



Your reference: DA 14/98 MOD 11
Our reference: SF13/4737; DOC13/68624-01
Contact: Jason Price 02 6969 0700

The Environmental Planning Officer
Mining Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Ms Smith

Re Cowal Gold Mine Project – extension modification to DA 14/98

Thank you for your electronic mail dated 27 September 2013 to the Environment Protection Authority (EPA) seeking written submissions on the Environmental Assessment (EA) that supports a modified development consent application submitted by Barrick (Cowal) Limited for their gold mine at Lake Cowal.

We have reviewed the information provided and determined that we can only support the proposed modification through the inclusion of specific conditions to mitigate the likely noise impacts on surrounding receptors.

If the modified development consent is approved by the Department of Planning and Infrastructure (DoPI) the EPA recommends that the conditions provided in Attachment 'A' are incorporated into the consent to address our concerns in relation to noise impacts. We expect that all other existing project approval conditions relating to other environmental issues 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 DoPI is important for our ongoing support of the proposal. The EPA expects we will be given an opportunity to review and comment on the DoPI'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 Barrick (Cowal) Limited for the mine will also be required to be submitted to the EPA prior to any construction work or activities associated with the proposal commencing.

If you have any further enquiries about this matter please contact Jason Price by telephoning 02 69690700.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Darren Wallett', written over a horizontal line.

DARREN WALLETT

Head, Griffith Unit

Environment Protection Authority

5/11/11

ATTACHMENT 'A'

We recommend that the following conditions are included in any modified development consent.

Operational

- Operational mining activities must not occur post 31 December 2024.
- The maximum permitted height of the northern waste rock emplacement is 308 metres Australian Height Datum (AHD).
- The maximum permitted height of the southern waste rock emplacement is 283 metres AHD.
- The maximum permitted height of the northern tailings storage facility is 248 metres AHD.
- The maximum permitted height of the southern tailings storage facility is 255 metres AHD.
- Embankment lift works at the tailings storage facilities must only occur between 7.00am and 6.00pm.

Noise

Acquisition upon request

- Upon receiving a written request for property acquisition from the owner of any property listed in Table 6 the applicant must acquire the property.

Table 6

Coniston
McLintock
Westlea

- If the noise generated by the development exceeds 40 dB(A) LAeq _(15 minutes)¹ when measured at any residence on privately owned land, or on more than 25 percent of privately owned land not located within Lake Cowal,
 - the applicant shall advise the owner of the property that they have acquisition rights, and
 - must acquire the property upon receiving a written request for property acquisition from the owner of the land.
- Within three months of receiving a written request from the owner of any land with acquisition rights the applicant must make a binding written offer to the land owner based on current market value as if the property was unaffected by the development.

In addition to the unaffected property market value the applicant's offer must include compensation for relocation and any expenses associated with the acquisition.
- If the applicants written binding offer is not accepted by the land owner, the applicant must request the Director General (Department of Planning and Infrastructure) to resolve the dispute through an independent valuer².

1. Measured in accordance with the New South Wales Industrial Noise Policy.

2. The EPA expects that acquisition dispute conditions set out at condition 11.5 of the current development consent will be retained in any approval granted for this modification.

- The property owner may withdraw the request for land acquisition at any time in this process.

Noise mitigation measures

- Upon receiving a written request for noise mitigation measures at residential premises from the owner of any property listed in Table # (insert relevant table number), the applicant must arrange the commencement of the physical implementation of noise mitigation measures within 3 months.

Table #

Coniston	Westlea
McLintock	Laurel Park
Gumbelah	The Glen
Bungabulla	Bramboyne

Note: Noise mitigation measures include double glazing of windows, the installation of insulation in walls and ceilings and/or air conditioning.

Noise limits

- The applicant must ensure that noise associated with the development does not exceed the noise limits at surrounding residential premises detailed in Table 8.

Table 8

Location	Day / Evening / Night dB(A) LAeq (15 minute)
Coniston	41
Westlea	40
McLintock	39
Laurel Park	37
The Glen	36
Gumbelah	36
Bungabulla	36
Bramboyne	36
All other residences	35

Construction noise

- All construction work at or associated with the development must only be conducted between the following hours:
7.00am to 6.00pm Monday to Friday and 8.00am to 1.00pm Saturdays.

Blasting

- The applicant must ensure that blasting associated with the development does not exceed the blasting limits detailed in Table 5.

Table 5

Location	Time of Blasting	Airblast overpressure (dB(Lin Peak))	Ground Vibration (mm/second)	Allowable exceedence
Residential premises on privately owned land	Any time	120	10	0%
	Day	115	5	5% of the total number of blasts over a 12 month period
	Evening	105	2	
	Night	95	1	
	Sundays and Public Holidays (24 hours)	95	1	

ATTACHMENT 'B'

Air Quality

The primary concern for this development in terms of air quality is the potential for impacts from dust generated from the construction of large stockpiles, the tailings storage facilities and waste rock emplacements. Wind erosion of these structures and dust generated by the movement of the mobile fleet around them contribute to the air quality impacts of the development.

The methodology used in the Pacific Environment Limited Air Quality Impact Assessment dated September 2013 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 continuing and modified operations at the Barrick Cowal Gold Mine (CGM) are minor and comply with all relevant 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 impact assessment for 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 and Blasting Impact Assessment

The 'Noise and Blasting Impact Assessment' (NIA) dated September 2013 undertaken by SLR Consulting Australia Pty Ltd 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 (night time and evening 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 eight (8) residential receptors. The proposal also exceeds the recommended night time sleep disturbance noise criteria of 45dB(A) L1 (1 minute) at three (3) residential receptors.

The INP indicates that noise levels above the project specific noise criteria are considered intrusive and unacceptable and that where project specific noise 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, retro fitting the existing fleet with noise dampening articles and creating earthen barriers between mobile fleet pathways and receptors. These mitigation measures were considered too expensive and not effective.

The NIA and CGM do not propose to implement any additional mitigation measures to what is currently in place at the CGM site. It is questionable whether the benefits to the community of continued mining at CGM then outweigh noise (and other) impacts upon them.

Based on there being no further feasible and reasonable measures that can be applied on site, CGM have proposed mitigation measures at the receptor so they can continue mining operations.

CGM proposes (through the modified development consent approval) to offer one (1) residential receptor with acquisition rights and seven (7) residential receptors with noise mitigation measures. The EPA does not support this position.

Background to existing noise limits

In previous CGM development consent modification applications (E42 Modification; and the subsequent E42 Modification – Modified Request) which was determined in March 2010, the EPA agreed to allow an increase in noise impacts above the project specific noise criteria of 35dB(A) at ten (10) surrounding residential receptors. The EPA's agreement was based on those receptors impacted above the project specific noise criteria receiving acquisition rights (Coniston, McLintock and Westlea) and the seven (7) other residents receiving architectural rights.

However, the CGM chose not to operate as stated in the Environmental Assessment (EA) for the E42 Modification – Modified Request, and the residents at Coniston, McLintock and Westlea potentially suffered unacceptable noise exposure impacts of up to 9dB(A) above the project specific noise criteria without having access to acquisition rights due to clauses in the modified development consent that tied the acquisition right to the CGM mobile fleet size.

Upon receiving a series of noise complaints from one of these residents and confirming CGM's mobile fleet size, the EPA became aware that due to the wording of the condition specifying acquisition rights in the modified project approval, the government (including an EPA licence) had authorised intrusive noise impacts on this resident (and two (2) others) with no avenue of appropriate recompense for the unreasonable noise impacts.

Consequently for the EPA to support the current proposed modification, the residents at Coniston, McLintock and Westlea must receive the acquisition rights upon project approval given the noise impacts on their properties and based on the following.

- Significant portions of these properties are in the affectation zone [>40 dB(A)].
- The EPA assessment of the NIA modelling is that it is marginal between the three (3) residential properties. Modelling suggests there is 2dB(A) difference between each location (39 to 41). For compliance purposes 2dB(A) does not represent a discernable difference under the INP.
- Modelling of the CGM night time sleep disturbance impacts indicated that the criteria of 45dB(A) LA1(1 minute)) is exceeded at each of these three (3) locations.
- The previous noise modelling for the CGM in development applications titled 'E42 Modification' and 'E42 Modification – Modified Request' has not proven completely accurate. The noise impact assessment modelling presented in these applications indicated that when the mobile equipment fleet was increased to its maximum (years 6 to 11 of the mine) the worst case scenario at Westlea would be a 41dB(A) LAeq (15 minute) impact from mining activities.

Advice from CGM and an independent audit established that the mobile fleet was never increased as described in the E42 noise impact assessments yet still exceeded the noise limit at Westlea by 2dB(A) in August 2012 when measured at 43dB(A) – SLR Consulting "CGM Mine Operation Noise Monitoring" report dated October 2012.

- Noise impacts from the CGM have increased at these receptors and background noise levels have been measured at night up to 8dB(A) above pre-mine background levels.
- Despite no increase in the mobile fleet the SLR Consulting "CGM Mine Operation Noise Monitoring" report dated September 2013 found "Noise levels monitored in August 2013 were generally higher than the noise levels monitored during the previous year".

If acquisition rights are not assigned to the property owners at Coniston, McLintock and Westlea, the EPA's alternative position is to return to the pre E42 Modification noise conditions which do not permit noise impacts above the project specific criteria of 35dB(A).

The remaining residential receptors impacted above the project noise specific criteria (Bramboyne, Bungabulla, Gumbelah, Laurel Park and The Glen) are only predicted to be up to 2dB(A) above the project specific noise criteria however this is up to 7dB(A) above pre-mine background levels and they should receive the option to implement the mitigation measures that are already currently available to them in the existing development consent and as detailed in Attachment 'A'.

Ground and Surface Water

Current monitoring of the tailings storage facilities at the CGM indicate that there is no consistent 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 CGM mining lease is unlikely. 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 of Lake Cowal 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.

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 programmes.

Waste

The northern waste rock emplacement is proposed to be raised an additional 42 metres in height to an Australian Height Datum (AHD) level of 308m and the southern waste rock emplacement is proposed to be raised an additional 33 metres in height to an AHD level of 283 metres.

The northern tailings storage facility is proposed to be raised an additional 5 metres to an AHD level of 248 metres and the southern tailings storage facility is proposed to be raised 7 metres to an AHD level of 255 metres.

We 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 the nominated heights in the EA to protect surrounding receptors from the noise impacts associated with their construction and movement of fleet around the structures. Noise modelling predictions presented in the EA are based on these maximum heights.