditions of consent the Department should satisfy itself that changes to conditions are necessary and will not negatively affect the final rehabilitation outcomes for the project.”

Response

Liddell Coal Operations Pty Limited seeks some minor amendments to Schedule 3, Condition 37 (and Table 8) of DA 305-11-01 to allow for the consistency of the conditions whilst providing the flexibility required to establish a final landform which best complies with the rehabilitation objectives for the site. The amendment proposed does not modify the intent of the conditions to establish the Final Landform generally consistent with that indicatively illustrated within Appendix 3 of DA 305-11-01 nor does it seek to materially change the established rehabilitation objectives for LCO.

Schedule 3, Condition 37 of DA 305-11-01 states LCO *“must comply with the objectives in Table 8 and be consistent with the final landform shown in Appendix 3.”* However, rehabilitation objectives listed in Table 8 require LCO to minimise to the greatest extent practicable the size and depth of the final voids. There is a level of contradiction within Schedule 3, Condition 37 of DA 305-11-01, as to maintain statutory compliance the final landform must be consistent with the final landform conceptually shown in Appendix 3 of DA 305-11-01. However, with one of the rehabilitation objectives being to minimise the final void as much as possible, this improvement to the final landform would make it inconsistent with what is currently portrayed in Appendix 3 of DA 305-11-01.

Liddell Coal Operations Pty Limited is also seeking to amend Table 8 of Schedule 3, Condition 37 of DA 305-11-01 to allow for all remaining disturbed areas (after 731 ha of Central Hunter Box – Ironbark Woodland has been allocated) to be reinstated as open grassland (suitable for grazing) with pockets of native vegetation. This is estimated to be approximately 1,000 ha.

2.4.8 Rehabilitation

Issue

“Finally, and in addition to the above, Council would like to take this opportunity to reinforce that it has a keen interest in ensuring the best possible rehabilitation outcomes for mine affected land within the Local Government Area. Council expects to be consulted in relation to any alterations to rehabilitation management plans that may occur as an outcome of this modification application and requests that such plans are prepared to address consent requirements and ensure the best possible environmental and social outcomes for the community. To achieve this objection, Council requests that any rehabilitation strategy sets out a rehabilitation program for the site through application of micro relief to the site which incorporates geofluv principles.”

Response

Schedule 3, Condition 39 of DA 305–11–01 currently specifies the requirement for LCO to prepare a Rehabilitation Management Plan (RMP) for the site in consultation with key regulatory authorities (including MSC) and to the satisfaction of DRG (and/or the Resources Regulator).

The currently approved RMP outlines the methods and processes for the final rehabilitation activities to achieve the rehabilitation objectives, including the development of micro relief into the final landform design.

It is important to note that Geofluv (as referred to in MSC’s submission) is proprietary software and is not the only method capable of designing a landform with micro-relief. Whilst this proprietary software may be utilised by LCO, this may be in conjunction with or separate to other alternative methods used across the mining industry in recent times.

2.5 RESOURCES REGULATOR

2.5.1 Rehabilitation Requirements

Issue

“The Resources Regulator advises DPE – Resources & Assessment that the Environmental Assessment has adequately addressed the issues relating to the Mountain Block project however did not adequately address and justify the proposed modification to final landform nor outlined specific rehabilitation requirements given that closure forecast to be finalised by 2023.”

Response

LCO is not seeking to amend the final landform as illustrated in Appendix 3 of DA 305-11-01 nor is it seeking to amend the overall rehabilitation objectives in Table 8 of DA 305-11-01. The proposed modification seeks administrative changes to the conditions to allow for consistency in the conditions, whilst also providing the flexibility required to establish a cost effective, practical and environmentally stable final landform which achieves the specified rehabilitation objectives for the site.

In light of the above, the only potential for additional environmental impacts is relation to the Modification are the proposed remediation works within the Mountain Block Offset Area. Given the minor and administrative nature of the changes sought to DA 305-11-01, these components are not expected to result in additional environmental implication beyond those previously assessed for LCO. Accordingly, the final landform (and associated environmental impacts) developed for LCO will be in accordance with that currently approved under DA 305-11-01. This was discussed with the Resources Regulator during a meeting on the 15 October 2018.

2.5.2 Final Landform

Issue

“Additional information is required to demonstrate that sustainable rehabilitation outcomes can be achieved as a result of the project. The required additional information is as outlined below.

An updated Final Landform Plan that reflects changes to operations, including revised mine plans. This plan should reflect the areas to be returned to Central Hunter Box-Ironbark Woodland and open grassland suitable for grazing use.”

Response

As mentioned earlier, this Modification is not seeking approval to develop a final landform that differs from that currently illustrated within DA 305-11-01. This Modification is also not seeking approval for a revised mine plan from that approved under DA 305-11-01.

The minor operational and administrative amendments sought by this Modification seek the flexibility to develop a final landform which complies with the rehabilitation objectives for the site. During a meeting with the Resources Regulator on the 15 October 2018, it was determined that any minor operational changes to the mine plan can be dealt with under the RMP/MOP process. This process will need to demonstrate the proposed mining operations are generally in accordance with the approved mine plans under DA 305-11-01.

2.5.3 Final Rehabilitation

Issue

“An updated mine layout and scheduling plan, maximising opportunities for progressive final rehabilitation. A description of the key assumptions (e.g. ROM production; overburden handled etc.) that were used to define the schedule is to be provided and mapped against the mine layout sequence. The objective being to provide the basis to determine that progressive rehabilitation has been undertaken as far as reasonably practical at any given point in time.”

Response

As explained in **Section 2.5.2**, this Modification is not seeking to modify the currently approved mine plans for LCO; nor the conceptual final landform design shown in Appendix 3 of DA 305-11-01.

It is anticipated that further detail and clarification on the mine plans leading into the final years of mining operations will be included within the next version of the MOP (or RMP) for the site.

2.5.4 Rehabilitation Outcomes

Issue

“More specificity in regards to rehabilitation outcomes for areas proposed to be rehabilitated to ‘areas of open grassland (suitable for grazing use) with pockets of native vegetation’. For example, additional information is required to define ‘native vegetation’ and whether this vegetation will be consistent with surrounding ecological communities etc.”

Response

The use of the term ‘areas of open grassland (suitable for grazing use) with pockets of native vegetation’ is to ensure consistency with Conceptual Final Landform Plan currently shown in Appendix 3 of DA 305-11-01.

The ‘pockets of native vegetation’ within this term is generally referring to existing remnant vegetation which occurs outside of the mine disturbance areas which will continue to be maintained.

Consistent with this objective, Section 3.3.7 of the current MOP and Section 4.10 of the current Biodiversity Management Plan (BMP) state any remnant vegetation and soils outside the disturbance areas must be protected and maintained. Management strategies to achieve this objective are listed in the BMP and include management of grazing impacts, weeds and encouragement of natural regeneration.

As the ‘pockets of native vegetation’ are generally referring to existing vegetation, this vegetation will be entirely consistent with surrounding ecological communities.

Further to the above, it is also possible that various shade trees and fence line plantings may also be established within the ‘areas of open grassland (suitable for grazing use) with pockets of native vegetation’ areas in association with sustainable grazing activities on the final landform. Species utilised for this purpose will be consistent with recommended native woodland species list provided in Appendix B of the approved BMP and the MOP.

2.6 OEH

2.6.1 Biodiversity

Issue

Recommendation 1

“OEH is satisfied with the proposed offset package for this modification.”

Response

Noted.

2.6.2 Reduction in Grassland

Issue

Recommendation 2

“OEH is satisfied with the proposed reduction in post-mine rehabilitation to ‘grassland suitable for grazing use.’”

Response

Noted.

2.6.3 Administrative Amendments

Issue

Recommendation 3

“OEH has no comment on the proposed changes to Condition 2 of schedule 2, or Conditions 16 and 39 of Schedule 3, as they are outside OEH’s expertise.”

Response

Noted.

2.6.4 Aboriginal Cultural Heritage Consultation

Issue

Recommendation 4

“Consultation with the registered Aboriginal parties must be maintained in the ongoing management of the Aboriginal cultural heritage values at Liddell Coal Operations.”

Response

LCO understand its commitment to ongoing consultation with the Registered Aboriginal Parties (RAPs). Specific consultation will be undertaken in accordance with the *Aboriginal Cultural Heritage Consultation Requirements* (DECCW, 2010). LCO’s Aboriginal Cultural Heritage Management Plan contains the most recent consultation records with the RAPs. Following any consultation with RAPs, LCO are to submit the revised Aboriginal Cultural Heritage Management Plan (ACHMP) to OEH for comment and subsequently DPE for approval.

LCO would also note that during consultation with the RAPs for the Modification, a representative of the Plains Clan of the Wonnarua People (PCWP) indicated that they were not willing to attend the scheduled consultation meeting with other RAPs present, noting that in their view other RAPs did not have authorisation to support or give consent to destruction of traditional lands within the registered Native Title Claim Area. LCO has made a standing offer to meet with the PCWP separately to discuss the Modification. At this point in time this has not been accepted. As stated above LCO will continue to provide opportunity to meet with the PCWP during the development of a revised ACHMP.

2.6.5 Aboriginal Cultural Heritage Management Plan

Issue

Recommendation 5

“The existing Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations (2018) must be updated to show the MOD 7 consent boundary.”

Response

Noted. Liddell Coal Operations Pty Limited will have all relevant management plans updated to include Modification 7 boundary changes, including the Aboriginal Cultural Heritage Management Plan. LCO will ensure these updates are completed following the approval of the Modification.

2.6.6 Unexpected Finds

Issue

Recommendation 6

“The Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations must include a protocol for the management of unexpected finds with the MOD 7 consent boundary.”

Response

Noted. Section 6.2 of the currently approved Aboriginal Cultural Heritage Management Plan provides the protocol in place for the management of any unexpected finds. Liddell Coal Operations Pty Limited will ensure all relevant management plans will be updated to include Modification 7 boundary changes on approval of the Modification.

2.6.7 Human Remains

Issue

Recommendation 7

“The Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations must include a protocol for the management of any human remains uncovered in the MOD 7 consent boundary.”

Response

Noted. Section 6.2.3 of the currently approved Aboriginal Cultural Heritage Management Plan provides the protocol in place for the management of any human skeletal remains exposed within LCO or in association with works being done on behalf of LCO. Liddell Coal Operations Pty Limited will ensure all relevant management plans will be updated to include Modification 7 boundary changes following approval of the Modification.

2.6.8 Modification Assessment Area

Issue

Recommendation 8

“No ground disturbance from MOD 7 works are to occur outside of the area assessed for the modification.”

Response

Noted.

As discussed in **Section 2.4.5**, the disturbance boundary for the proposed remediation works as presented in the EA reflects the area which is subject to disturbance activities. Disturbance for the works presented in Modification 7 will not occur outside the Proposed Disturbance Boundary. The Disturbance Boundary has been identified through careful planning based on landform design developed in conjunction with landform evolution modelling. All activities will be conducted under the MOP and relevant environmental management plans which provides the framework to ensure no disturbance occurs outside the approved areas.

2.6.9 Flood Impacts from Amendments to the DA Boundary

Issue

Recommendation 9

“OEH recommends that any works in the area included in the area for DA boundary amendment must not adversely affect flood characteristics on privately owned properties, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).”

Response

LCO commissioned Hydro Engineering & Consulting (HEC) to provide a response to OEH's request for flood modelling as a result of the proposed remediation works. This response is provided in **Appendix C**.

HEC identified that the proposed remediation works will not materially alter the catchment areas within Mountain Block Offset Area which feed the Bowmans Creek to the west. Accordingly, no changes to flooding are expected.

As described in Section 8.4.3 of the EA, Liddell Coal Operations Pty Ltd will continue to manage any potential impacts to water resources through the implementation of the approved Water Management Plan.

2.6.10 Flood Impacts from Site Rehabilitation

Issue

Recommendation 10

“OEH recommends that any changes to the Conceptual Final Landform must not adversely affect flood characteristics on privately owned properties, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).”

Response

As explained in **Section 2.5.2**, this Modification is not seeking to modify the approved mine plans previously assessed under DA 305-11-01, nor is it proposing any changes to the conceptual final landform design. Further detail on the mine plans leading into the final years of mining will be included in the next MOP (RMP).

The environmental impacts of the Conceptual Final Landform at LCO, including consideration of flood impacts has previously been assessed as part of Modification 5 to DA 305-11-01. The flood assessment provided within Appendix K of the MOD 5 EA predicted that flood levels (for 100 year and 250 year peak flood events) are well below the approved mining areas and will therefore not impact flooding within the adjacent Bayswater and Bowmans Creeks.

Therefore, given that the Modification is not seeking to modify the approved mine plans for LCO, the Modification will not result in impacts to flood characteristics from that previously approved under DA 305-11-01.

3 CONCLUSION

We trust this document addresses the issues raised by regulatory authorities in relation to the proposed Modifications to DA 305-11-01.

Should you have any queries in relation to this letter, please contact us on 02 6575 2000.

For

HANSEN BAILEY



Nathan Cooper
Principal



James Bailey
Director

4 ABBREVIATIONS

Term	Definition
ACHMP	Aboriginal Cultural Heritage Management Plan
BOMP	Biodiversity Offset Management Plan
DA	Development Consent
DA 305-11-01	Liddell Coal Operations Development Consent
dB	Decibel
Dol	Department of Industry
DPE	Department of Planning & Environment
DRG	Department of Planning & Environment – Division of Resources and Geoscience
EA	Liddell Coal Operations Modification 7 Environmental Assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPA	NSW Environment Protection Authority
Glencore	Glencore Coal Pty Limited
ha	Hectares
HEC	Hydro Engineering & Consulting
INP	Industrial Noise Policy
km	Kilometres
LCO	Liddell Coal Operations
MOP	Mining Operational Plan
MSC	Muswellbrook Shire Council
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PCWP	Plains Clan of the Wonnarua People
RAP	Registered Aboriginal Party
Resources Regulator	Department of Planning & Environment – Resources Regulator
RMP	Rehabilitation Management Plan
RTS	Response to Submissions

5 REFERENCES

- Department of Environment, Climate Change and Water (DECCW) (2010) *Aboriginal Cultural Heritage Consultation Requirements*.
- Global Acoustics (2013) *Environmental Noise and Blasting Assessment, Liddell Coal Operations Modification 5 to Development Consent DA 305-11-01*.
- Hansen Bailey (2018) *Liddell Coal Operations Modification 7 to DA 305-11-01 Environmental Assessment*.
- Liddell Coal Operations Pty Limited (2017) *Biodiversity Offset Management Plan*.

APPENDIX A
Summary of Submissions

Mr Philip Nevill
Environmental Assessment Officer
Resource Assessments - Planning Services Division
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

philip.nevill@planning.nsw.gov.au

Dear Philip

**Liddell Coal Mine (DA 305-11-01) – Modification 7
Review of Environmental Assessment**

I refer to your email dated 24 August 2018 inviting the Division of Resources & Geoscience (the Division) to provide comments on the Liddell Coal Mine (DA 305-11-01) – Modification 7 (the Project).

The relevant units internal to the Division have been consulted where required in generating this advice. Further, the Department of Planning and Environment - Planning Services Division and the Proponent should be aware that matters pertaining to rehabilitation, final landform, environmental impacts of subsidence, subsidence management, mine operator and safety are assumed and assessed by the NSW Resources Regulator.

The Division has reviewed the information supplied in relation to the abovementioned Project and acknowledges that there are no proposed changes to the approved mining areas, ore processing rate, mine life or mining methods. There is also no change to the Liddell Coal Mine ore resource/reserves.

The Division requests that the Geological Survey of NSW – Land Use team be consulted in relation to any additional biodiversity measures, should they be required, to ensure there is no consequent reduction in access to prospective land for mineral exploration, or potential for sterilisation of mineral or extractive resources.

The Division has no further comments at this time.

For further enquiries regarding this matter please contact Mr Adam W. Banister, Senior Advisor Assessment Coordination on (02) 4063 6601 or assessment.coordination@planning.nsw.gov.au

Yours sincerely



David Humphris
A/Director Titles Assessments
11 September 2018

for
Dr David Blackmore
Executive Director Resource Operations
Division of Resources & Geoscience

From: simon.francis@industry.nsw.gov.au
To: [Philip Nevill](#)
Subject: Re: Liddell Coal Mine (DA 305-11-01) - Modification 7
Date: Thursday, 6 September 2018 10:57:49 AM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image004.jpg](#)

Hi Philip

As there is no additional impacts in terms of enlarged footprint, etc, we have no comments.

On Fri, 24 Aug 2018 at 14:33, Philip Nevill <Philip.Nevill@planning.nsw.gov.au> wrote:

Good afternoon,

Liddell Coal Mine (DA 305-11-01)

Modification 7

Liddell Coal Operations Pty Ltd (Liddell) has submitted a modification application for Liddell Coal Mine (DA 305-11-01). The site is located 25 kilometres north-west of Singleton in the Singleton Council and Muswellbrook Shire Council local government areas.

The proposed modification involves:

- minor adjustment to the consent boundary to facilitate rehabilitation works in the historic Mountain Block mining area;
- disturbance of approximately 1 hectare of remnant vegetation within the Mountain Block offset area; and
- minor administrative changes.

The proposal will be placed on public exhibition from **Thursday 30 August 2018** until **Thursday 13 September 2018**. You are invited to comment on the proposed modification by close of business on **Thursday 13 September 2018**.

The Environmental Assessment is available on the Departments website, using the link below:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9147

A copy of the Departments exhibition notice is also attached for your information. For further information, please contact me on the details below.

Kind Regards,

Philip Nevill

Environmental Assessment Officer

Resource Assessments | Planning Services

320 Pitt Street | GPO Box 39 | Sydney NSW 2001
T 02 82751036 E philip.nevill@planning.nsw.gov.au



Subscribe to our [newsletter](#)

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Regards

Simon

Simon Francis | Senior Policy Officer - Cabinet and Legislation Services

NSW Department of Industry | Lands & Water | Strategy and Policy

E: landuse.enquiries@dpi.nsw.gov.au

This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of their organisation.



DOC18/615865-03; EF13/3223

Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Email to: philip.nevill@planning.nsw.gov.au

Attention: Mr Philip Nevill

11 September 2018

Dear Mr Nevill

**Proposed Modification to Liddell Coal Mine, Modification 7 (DA 231-07-2000)
Exhibition Notice - Comments from the Environment Protection Authority (EPA)**

I refer to your email to the Environment Protection Authority (EPA) received 24 August 2018, seeking comments in relation to the application from Liddell Coal Operations Pty Ltd to modify its development consent for the Liddell Coal Mine, located in the Upper Hunter Valley of New South Wales, in the Singleton and Muswellbrook local government areas.

The EPA has reviewed *Environmental Assessment Modification 7 to DA 305-11-01* dated August 2018 (EA), and understands that the modification is seeking to make minor adjustment to the consent boundary to facilitate rehabilitation works in the historic Mountain Block mining area; clear approximately 1 hectare of remnant vegetation within the Mountain Block offset area; and make some minor administrative changes.

Noise impacts

The EPA requires the proponent to provide an updated acoustic report that suitably calculates and models the likely noise impacts to residential receivers.

The Acoustic Report prepared by Global Acoustics at Appendix F of the EA states '*it is unlikely to be any increase in impacts to the community*'; however, this appears to be based on assumptions and not modelling despite the proposed activities being closer to receivers. While the EPA acknowledges that the proposed modification is relatively minor in the context of the operations undertaken at the Liddell Coal Mine in totality, the EPA requires a suitable assessment to fully assess the noise impacts from the proposal.

Thorough assessment of the proposed modification is particularly important because the 2013 assessment for Modification 5 for DA 305-11-01 indicated that noise from Liddell Coal Mine is anticipated to increase in mid-2018. The EPA's submission on to the then Department of Planning and Infrastructure advised that the noise assessment for that modification predicted exceedances of the Project Specific Noise Levels that must be addressed by the proponent in accordance with Chapters 8 and 9 of the Industrial Noise Policy.

Air Quality

Air quality impacts can be managed through existing licence conditions, and there are unlikely to be any increase in impacts to the community.

The guiding principle for particulate matter management is to adopt all feasible and reasonable best practice mitigation measures. The EA proposes to manage dust emissions by minimising the areas of exposed earth open at any one time with smaller targeted areas exposed and rehabilitated before moving on. Mitigation also includes many measures contained within the Air Quality Management and Monitoring Plan including identification of access roads, vehicle speeds, maintenance of equipment, water carts for dust suppression, stockpile management and progressive rehabilitation.

If you have any questions about this matter, please contact Genevieve Lorang on (02) 4908 6869 or by email to hunter.region@epa.nsw.gov.au

Yours sincerely

MITCHELL BENNETT
Head Strategic Programs Unit - Hunter
Environment Protection Authority



Enquiries

Please ask for Hamish McTaggart
Direct 02 6549 3890

Our reference

Your reference DA 305-11-01 Mod 7

13 September 2018

**Phillip Nevill
Environmental Assessment Officer
Dept of Planning & Environment
GPO Box 39
SYDNEY NSW 2001**

Dear Mr Nevill,

Liddell Coal Mine Modification Number 7 (DA 305-11-01)

I refer to your email dated 24 August 2018 advising the Department's receipt of a modification application for the Liddell Coal Mine (DA 305-11-01) and inviting Council to make comment on the proposal.

Council thanks you for the email and opportunity to make a submission in relation to the application. The following submission is made on behalf of Council in relation to the Liddell Coal Mine Modification Number 7 application.

A key aspect of the proposed modification is the adjustment of the DA/project boundary to incorporate a portion of the Mountain Block Offset area. The Environmental Assessment (Heading 4.2, Page 15 - 18) submits that the inclusion of this land within the DA boundary is required to address areas of landform instability, and that considerable planning has been undertaken in relation to the design of a stabilised landform to support the mine site remediation and rehabilitation.

Council notes that the modification seeks approval for disturbance that has already occurred, plus some additional areas of disturbance. The Environmental Assessment for the modification downplays the impact this previous disturbance has had on the ecology of the area, with no attempt to quantify the habitat that once occurred in the disturbed area.

As a heavily mining affected Local Government Area, Council has an interest in ensuring that former mine sites are rehabilitated to high standards, in line with industry best practice and to support future land uses. Council raises no objection to the principle of expanding the DA Boundary to account for improved rehabilitation outcomes provided steps are taken to ensure no further encroachment into the Mountain Block Offset Area occurs in the future. The following specific comments are made:

1. Identification of the mine operational footprint required to achieve the objective of the modification

Council is concerned that insufficient consideration has been carried out in relation to the works within the expanded operational footprint required to achieve the rehabilitation outcomes that inform the need for this modification. If inadequate investigation has been carried out to identify the rehabilitation

required within the proposed project boundary, the Department, proponent and Council cannot be certain that this modification will achieve its rehabilitation objectives. Should the proposed modification be approved and it eventuate that the proponent remained unable to achieve rehabilitation outcomes intended to be facilitated by this modification, a further modification to the DA consent and/or project boundary may be required.

The lodgement of additional modifications for the purpose of achieving the outcomes intended to be achieved by this modification would suggest an unconsidered piece-meal approach to the development assessment process. This would not be in the interest of the Department, proponent, Council or other stakeholders in the project. Accordingly, Council submits that the Department should satisfy itself that the expanded footprint will be sufficient to encompass all stabilisation and rehabilitation works required to enable the proponent to achieve the final rehabilitation outcomes for the Mountain Block Offset portion of the site.

2. Limitation to work carried out outside expanded operation footprint

It is understood that the proposed development would involve the disturbance of previously undisturbed land held as a biodiversity offset. The application has been accompanied by an Ecological Assessment which considers the ecological impacts associated with the expansion of the projects operational footprint.

The study area for this assessment reflects the proposed extended development boundary and assumes that disturbance will not be caused outside of the new proposed project area. In view of this, the Department should impose conditions on any approval to ensure rehabilitation work in the extended project area does not cause disturbance to the Mountain Block Offset area outside the modified project boundary. An effective way to manage this would be by requiring vehicles working on rehabilitation, within the extended project area, to carry GIS tracking software to monitor their location and identify, record and report on any transgression to the project boundary.

Given the limited information prepared regarding the intended rehabilitation work, it is difficult to identify the likelihood of vehicles associated with this operation leaving the project boundary and thereby causing disturbances to ecological communities. The imposition of a condition requiring the GIS monitoring of vehicles operating at the site would be an effective measure to ensure operations are limited to the approved project area and manage the potential for disturbance to be caused to native flora and fauna in the Mountain Block Offset area outside the development boundary.

3. Weed management and minimisation of impact on adjoining offset area

As the proposed modification would expand the project area to encompass a previously undisturbed offset area, Council is interested in ensuring disturbances to areas of ecological significance outside the project area are minimised.

Council recommends that the Department impose conditions that require the proponent to take reasonable steps to minimise ecological disturbances within the expanded project boundary.

Of particular concern in relation to this matter is the possible spread of weeds into the expanded project area and adjacent the biodiversity offset area, as a result of the proposed rehabilitation works in the expanded operation footprint. Accordingly, Council requests that if the modification is approved the proponent

be required to prepare and implement a weed management program for the modified site operations. Any such program should include requirements for the monitoring, control and eradication of invasive weeds both within the expanded project area and the neighbouring Mountain Block Offset.

4. Modification to consent conditions

In addition to the alteration of the project boundary the proposed modification seeks amendments to conditions of consent relating to the mine rehabilitation.

The Environmental Assessment indicates that the changes to consent conditions proposed are predominately administrative and are to allow a level of flexibility with the sites final rehabilitation.

Prior to granting consent to the modification of the conditions of consent the Department should satisfy itself that changes to conditions are necessary and will not negatively affect the final rehabilitation outcomes for the project.

The above comments have been informed based on Council's review of the Environmental Assessment accompanying the application and Council's knowledge of the project. These comments have not been prepared as an exhaustive list of assessment considerations, but as comments representing aspects of the proposal of interest or concern to Council based on its understanding of the project. It is Council's expectation that the Department of Planning and Environment will carry out a thorough assessment of all potential environmental impacts associated with the proposed modification prior to its determination of the application.

Finally, and in addition to the above, Council would like to take this opportunity to reinforce that it has a keen interest in ensuring the best possible rehabilitation outcomes for mine affected land within the Local Government Area. Council expects to be consulted in relation to any alterations to rehabilitation management plans that may occur as an outcome of this modification application and requests that such plans are prepared to address consent requirements and ensure the best possible environmental and social outcomes for the community. To achieve this objective, Council requests that any rehabilitation strategy sets out a rehabilitation program for the site through the application of micro relief to the site which incorporates 'geofluv' principles.

Council appreciates the opportunity to comment and would be pleased to provide additional information if requested.

Yours faithfully



Fiona Plesman
General Manager

Our Ref: DOC18/666624

Philip Nevill
Environmental Assessment Officer, Resource Assessments
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

By email: philip.nevill@planning.nsw.gov.au

Liddell Coal Operations – Modification 7 to DA 305-11-01

Dear Philip,

I refer to the Department of Planning and Environment – Resources Assessments (DPE – Resources & Assessment) email dated 28 August 2018 inviting the Resources Regulator to provide a response to the Liddell Coal Operations – Modification 7 to DA 305-11-01.

Liddell Coal Operations Pty Ltd (Liddell) has submitted a modification application for Liddell Coal Mine (DA 305-11-01) and the proposed modification involves:

- Increasing the Development Consent boundary by approximately 3.5ha to facilitate remedial works associated with the rehabilitation of historic Mountain Block mining area. The 3.5ha consists of approximately 2.5ha that has been previously disturbed by mining with the remaining 1ha of remnant vegetation within the Mountain Block offset area; and
- Amendment of conditions of DA to provide flexibility surrounding the conceptual final landform and the Development Layout Plans.

The Resources Regulator advises DPE – Resources & Assessment that the Environmental Assessment has adequately addressed the issues relating to the Mountain Block project however did not adequately address and justify the proposed modification to final landform nor outlined specific rehabilitation requirements given that closure forecast to be finalised by 2023.

Additional information is required to demonstrate that sustainable rehabilitation outcomes can be achieved as a result of the project. The required additional information is as outlined below.

- i. An updated Final Landform Plan that reflects changes to operations, including revised mine plans. This plan should reflect the areas to be returned to Central Hunter Box-Ironbark Woodland and open grassland suitable for grazing use.
- ii. An updated mine layout and scheduling plan, maximising opportunities for progressive final rehabilitation. A description of the key assumptions (e.g. ROM production; overburden handled etc.) that were used to define the schedule is to be provided and mapped against the mine layout sequence. The objective being to provide the basis to determine that progressive rehabilitation has been undertaken as far as reasonably practical at any given point in time.

- iv. More specificity in regards to rehabilitation outcomes for areas proposed to be rehabilitated to 'areas of open grassland (suitable for grazing use) with pockets of native vegetation'. For example, additional information is required to define 'native vegetation' and whether this vegetation will be consistent with surrounding ecological communities etc.

Should you have any questions in regards to this advice, please don't hesitate to contact Monique Meyer on me on 4063 6722.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Matthew Newton', with a stylized, cursive script.

Matthew Newton
Director Compliance Operations
NSW Resources Regulator

12 September 2018



Office of
Environment
& Heritage

DOC18/621331-1
DA 305-11-01 MOD 7

Mr Philip Nevill
Environmental Assessment Officer – Resource Assessments
Planning Services
Department of Planning & Environment
philip.nevill@planning.nsw.gov.au

Dear Philip

Liddell Coal Mine (DA 305-11-01) Modification 7

I refer to the Department of Planning and Environment's email of 27 August 2018, inviting the Office of Environment and Heritage (OEH) to review and comment on the proposed Modification 7 for the Liddell Coal Mine.

The modification includes plans to change the boundary of the Mountain Block Offset so that remedial works may be implemented to stop soil erosion on the edge of an old open-cut mine, in accordance with the approved Biodiversity Offset Management Plan. OEH has identified aspects of Aboriginal cultural heritage management that will need to be updated if this proposal is approved, and includes comments on flood risk from the project.

OEH's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Nicole Davis, A/Senior Team Leader Planning, on 0409 394 343.

Yours sincerely

Sharon Molloy 14/9/2018

SHARON MOLLOY
Director Hunter Central Coast Branch
Regional Operations Division

Contact officer: NICOLE DAVIS
0409 393 343

Enclosure: Attachments A and B

OEH's recommendations

Liddell Coal Mine (Modification 7)

1. OEH is satisfied with the proposed offset package for this modification.
2. OEH is satisfied with the proposed reduction in post-mine rehabilitation to 'grassland suitable for grazing use'.
3. OEH has no comment on the proposed changes to Condition 2 of Schedule 2, or Conditions 16 and 39 of Schedule 3, as they are outside of OEH's expertise.
4. Consultation with the registered Aboriginal parties must be maintained in the ongoing management of the Aboriginal cultural heritage values at Liddell Coal Operations.
5. The existing Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations (2018) must be updated to show the MOD 7 consent boundary.
6. The Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations must include a protocol for the management of unexpected finds within the MOD 7 consent boundary.
7. The Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations must include a protocol for the management of any human remains uncovered in the MOD 7 consent boundary.
8. No ground disturbance from MOD 7 works are to occur outside of the area assessed for the modification.
9. OEH recommends that any works in the area included in the area for DA boundary amendment must not adversely affect flood characteristics on privately owned properties, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).
10. OEH recommends that any changes to the Conceptual Final Landform must not adversely affect flood characteristics on privately owned properties, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).

OEH's detailed comments

Liddell Coal Mine (Modification 7)

Biodiversity

1. OEH is satisfied with proposed offset for this modification

OEH reviewed the report, *Ecological Assessment, Liddell Coal Operations, DA305-11-01 Modification 7* (dated August 2018) that was prepared by Umwelt (Australia) Pty Limited, and presented in Appendix D of the Environmental Assessment (EA). This report describes the 3.5 ha of land proposed to be disturbed in the Mountain Block Biodiversity Offset Area to stabilise and reshape areas prone to erosion on the edge of the historic Mountain Block Mining Area. Once remediation works are completed and a final landform is established, the land would be revegetated and managed as a biodiversity offset area.

The remediation works will have a direct impact on about 0.01 hectare of Central Hunter Ironbark – Spotted Gum – Grey Box Forest Endangered Ecological Community and approximately 1 hectare of habitat for the Spotted-tailed Quoll, as well as likely habitat for a range of threatened birds and bats, and the Tiger Orchid (*Cymbidium canaliculatum*). Once stabilised, this land will be revegetated to floristic equivalents of the two woody vegetation communities affected by the works. The proponent is also offering an offset of 5.86 hectares of surplus land in the Bowmans Creek Riparian Corridor (3.52 hectares) and Mountain Block Biodiversity Offset Area (2.34 hectares) – land included in the Conservation Agreements in preparation under the *Biodiversity Conservation Act 2016* that is additional to the requirements of the DPE consent. The environmental values of this surplus land are described in section 5.1.1 of the EA, focusing on threatened biodiversity values.

The biodiversity offset package has a larger area of remnant native vegetation than the area that will be cleared, including Central Hunter Ironbark – Spotted Gum – Grey Box Forest Endangered Ecological Community. The new offset will be secured under a Conservation Agreement, and the remediated area will be revegetated with a similar species mix that will be impacted. The biodiversity offsetting policy for the proposed offset for this project was not stated. However, OEH considers that the proposed offset package meets the thirteen *OEH principles for the use of biodiversity offsets in NSW*.

Recommendation 1

OEH is satisfied with the proposed offset package for this modification.

2. OEH is satisfied with the proposed reduction in grassland on post-mine rehabilitation

The proponent has identified that it is physically not possible to reinstate 731 hectares of Central Hunter Box – Ironbark Woodland and 1,247 hectares of 'grassland suitable for grazing use' on the post-mined landscape of the Liddell Coal Mine, as stated in Table 8 in Schedule 3, Condition 37 of DA 305-11-01. This is due to the presence of final voids, dams, and road and rail corridors. Therefore, the proponent proposes reducing the extent of grassland to approximately 1000 hectares, and maintaining the 731 hectares of Central Hunter Box – Ironbark Woodland to be recreated.

Recommendation 2

OEH is satisfied with the proposed reduction in post-mine rehabilitation to 'grassland suitable for grazing use'.

3. OEH has no comment on the proposed administrative amendments to conditions

The proponent proposes modifying the wording of consent Condition 2 of Schedule 2, which relates the operation of the Liddell Coal Mine, to that proposed in the environmental assessments for DA 305-1101 and all subsequent modifications. It proposes removing reference to the Development Layout Plans in all of those environmental assessments, so it is not locked in to the location of elements of the mining projects shown in the those plans, but rather it will operate 'generally in accordance' with the written descriptions in those environmental assessments. OEH has no comment on this proposed change, which is outside of OEH's area of expertise.

Further, the proponent is proposing changing the reporting threshold for dust set in Condition 16 of Schedule 3. The current threshold of the short-term assessment criteria for dust (PM₁₀ (50µg/m³)) may be triggered by dust generated outside the Liddell Coal Operations alone. The proponent seeks to change the condition so it is only triggered by dust generated on the Liddell Coal operations site. OEH has no comment on this proposed change, which may best be assessed by the Environment Protection Authority.

The proponent seeks to change consent Condition 39 of Schedule 3 so that the Rehabilitation Management Plan is prepared to the satisfaction of the Department of Planning and Environment – Division of Resources and Geoscience (DPI – DRG), and that any related management plans are also prepared to the satisfaction of DPI – DRG. OEH has no comment on this proposed change, which is outside of OEH's area of expertise.

Recommendation 3

OEH has no comment on the proposed changes to Condition 2 of Schedule 2, or Conditions 16 and 39 of Schedule 3, as they are outside OEH's expertise.

Aboriginal Cultural Heritage

4. Consultation with the registered Aboriginal Parties for Liddell Coal Operations

OEH notes that the *Aboriginal and Historic Due Diligence Archaeological Assessment* (OzArk EHM, 2018) was undertaken for the Modification 7 (MOD 7) on 31 May 2018 and that no Aboriginal community members were present. No new Aboriginal sites were recorded and the report states that no previously recorded Aboriginal sites are expected to be directly impacted by the proposed Modification (OzArk EHM, 2018).

Liddell Coal Operations Pty Limited (LCO) must consult with the registered Aboriginal parties in the ongoing management of the Aboriginal cultural heritage values at LCO. Evidence of ongoing consultation must be provided to the consent authority upon request. OzArk EHM (2018) stated that a meeting was held by LCO with members of the Aboriginal Stakeholder Reference Group on 16 July 2018, as per *Section 4.2.1 Ongoing Consultation* of the Aboriginal Cultural Heritage Management Plan (ACHMP 2018), and that no issues were raised regarding cultural values during the meeting.

Recommendation 4

Consultation with the registered Aboriginal parties must be maintained in the ongoing management of the Aboriginal cultural heritage values at Liddell Coal Operations.

5. The Liddell Coal Operations Aboriginal Cultural Heritage Management Plan must be updated

The current LCO ACHMP (2018) must be updated in consultation with the registered Aboriginal parties to manage Aboriginal cultural heritage within the proposed MOD 7 consent boundary. The proposed MOD 7 consent boundary, as shown on *Figure 1-3* of the Aboriginal Cultural Heritage Assessment Report (OzArk EHM, 2018), must be updated on all relevant figures in the updated LCO ACHMP. This process must be undertaken prior to commencing any ground disturbance or development works.

Recommendation 5

The existing Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations (2018) must be updated to show the MOD 7 consent boundary.

6. Unexpected Finds

If ground disturbance works reveal any previously unidentified Aboriginal objects within the MOD 7 consent boundary, these unexpected finds must be managed following the protocols outlined in *Section 6.2 Previously Unrecorded Finds* in the LCO ACHMP 2018.

Recommendation 6

The Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations must include a protocol for the management of unexpected finds within the MOD 7 consent boundary.

7. Human Remains

If ground disturbance works reveal any human remains or burial in the MOD 7 consent boundary, the protocols in *Section 6.2.3 Management of Potential Human Skeletal Remains* in the LCO ACHMP 2018 must be followed.

Recommendation 7

The Aboriginal Cultural Heritage Management Plan for the Liddell Coal Operations must include a protocol for the management of any human remains uncovered in the MOD 7 consent boundary.

8. Modification Assessment Area

The area assessed for the modification is shown on *Figure 3.1* of the archaeological due diligence assessment by OzArk EHM (2018). There must be no impacts outside of the area assessed for the modification.

Recommendation 8

No ground disturbance from MOD 7 works are to occur outside of the area assessed for the modification.

Water, Flood and Coast

9. Flood impacts from amendments to the DA boundary must remain on site

OEH's review of the Environmental Assessment for Liddell MOD 7 by Hanson Bailey (dated August 2018) identified that the proposed boundary amendment in the north of the site borders privately owned lands. Any remediation works in this area will need to ensure that any properties not owned by the proponent are not adversely impacted by flood waters as a result of the changes in landform, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).

Recommendation 9

OEH recommends that any works in the area included in the area for DA boundary amendment must not adversely affect flood characteristics on privately owned properties, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).

10. Flood impacts from changes to mine site rehabilitation must remain on site

Rehabilitation objectives for the mine site are defined in consent Condition 37 of Schedule 3 and shown schematically in *Appendix 3 Conceptual Final Landform* of DA 305-11-01. The proposed changes of this condition relate to the achievement of specified revegetation areas. The Conceptual Final Landform map in *Appendix 3* of DA 305-11-01 indicates a number of dams

along the eastern side of the site. Any changes to the final landform of the mine site need to ensure that any properties not owned by the proponent are not adversely impacted by flood waters as a result of the changes in landform, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).

Recommendation 10

OEH recommends that any changes to the Conceptual Final Landform must not adversely affect flood characteristics on privately owned properties, for the full range of flood events, up to and including the Probable Maximum Flood (PMF).

APPENDIX B
Global Acoustics
Response to Noise Issues Raised in Submissions

Liddell Coal Operations

Modification 7 to Development
Consent DA 305-11-01

Response to Noise Issues Raised
in Submissions

Prepared for
Liddell Coal Operations



Noise and Vibration Analysis and Solutions

Global Acoustics Pty Ltd
PO Box 3115 | Thornton NSW 2322
Telephone +61 2 4966 4333
Email global@globalacoustics.com.au
ABN 94 094 985 734

Liddell Coal Operations

Modification 7 to Development Consent DA 305-11-01

Response to Noise Issues Raised in Submissions

Reference: 18199_R01

Report date: 25 October 2018

Prepared for

Liddell Coal Operations Pty Ltd

PO Box 7

Singleton NSW 2330

Prepared by

Global Acoustics Pty Ltd

PO Box 3115

Thornton NSW 2322



Prepared: Robert Kirwan
Consultant



QA Review: Amanda Borserio
Consultant

Global Acoustics Pty Ltd ~ Environmental noise modelling and impact assessment ~ Sound power testing ~ Noise control advice ~ Noise and vibration monitoring ~ OHS noise monitoring and advice ~ Expert evidence in Land and Environment and Compensation Courts ~ Architectural acoustics ~ Blasting assessments and monitoring ~ Noise management plans (NMP) ~ Sound level meter and noise logger sales and hire

EXECUTIVE SUMMARY

Global Acoustics was engaged by Liddell Coal Operations (LCO) to prepare a noise impact assessment for the remediation and rehabilitation of the Mountain Block Offset Area (MBOA), which was included in the Environmental Assessment (EA) submitted in support of the Modification 7 of DA305-11-01 held by LCO. Comments were received from the Environment Protection Authority (EPA) recommending modelling to assess the likely noise impacts to residential receivers. The requested modelling of noise has been prepared to address EPA's comments.

Rehabilitation of the MBOA is proposed to occur during the day period only. One operational scenario was considered to assess worst-case noise impacts from this area. The meteorological conditions considered in this assessment were consistent with the prevailing meteorological conditions assessed in the LCO Modification 5 noise impact assessment (Global Acoustics, 2013) to enable the cumulative impact of the MBOA and current LCO mining area to be determined.

The two nearest noise sensitive receptors were considered in this assessment. Both receptors are predicted to receive MBOA noise levels less than LCO day period criteria.

Predicted noise levels from the proposed MBOA were combined with predicted levels from the LCO Modification 5 noise impact assessment to determine potential cumulative impacts. No cumulative noise impacts are predicted due to the proposed LCO modification.

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1 INTRODUCTION

Global Acoustics was engaged by Liddell Coal Operations (LCO) to prepare a noise impact assessment for the remediation and rehabilitation of the Mountain Block Offset Area (MBOA) which was included in *Liddell Coal Operations Environmental Assessment Modification 7 to DA 305-11-01* (Hansen Bailey, 2018) submitted 21 August 2018. Comments have been received from the Environment Protection Authority (EPA) requesting that the noise impact assessment should include modelling. Whilst the risk of adverse noise impacts to residential receptors is very low, this response and the associated modelling have been prepared to address EPA's comments.

This noise assessment investigates potential impacts from the proposed rehabilitation activities at the two nearest noise sensitive receptors to the MBOA. Predicted noise levels were also combined with predicted levels from LCO's Modification 5 noise impact assessment (Global Acoustics, 2013) to assess potential cumulative impacts. Figure 1 shows the MBOA and the receptors included in this assessment.

1.1 Receptors

The two nearest noise sensitive receptors to the MBOA were considered in this assessment and are detailed in Table 1.1

Table 1.1: RECEPTORS

Receptor ID	Location
R1	1246 Hebden Road
R4	1317 Hebden Road

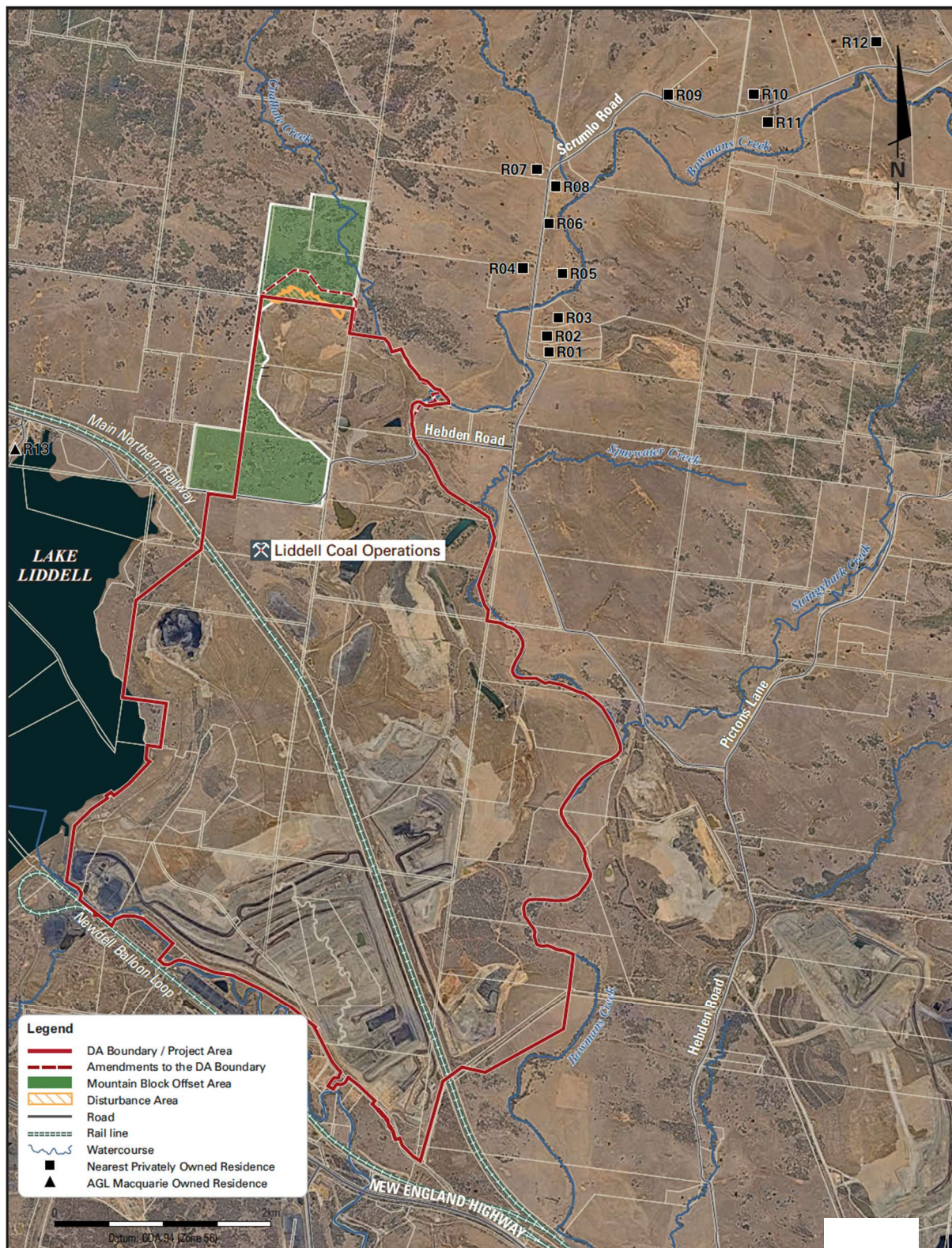


Figure 1: MBOA and receptor locations

1.2 Terminology & Abbreviations

Some definitions of acoustic terminology which may be used in this document are as follows:

- L_A , the A-weighted root mean squared (RMS) noise level at any instant.
- L_{A1} , the noise level which is exceeded for 1 per cent of the time.
- $L_{A1,1\text{minute}}$, corresponds to the highest noise level generated for 0.6 second during one minute. In practical terms, this represents the maximum measured level, and is often used to assess sleep disturbance.
- L_{A10} , the noise level which is exceeded for 10 per cent of the time, which is approximately the average of the maximum noise levels.
- L_{A90} , the level exceeded for 90 per cent of the time, which is approximately the average of the minimum noise levels. The L_{A90} level is often referred to as the “background” noise level and is commonly used to determine noise criteria for assessment purposes.
- L_{Aeq} , the average noise energy during a measurement period.
- dB(A), noise level measurement units are decibels (dB). The “A” weighting scale is used to describe human response to noise.
- dB(C), noise level measurement units are decibels (dB). The “C” weighting scale is used as a measure of human response to high noise levels. It includes more of the low frequency range of sounds. It is often used to assess low frequency noise impact.
- sound power level (L_W denotes linear, L_{WA} denotes A-weighted), 10 times the logarithm of energy radiated from a source (as noise) divided by a reference power, the reference power being 1 picowatt.
- sound pressure level (L_p), fluctuations in pressure measured as 10 times a logarithmic scale, the reference pressure being 20 micropascals.
- sound exposure level (SEL), the A-weighted noise energy during a measurement period normalised to one second.
- Hertz (Hz), cycles per second, the frequency of fluctuations in pressure, sound is usually a combination of many frequencies together.
- Assessment Background Level (ABL), the 10th percentile background noise level for a single period (day, evening or night) of a 24 hour monitoring period.
- Rating Background Level (RBL), the background noise level for a period (day, evening or night) determined from ABL data.

2 CRITERIA

Schedule 3 - Specific Environmental Conditions in development consent DA 305-11-01 contains the relevant noise conditions applicable to LCO. Day period noise impact assessment criteria relevant to this assessment are detailed in Table 2.1.

Table 2.1 LCO IMPACT ASSESSMENT CRITERIA dB

Receptor ID	Receptor Location	Day LAeq,15minute
R1	1246 Hebden Road	35
R4	1317 Hebden Road	36

3 METHODOLOGY

3.1 Noise Model

Noise levels were predicted using RTA Technology's Environmental Noise Model (ENM), a computer based environmental noise model, to determine the acoustic impact of mining activities. The model takes into account geometric spreading, atmospheric absorption, and barrier and ground attenuation. ENM Terrain Category 2, representing a rural land environment, was adopted for model input.

3.2 Noise Model Parameters

3.2.1 Meteorology

Noise impacts were assessed for neutral and prevailing meteorological conditions, consistent with the LCO Modification 5 assessment so that results from both assessments could be combined to determine cumulative impacts. Assessed meteorological conditions are listed in Table 3.1. These conditions were based on an analysis of data from the Mt Owen meteorological station data in the Modification 5 assessment. This station is located on Hebden Road.

Table 3.1 METEOROLOGICAL CONDITIONS INCLUDED IN ASSESSMENT

Temperature °C	Humidity %	Wind Speed m/s	Wind Direction	VTG Deg C/100m
Day Period				
10	80	0	-	-0.5
10	80	3	90	-0.5
10	80	3	112.5	-0.5
10	80	3	135	-0.5
10	80	3	292.5	-0.5
10	80	3	315	-0.5

Direct source-to-receiver wind directions from the MBOA to R1 and R4 would be approximately westerly conditions. Winds from 270 degrees were not identified as prevailing during the Modification 5 assessment, as they occurred less than 30% of the time. Weather conditions at LCO are unlikely to have changed since Modification 5, so winds from 270 degrees are still not considered to be prevailing conditions. However, results during wind directions of 292.5 degrees were identified as prevailing in the Modification 5 assessment so these results have been used to determine cumulative impacts of the proposed MBOA and current LCO mining levels.

Direct source-to-receiver wind directions from current LCO mining areas are generally southerly to south-westerly conditions.

It should be noted that direct source-to-receiver wind conditions from the MBOA and the current LCO mining area vary by approximately 90 degrees and will not occur concurrently.

3.2.2 Topography

Topography is an important model parameter. Landform contours were provided by LCO in digital form for the site and the surrounding area which covered the location of all receptors. The nearest receptors (R1 and R4) are approximately 2 km from MBOA and are separated by a significant ridgeline.

3.2.3 MBOA Model Scenario

LCO provided detailed work areas, activities, and typical equipment types and quantities for proposed operations in the MBOA. A worst-case scenario was developed with plant operating in the northern and eastern extents of the MBOA.

Table 3.2 lists representative typical plant quantities included in the model scenario. These are indicative quantities to allow for assessment. Actual quantities may vary relative to those assessed.

Plant was modelled at maximum sound power, and assuming all plant operates continuously and simultaneously. In reality, this rarely occurs; as such, modelled results are considered conservative.

Table 3.2: PLANT INCLUDED IN MBOA MODEL SCENARIO

Plant	Quantities
Dump truck	3
Dozer	2
Excavator	2
Excavator with breaker attachment	1
Highway truck	1
Tracked watercart	1

3.2.4 Modification 5 Model Scenario – LCO Cumulative Noise

To determine noise levels at the receptors from the proposed MBOA and current LCO mining operations, the 2018 scenario results from the Modification 5 assessment were logarithmically added to the predicted MBOA noise levels. LCO have advised that current production rates and fleet on site are lower than were included in the 2018 model scenario in the Modification 5 assessment, hence these results will be conservative.

3.2.5 Plant Sound Power

MBOA plant sound power levels were sourced from AS2436-2010 ‘Guide to noise and vibration control on construction, demolition and maintenance sites’. Octave data was sourced from Global Acoustics database of representative sound powers.

Sound power levels presented in Table 3.3 are representative of typical plant to be used at the MBOA for the purposes of noise impact modelling.

Table 3.3: SOUND POWER DATA

Equipment Category	Representative Sound Power, $L_{eq,15minute}$	
	Linear (dB)	A-weighted (dB(A))
Dump truck	114	107
Dozer	115	108
Excavator	119	107
Excavator with breaker attachment	124	118
Highway truck	113	107
Tracked watercart	115	108

4 RESULTS

4.1 MBOA Operational Noise Results

Noise impact assessment predictions for the MBOA modelled scenario are presented in Table 4.1. Results are presented for neutral meteorological conditions and the highest predictions for each of the prevailing meteorological conditions considered for each receptor. No exceedances of the criteria are predicted for Modification 7 alone.

Table 4.1: MBOA NOISE IMPACT ASSESSMENT PREDICTIONS $L_{Aeq,15\text{minute}}$ dB

Receptor	Day Period Criteria	Predicted Results		Exceedance
		Neutral Conditions	Prevailing Conditions ¹	
R1	35	17	32	Nil
R4	36	19	28	Nil

Notes:

1. Worst case prediction for each receptor for the met conditions shown in Table 3.1 of this report.

4.2 Cumulative LCO Noise Results

Predicted noise levels from the MBOA area were combined with predicted noise levels from LCO's Modification 5 noise impact assessment to assess potential cumulative impacts. Scenario 3, 2018 from the Modification 5 assessment was considered most appropriate.

The predictions in this assessment were logarithmically added to the Modification 5 predictions and the results are presented in Table 4.2. No cumulative noise impacts are predicted due to Modification 7 and the approved mining operations at LCO.

Table 4.2 CUMULATIVE NOISE PREDICTIONS dB

Receptor ID	Day Period Criteria	Worst case prediction for Modification 7 ¹	Modification 5 prediction ²	Cumulative Result	Noise level increase
R1	35	32	19	32	Nil
R4	36	28	17	28	Nil

Notes:

1. Worst case prediction for each receptor taken from Table 4.1 of this report; and
2. Predictions taken from the LCO Modification 5 Noise Impact Assessment.

4.3 Mitigation and Management

Noise impacts of LCO are currently monitored and managed in accordance with the approved Noise Monitoring Program. The remediation activities on the MBOA will continue to be managed in accordance with the measures outlined within the Noise Monitoring Program to comply with noise criteria specified within DA 305-11-01.

5 SUMMARY

This assessment has considered potential noise impacts associated with the proposed rehabilitation of the Mountain Block Offset Area. One scenario was considered to assess worst-case noise impact. Rehabilitation of the MBOA is proposed to occur during the day period only.

The two nearest noise sensitive receptors were considered in this assessment. Both receptors are predicted to receive noise levels less than current LCO criteria. Therefore, it can be assumed that no residential receptors will experience noise exceedances above the current LCO criteria in DA 305-11-01.

Predicted noise levels were combined with predicted levels from the LCO Modification 5 noise impact assessment to determine potential cumulative impacts. No cumulative noise impacts are predicted due to Modification 7 and the approved mining operations at LCO.

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6 REFERENCES

AS2436, 2010. *Guide to noise and vibration control on construction, demolition and maintenance sites*, Standards Australia.

Global Acoustics Pty Ltd, 2013. Liddell Coal Operations Modification 5 to Development Consent DA 305-11-01, Environmental Noise and Blasting Assessment.

Hansen Bailey, 2018. Liddell Coal Operations Environmental Assessment Modification 7 to DA 305-11-01.

APPENDIX C
HEC Response to OEH Submission

9 October 2018

Environment & Community Manager
Liddell Coal Operations Pty Ltd
A Glencore Managed Company
via Email
Attention: Ben de Somer

Dear Ben,

Re: Liddell Modification 7 – Response to OEH Submission

Further to our proposal dated 21 September, we have prepared this brief letter in response to the NSW Office of Environment and Heritage (OEH) submission requesting assessment of flood characteristics for Modification 7 (the Modification). Recommendation 9 of the OEH submission states:

“...any works in the area included in the area for DA boundary amendment must not adversely affect flood characteristics on privately owned property, for the full range of flood events, up to and including the Probable Maximum Flood (PMF)”.

We understand that flood characteristics on privately owned property could be affected if the catchment area reporting to Bowmans Creek increased as a result of the Modification. The catchment area of Bowmans Creek adjacent to the Mountain Block area is estimated at approximately 153 km². However, the Modification is not seeking to significantly modify the final landform design. This has been confirmed by comparing contour information provided for the Mountain Block area without and with the Modification – refer Figure 1.

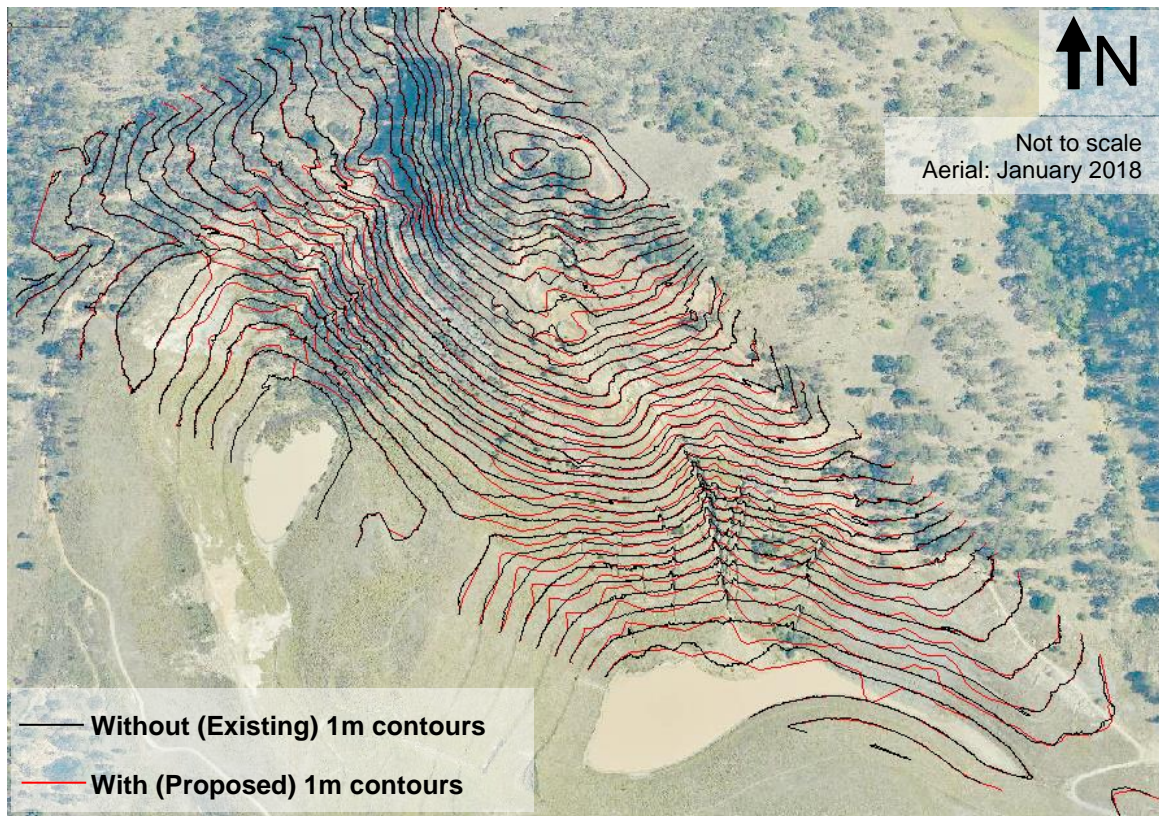


Figure 1 Comparison of Contour Information: Without and With the Modification

The minor differences visible between the two sets of contours would not alter the existing catchment area reporting to Bowmans Creek hence flood characteristics would also not be expected to change.

As per Recommendation 9 of the OEH submission, we understand that the main concern is the possibility of the Modification affecting flooding characteristics on privately owned property for the full range of flood events. As the contours for the Modification show no change to the catchment area reporting to Bowmans Creek, it is expected that there would be no change to flooding characteristics on adjacent landholders' property as a result of the Modification. Given this finding, we do not believe an assessment of flooding affects is necessary for the Modification.

Please do not hesitate to contact the undersigned if you have any queries.

Yours faithfully,

Dayjil Fincham
Senior Water Resources Engineer

Tony Marszalek
Director