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Advice provided via the Major Projects Portal

Dear Gabrielle,

**Aboriginal Cultural Heritage Advice – EIS – State Significant Infrastructure –
Dendrobium Mine Extension Project (SSI-33143123)**

Thank you for the opportunity to provide comment on the Dendrobium Mine Extension State Significant Infrastructure (SSI) project. We understand that the Dendrobium Mine is operated by Illawarra Coal Holdings Pty Ltd (Illawarra Metallurgical Coal [IMC]) across the Wollongong, Wingecarribee and Wollondilly Local Government Areas.

We have prepared the following advice to assist the Department in considering Aboriginal cultural heritage matters under this SSI application. A summary of our key findings is provided below with further detailed comments included at **Attachment A**.

Aboriginal cultural heritage impacts have been reduced overall

The Dendrobium Mine Extension Project was subject to previous assessment by the former Department of Planning, Industry and Environment. The previous project covered a larger area across two proposed areas: Areas 5 and 6. By comparison, the current application is a reduced size Area 5. We support avoiding harm to Aboriginal cultural heritage by reducing the area of the proposed mine.

The current application:

- Reduces the extent of Area 5 from 1520 hectares to 792 hectares (MSEC 2022, p.ii).
- Removes longwall mining below previously identified Aboriginal cultural heritage sites of high significance.
- Reduces the number of Aboriginal cultural heritage sites directly or partially above longwalls from 20 (15 sites in Area 5 and 5 sites in Area 6) to 6 sites.

Overall, the revised layout reduces the number of Aboriginal cultural heritage sites at risk of harm. However, some risks do remain. We note that:

- Under the current application, the maximum predicted total vertical subsidence for rock shelters in Area 5 has increased from 1650mm to 1750mm.
- The maximum predicted total vertical subsidence for grinding groove sites in Area 5 has increased from 1250mm to 1550mm.
- For the overall project, by removing Area 6, a reduction in predicted total vertical subsidence for grinding groove sites from 2150mm to 1550mm has been achieved.
- Other measures including conventional tilt, hogging and sagging curvature in Area 5 have been reduced.

We support the reduced impacts where these have been achieved. However, if the maximum predicted subsidence was to occur this would cause severe impacts to the affected site or sites.

For this reason, we have suggested options for draft conditions of consent and revised mitigation and management strategies below. We have also suggested how the Aboriginal cultural heritage assessment report could be revised to further inform this application.

The risk of harm to Aboriginal cultural heritage needs to be appropriately managed

Should this application be approved, we suggest the following matters be considered in drafting conditions of consent for Aboriginal cultural heritage impacts:

- The definition of the boundaries of Aboriginal cultural heritage sites need to include the whole natural feature and be explicitly stated for each site in the Aboriginal Cultural Heritage Management Plan (ACHMP). This is to ensure holistic site management and avoid restrictive definitions with a risk of underrepresenting harm.
- Performance measures should be consistent with other recent mining approvals in the Illawarra. For example, we support the Russel Vale (2020, MP09_0013) consent that requires that the development not cause direct or indirect harm to Aboriginal cultural heritage.
- Heritage NSW seeks DPE support to ensure the most sophisticated and available subsidence monitoring tools are in place. Conditions associated with the Tahmoor North Underground Extension (DA67/98-PA-40) West 3 and West 4 project implemented measures to monitor and protect grinding groove sites. This included an appropriate level of 24-hour monitoring to ensure any settling activity is caught early and measures put in place immediately to lessen catastrophic subsidence impacts to irreplaceable Aboriginal heritage sites.

Heritage NSW would welcome the opportunity to provide further advice to the Department on any proposed draft conditions of consent, should this application be approved.

We recommend considering additional management and mitigation measures

- The Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared by Niche Environment and Heritage (Niche) could be improved by detailing management and mitigation measures rather than proposing to explain these in a post-approval ACHMP. Alternatively, the ACHMP could be prepared pre-approval
- Further detail of management and mitigation measures at this stage will help to ensure that all measures that may contribute to assessing the principles of Ecologically Sustainable Development (ESD) are clearly articulated.

There are opportunities to improve the Aboriginal cultural heritage assessment report

We have reviewed the ACHAR and noted some opportunities for parts of the report to be clarified to better inform the proposal. These include:

- *Thoroughly addressing comments from the Registered Aboriginal Parties*
 - We recommend that all comments from the Registered Aboriginal Parties (RAPs) are comprehensively addressed in the ACHAR. This is consistent with Heritage NSW consultation requirements.
 - We do not agree with Niche (2022) that it is appropriate for some comments to be addressed in the ACHMP prepared post-approval.

- In addition, we note that there appear to be some inconsistencies in how comments from the RAPs have been addressed and these should be reviewed.
- *Ensuring adequate archaeological assessment has been conducted*

The ACHAR could be strengthened by including:

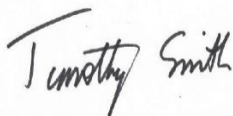
 - Additional detail on the location of archaeological survey transects in relation to topographic features and analysis of effective survey coverage. This is to demonstrate that all of the revised Area 5 has been adequately surveyed.
 - It is important that Area 5 has been thoroughly surveyed so that all potential Aboriginal cultural heritage impacts are known and can be considered.
 - Further discussion of the opportunities and risks involved in archaeological excavation of potential archaeological deposits pre and post approval.
- *Checking that the heritage significance assessments are well justified*
 - From our review, it is possible that the scientific values attributed to some of the recorded Aboriginal cultural heritage sites may have been underestimated.
 - We recommend that the significance assessment in the ACHAR is revisited. This is to ensure the significance assessments are robust and to aid the IMC commitment not to mine beneath sites of high significance.
 - Consideration of the Aboriginal cultural landscape needs to inform the significance assessment.

Even though the extent of harm has been reduced, the current project risks causing harm to Aboriginal cultural heritage sites, with identified sites being identified as a unique cultural landscape. We encourage IMC to consider options to further manage this risk to best protect the tangible and intangible Aboriginal cultural heritage values.

If you have any questions regarding these comments, please contact Corey O'Driscoll, Senior Assessments Officer, at Heritage NSW on (02) 6229 7079 and corey.odriscoll@environment.nsw.gov.au.

Please note that a separate response has been prepared by Heritage NSW in relation to considerations under the *Heritage Act 1977*.

Yours sincerely



Tim Smith OAM

Director, Assessments

Heritage NSW

Department of Planning and Environment

(As Delegate)

Date: 14 June 2022

Enclosure: Attachment A – Detailed Aboriginal Cultural Heritage Advice

ATTACHMENT 1: DETAILED ABORIGINAL CULTURAL HERITAGE ADVICE ON THE DENDROBIUM MINE EXTENSION PROJECT (SSI-33143123)

We have reviewed the following documents to prepare this advice

- South 32 (Illawarra Coal Holdings) 2022, Dendrobium Mine Extension Project – Environmental Impact Statement
- Attachment 1 – Secretary’s Environmental Assessment Requirements (SEARs)
- Attachment 10 – Summary of Mitigation Measures
- Attachment 12 – Independent Planning Commission and Agency Issues Reconciliation Table
- Appendix A – Subsidence Report, prepared by Mine Subsidence Engineering Consultants (MSEC), dated March 2022
- Appendix F – Aboriginal Cultural Heritage Assessment, prepared by Niche Environment and Heritage (Niche), dated February 2022
- Appendix M – Environmental Risk Assessment, prepared by Risk Mentor, dated March 2022
- Appendix S – Geotechnical Assessment, prepared by Gordon Geotechniques, dated February 2022.

1. Aboriginal Cultural Heritage advice was provided on the previous Dendrobium Extension Project

The Dendrobium Mine Extension Project was previously assessed by the former Department of Planning, Industry and Environment (DPIE, now DPE) in 2019 as a State Significant Development (SSD-8194). At that time, the Biodiversity and Conservation Division (BCD) provided comment on Aboriginal cultural heritage matters.

The NSW Independent Planning Commission (IPC) subsequently refused consent for the development application. In their refusal, the IPC identified Aboriginal cultural heritage as a key issue.

The IPC found that the project was likely to have unacceptable impacts on Aboriginal cultural heritage and that the significant, long-term and uncertain impact on ACH are not consistent with the principles of Ecologically Sustainable Development (ESD).

We are concerned that some matters raised by the IPC appear to not have been fully addressed in the EIS. These concerns are set out in further detail below.

2. Comments from the Aboriginal community need to be addressed

Niche (2022) consulted with the Aboriginal community by following the *Aboriginal Community Consultation Requirements for Proponents 2010*. There were two phases of consultation (2017-2018 and 2021-2022) owing to the modified project area.

As part of the second phase of consultation, IMC prepared a Cultural Values Consultation process to capture the intangible values of the project area and stories linked to the area. IMC should be commended for this. Heritage NSW recommends that this process continue for the duration of the project.

However, both iterations of the consultation process raised concerns by the RAPs. Illawarra Local Aboriginal Land Council (LALC) raised extensive concerns with the impacts of the project as part of the previous assessment and IPC determination. Several RAPs raised objects to the proposal. The general themes of these comments relevant to this assessment included:

- The potential unmitigated impacts to subsurface materials across the project area and the infrastructure areas more specifically.
- Continued involvement of the project RAPs for monitoring of subsidence and during surface works.
- There is a lack of survey across the infrastructure areas and areas. Without surveys being completed prior to approval there is an inability to comment on the significance of the areas before impacts occur.
- Details of future works (including surveys, excavation, and detailed recording [i.e., 3D mapping]) and long-term management of sites and artefact have not been presented.
- Subsidence may cause unpredictable direct and indirect impacts. Such impacts must be considered in the conservation of sites and their monitoring.
- Access to the cultural landscape should be provided to the RAPs through both Water NSW and IMC.
- The project area is of high cultural significance, with both intangible and tangible (sites, landscape, native vegetation, and waterway), which forms part of a wider cultural landscape. This boarder cultural landscape and continued impacts to it have not adequately considered
- There is a need to consider the Aboriginal cultural heritage (ACH) sites at the local, regional, and nation context.
- The notes recording face-to-face meetings did not accurately capture issues raised.
- Do not believe that the ACHAR meets the minimum requirements as set by Heritage NSW.

While responses were provided in the ACHAR to each of the concerns raised, we are concerned that in some instances the responses are inadequate. This includes referring a response to the proposed future ACHMP.

3. There are limitations in the archaeological survey coverage reported in the ACHAR

Heritage NSW advocates for robust archaeological assessment to inform significance and impact assessments. This includes ensuring that the RAPs have enough information so that they can provide informed comments.

We have identified some areas of the archaeological assessment presented in the ACHAR (Niche 2022) that we recommend are clarified:

- Detail the location of survey transects in relation to topographic features. We note for example that Figure 5a of the ACHAR indicates that large tracts of the project area may not have been surveyed, despite the predictive model stating that these areas are highly likely to contain Aboriginal heritage sites.
- We recommend that the ACHAR demonstrate that all of the revised Area 5 has been adequately surveyed so that all potential Aboriginal cultural heritage impacts are known and can be considered.
- Additional information is also needed in the ACHAR to show how proposed surface infrastructure locations have been surveyed, particularly in relation to the largest area of surface infrastructure, with Figure 5a of the ACHAR showing minimal survey paths.

- The Archaeological Report (Appendix A of the ACHAR) has not presented survey data as required by Requirements 9 and 10 of *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010). This information is needed to show whether survey coverage was adequate.
- During consultation, Illawarra LALC identified that upland swamps are an important cultural landscape. The upland swamps in Area 5 do not appear to have been archaeologically investigated.
- Additional surveys were conducted in 2021 aiming to relocate previously recorded sites. We note that several sites could not be relocated during these latest surveys.
- During these additional surveys, three previously unrecorded sites were identified. This constitutes approximately 10% of sites within and adjacent to the impact area. If approximately 10% of sites were identified in surveys that were not targeting new areas, there is a reasonable risk that a more sites may be identified in unsurveyed areas.

4. Potential Archaeological Deposits (PADs) need to be appropriately managed

There has been minimal consideration of potential archaeological deposits (PADs) within many of the rock shelters and across the project area. We recommend additional information be provided in the ACHAR to address the following:

- Limited consideration of PADs being present in open contexts, despite soil landscapes suggesting subsurface potential.
- Consider the risk of subsidence impacts on potential *in situ* archaeological deposits.
- Test excavations have not been undertaken as part of the EIS and are not recommended in the ACHAR. This means that the impacts to subsurface Aboriginal cultural heritage values from the project are unknown.
- There is a risk in allowing post approval excavation and potentially dating that impact will be approved to a site before the full significance is unknown. Heritage NSW sees this as a risk, particularly as there is limited potential to influence longwall design once approval is granted.

5. The significance assessment in the ACHAR needs to be revisited

We have identified some limitations in the significance assessment presented in the ACHAR. There is a risk that the scientific significance statements have been underestimated and we recommend that this section of the ACHAR is revisited and clarified.

- We note that concerns regarding the Significance Assessment were previously raised by BCD, with one example (Ricki Lee 2; AHIMS #52-2-1730) singled out. This site was then reassessed as being of moderate, rather than low, scientific significance, however no other changes were made.
- The current Significance Assessment gives the same level of scientific significance to an eroded, isolated artefact as most grinding groove sites and some rock shelters with art and deposit.
- We expect that eroded isolated artefacts would have relatively lower potential for scientific investigation. Conversely, if there is potential for *in situ* potential archaeological deposits at these sites then we would expect higher scientific significance and test excavation to establish the nature and extent of the deposit.

- Low scientific significance has been assigned based on the condition of rock art and grinding grooves. However, site condition does not necessarily reflect significance, though it can influence future management of the site.
- The number of rock art sites that contain a high number of motifs or rare forms indicate the potential for an important and unique cultural landscape not seen in other parts of NSW.
- Without a systematic and detailed critique of the wider cultural landscape, as well as thorough archaeological investigation, it is unclear how low scientific significance can be assigned to 87% of sites.
- In addition, there are inconsistencies in some of the significance assessments presented in the ACHAR. For example, some site details provided in Appendix A of the ACHAR contain additional features not captured in site type descriptions in the body of the ACHAR. These include:
 - Site cards that include description of deposit at Upper Avon 51 (AHIMS# 52-2-1756), Upper Avon 43 (AHIMS# 52-2-1780), Upper Avon 45 (AHIMS# 52-2-1782).
 - Site cards that detail artefact scatters at Upper Avon 52 (AHIMS# 52-2-1757) and Upper Avon 45 (AHIMS# 52-2-1782). The former contains a large surface scatter of approximately 55 artefacts.
 - The site M2D PAD 2 describes rock art panels.
- Not listing these additional site features in the body of the ACHAR could result in the RAPs not being aware of the complete range of site features and their potential significance.
- The site types should be updated throughout the report, and if needed, updated site cards must be provided to the Aboriginal Heritage Information Management System (AHIMS).
- The ACHAR (Section 6.4.2) states that aesthetic values are present in the intact nature of landscape and ecosystem. We recommend that the ACHAR further detail how the cumulative impact of the project may impact these values.
- A systematic and detailed regional assessment should be conducted to adequately address the scientific significance assessment.
 - This assessment needs to include descriptions of the commonly identified motifs within the region and how these relate to those identified within project area.
 - The regional assessment should take into account the rock art assessment of the Upper Nepean by Dr Julie Dibden (Dibben, J. 2019 – Drawing in the Land: rock art in the Upper Nepean, Sydney Basin, New South Wales, Terra Australis 49, Australian National University Press, Acton).

6. Additional management and mitigation measures are recommended

We recommend additional management and mitigation measures are considered in the ACHAR.

- The ACHAR states that methods for monitoring and, potentially, excavations will be determined post-approval via an Aboriginal Cultural Heritage Management Plan (ACHMP).

- We recommend that either additional detail of these measures is included in the ACHAR or that the ACHMP is prepared pre-approval.
- Neither Heritage NSW or the RAPs can determine if project impacts will be sufficiently mitigated without prior assessment of the proposed management options. We note that BCD raised similar concerns as part of the previous assessment, where it was requested that measures to reduce the risk of harm to Aboriginal cultural heritage values be included in a revised ACHAR rather than as part of an ACHMP.
- We recommend consideration of the following additional management and mitigation measures:
 - Vibration monitoring equipment to be placed at sites across the project area to assess the potential subsidence impacts and enable management of the sites prior to large scale impacts.
 - Plans for management of sites pre- and post-mining, including the long-term conservation measures of art and Aboriginal cultural heritage values across the project area.
 - Conservation measures, including but not limited to, detailed photography, recording, and 3D mapping of rock shelters and rock art prior to impacts
 - Assessment of grinding grooves utility.
 - Consideration of the cultural landscape, through land use models to characterise the nature of occupation across the project area and Southern Coalfields more broadly.
 - Remediation plans for direct and indirect impacts to Aboriginal cultural heritage sites.
 - Management options for any sites in the surface and ancillary infrastructure areas that cannot be avoided.
 - Test and salvage excavation methodologies to manage impacts to potential archaeological deposits as appropriate.
 - Creation and management of Conservation Areas.
 - Further detail of the proposed subsidence monitoring procedures and details of the baseline recording of sites.

7. Impact assessment and consideration of Ecologically Sustainable Development (ESD)

The IPC and Heritage NSW both commented that the previous assessment did not adequately meet the principles of ESD. The current assessment of ESD is similar to that provided for the previous assessment.

- The ACHAR (Section 7) argues that ESD has been addressed because the sites most likely to be impacted are of low scientific significance. However, as explained above, we have concerns about the accuracy of the significance assessments that may limit the reliability of this argument.
- If enough archaeological survey has not been conducted, there is a risk that the cumulative impact assessment may need to be revised.
- Without further survey of the impact area and potentially subsurface excavation, the presence and scientific values of the predicted sites are unknown and cannot be fully considered.
- The definition of harm used is limited to direct impact the art panel or grinding grooves, rather than shelter and deposit as a whole and excludes loss of significance and

cultural values. Heritage NSW recommends that the assessment of subsidence related impact should incorporate a holistic view of the entire shelter, rock platform, and cultural landscape to adequately assess the cumulative impact to the Aboriginal cultural heritage values across the project area and region.

- Direct and indirect impacts to rock shelters and rock platforms irreversibly damage the site and may accelerate the deterioration of the site and loss of cultural significance attached to the site.
- The RAPs raised concerns about the long-term impact of loss of access to Country has had on the cultural connection to the landscape. It was proposed that IMC, Water NSW, and the RAPs may be able to arrange for access to the area. However, subsidence impacts may render some sites unsafe, continuing their inaccessibility and limiting the ability for the local Aboriginal community to reconnect to an important cultural landscape. This point needs to be considered in the impact assessment and consideration of ESD.

8. We suggest that these comments could be addressed in a revised ACHAR

We suggest that an opportunity is provided to IMC to prepare a revised ACHAR to address the above comments.

The revised ACHAR needs to be provided to the RAPs as part of the continued consultation on this project. We recommend that RAPs are provided at least 28 days to comment on ACHARs. We note that this consultation would also provide an opportunity for a draft ACHMP to also be presented to the RAPs if available.

Heritage NSW would welcome the opportunity to review any revised ACHAR and draft ACHMP.