



Your reference: DA 14/98 MOD 13
Our reference: EF13/2605; DOC16/584614-16
Contact: Jason Price 02 6969 0700

The Planner
Resource Assessments
Planning Services
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Donnelley

Re Cowal Gold Operations – mine life modification to DA 14/98

I refer to your electronic mail of 17 November 2016 to the Environment Protection Authority (EPA) seeking written submissions on the Environmental Assessment (EA) that supports a modified development consent application lodged by Evolution Mining (Cowal) Pty Limited (Evolution) for their gold mine at Lake Cowal.

We have reviewed the information provided and determined that we have no objections to the proposal proceeding as described in the EA. If a modified development consent is granted by the Department of Planning and Environment (DPE) the EPA recommends that the conditions provided in Attachment 'A' are incorporated into the consent. We expect that all other existing conditions of consent will be retained in any modified approval.

Attachment 'B' contains our assessment of the EA, including justification for our recommended conditions of consent.

Please note that inclusion of our recommended conditions in any modified development consent granted by the DPE is important for our ongoing support of the proposal. It is expected that the EPA will be given an opportunity to review and comment on the DPE's draft conditions of consent for this proposal.

Where a modified development consent for the project is granted an application for a variation to Environment Protection Licence No 11912 held by Evolution for the mine will be required to be submitted to the EPA prior to any construction work or activities associated with the modified proposal.

If you have any further enquiries about this matter please contact Jason Price by telephoning 02 6969 0700.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Darren Wallett', followed by the date '6/12/16' written in blue ink.

DARREN WALLETT
Head, Griffith Unit
Environment Protection Authority

ATTACHMENT 'A'

We recommend that the following conditions are included in any modified development consent for DA 14/98.

Schedule 2

1. General

1.2 Limits on Approval

- (a) The Applicant may only carry out mining operations until 31 December **2032**.
- (c) The Applicant shall comply with the following maximum heights:
 - (i) Northern Rock Emplacement – 308 m AHD;
 - (ii) Southern Rock Emplacement – 283 m AHD;
 - (iii) Southern Tailings Storage Facility – **272** m AHD;
 - (iv) Northern Tailings Storage Facility – **264** m AHD;
 - (v) Perimeter Rock Emplacement – 233 m AHD; and
 - (vi) ***Mineralised stockpile adjacent to the Northern Rock Emplacement – 288 m AHD***

6. Air, Blast, Noise and Visual Impact Management

6.4 Noise Management

- (a) Acquisition upon request

Upon receiving a written request for property acquisition from the owner of any land listed in Table 7, the Applicant shall acquire the land in accordance with procedures in condition 8.3.

Table 7: Land subject to acquisition upon request

| |
|----------|
| Westella |
| Westlea |

Note: To interpret the locations referenced in Table 7, see the map in Appendix 6.

- (b) Additional Noise Mitigation

Upon receiving a written request from the owner of the residences listed in Table 7 **or from the owners of Lakeview III, Laurel Park, Bramboyne, Caloola II and The Glen listed in Table 8**, the Applicant shall implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the development on the residence.

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

(c) Impact Assessment Criteria

The Applicant shall ensure that the noise generated by the development does not exceed the noise impact assessment criteria in Table 8 at any residence on privately owned land.

Table 8: Noise Impact Assessment Criteria dB(A) L_{Aeq} (15 min)

| Land | Day / Evening / Night |
|---|-----------------------|
| Lakeview III and Laurel Park | 39 |
| Bramboyne, Caloola II and The Glen | 38 |
| Foxham Downs II, Lakeview and Lakeview II | 37 |
| All other privately owned land | 35 |

Note: To interpret the locations referenced in Table 8, see the map in Appendix 6.

Noise generated by the development is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time to time). Appendix 5 sets out the meteorological conditions under which this criteria apply, and the requirements for evaluating compliance with these criteria.

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

ATTACHMENT 'B'

Air Quality

The primary concern for this development in terms of air quality is the potential for impacts from dust generated from construction activities, wind erosion of the tailings storage facilities and waste rock emplacements and dust generated by the mobile fleet.

The methodology used in the Pacific Environment Limited Air Quality and Greenhouse Gas Assessment dated November 2016 has been completed generally in accordance with the EPA guidelines "*Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*".

The dispersion modelling results indicate predicted emissions at surrounding sensitive receptors from modified operations at the Cowal Gold Operations mine (CGO) comply with all relevant incremental, annual and 24 hour criteria and advisory standards for particulate matter less than 10 micrometres, particulate matter less than 2.5 micrometers, total suspended particulates and dust deposition.

The air quality assessment predicts little change to existing impacts for sensitive receptors and the proposed modification does not propose any additional dust monitoring and the EPA accepts that based on analysis of the dispersion modelling, the existing air quality monitoring program is sufficient.

Noise

The Renzo Tonin & Associates 'Noise and Blasting Impact Assessment' (NIA) dated November 2016 was completed generally in accordance with the New South Wales Industrial Noise Policy (INP).

The ambient background noise levels in the absence of the CGM are assessed at 30dB(A) L90 (15 minute) which is consistent with pre-mine noise monitoring.

Under worst case scenario conditions (winter temperature inversions – a significant weather feature at Lake Cowal) the modelling from the NIA predicts noise impacts from plant and vehicle movements from this proposal will exceed the project specific noise criteria of 35dB(A) LAeq (15 minute) at 10 residential receptors. The proposal also exceeds the recommended night time sleep disturbance noise criteria of 45dB(A) L1 (1 minute) at 2 residential receptors.

The INP indicates that noise levels above the project specific noise criteria are considered intrusive and unacceptable and that where project specific criteria are exceeded all feasible and reasonable noise mitigation measures should be implemented, to reduce noise impacts back towards the project specific noise criteria.

The NIA considered several mitigation measures including replacing the existing fleet, attenuation of noise by retro fitting vehicles with noise dampening articles and creating barriers between noisy vehicles and receptors. These mitigation measures were considered unreasonably expensive and not effective.

Based on there being no further feasible and reasonable measures that can be applied to mining activities the Applicant has proposed mitigation measures consistent with the NSW Government's *Voluntary Land Acquisition and Mitigation Policy*. In accordance with this policy and the predicted noise impacts, the EPA expects 2 residents in the Noise Affection Zone will be assigned acquisition rights (these 2 residences are also the exceedances to the sleep disturbance criteria) and 5 residents in the Noise Management Zone will be offered acoustic mitigation measures at the receptors residence. The EPA has recommended these measures be included as conditions of consent.

The remaining 3 residential receptors impacted above the project noise specific criteria are only predicted to be up to 2dB(A) above the criteria and should not be subject to any noticeable increase in noise impacts.

Ground and Surface Water

The primary risk to the environment from this activity is the contamination of groundwater with cyanide from the tailings storage facilities (TSF's). Several seepage control measures have been incorporated into the design and operation of the TSF's and current groundwater monitoring at the CGO mine indicate that there is no trend that suggests cyanide has leached from the tailings storage facilities (TSF's) into surrounding groundwater.

The potential for cyanide, other chemical compounds and heavy metals from the TSF's to migrate beyond the CGO mining lease is unlikely due to low permeability soils and retardation from sorption processes. Contaminants associated with any seepage are modelled (and based on observed flows) to flow to the final pit void, which becomes a long term sink for all groundwater within the mining lease.

The lacustrine sediments that form the lake bed have a very low vertical permeability and act as an aquitard between lake water and groundwater aquifers, preventing any groundwater movement between the pit void and the lake. Monitoring at the CGO mine during lake fill events in 2012 and 2016 provide evidence of the hydraulic separation of the mine and the lake.

Proposed surface water management measures (primarily directing clean rainfall runoff from undisturbed areas away from the mine path) will ensure negligible impacts on surface water quality. Lake Cowal is protected from the mining activities through a series of bunds and no water from the mine site is permitted (through development consent conditions) to be discharged or released to Lake Cowal.

Groundwater and surface water impacts from potential mining activities are monitored through extensive water quality monitoring programs.

Waste

There is no change to the height or footprint of the waste rock emplacements however the southern and northern TSF's will be subject to additional lifts and eventually merged into 1 TSF which will incorporate a rock fill buttress cover into the ongoing construction of the TSF.

The EPA have no concerns in relation to the continued management and operation of these structures or the monitoring associated with them as detailed in the Environmental Assessment (EA). We have requested the proposed heights are capped to protect surrounding receptors from the noise impacts associated with their construction and movement of fleet around these structures. Noise modelling predictions presented in the EA are based on these maximum heights and related vehicle fleets.