

28 August 2019

WM Project Number: 18448
Our Ref: BSC280819 NG
Email: DDrum@blayney.nsw.gov.au

Daniel Drum
Blayney Shire Council
PO Box 62
BLAYNEY NSW 2799

Dear Daniel

Re: Blayney Quarry - Noise Blasting and Air Review

INTRODUCTION

Wilkinson Murray were requested to review the noise, blasting and air quality reports associated with a proposed hard rock quarry on Lot 2, DP847740, 12 Grehamstown Road, Blayney. The initial review requested further clarification from the applicant with respect to noise including a telephone conversation with Oliver Muller of Muller Acoustic Consulting and the provision of additional noise calculations. The air quality assessment was conducted by Ramboll, Report No. 865/03.

Neil Gross undertook the Noise and Blasting review. John Wassermann undertook the air-quality review. Brian Clarke considered the greenhouse Gas emissions.

The outcome of this process is that we consider the quarry can be operated to meet the recommended licence conditions and limits of the EPA provided all the commitments made by the applicant and conditions imposed by Council relating to managing potential impacts are documented in an approved Plan of Management and are adhered to during operations.

NOISE ASSESSMENT

We have done a preliminary read through the noise report. We believe MAC are reputable and generally know how to assess noise. A few comments

- We assume you have confirmed that the applicant has identified the surrounding receivers correctly.
- They have used the correct Noise Policy for Industry
- Whilst they measured background noise over the Easter period, which may be atypical it doesn't affect the establishment of a criteria of 40dB which we would agree with for daytime operations
- They have undertaken a wind analysis, which indicates enhancement is not required to be considered. However, they haven't presented results showing how much this would increase noise by when it does occur. Whilst this isn't strictly required we prefer a more robust approach to dealing with weather.
- Their equipment noise levels generally look reasonable and at the lower end of the range with the exception of processing plant and possibly the drill. For a hard rock quarry we would expect levels of the processing plant at least 5dB higher unless the plant includes specific partial

enclosure which isn't discussed. This may result in non-compliance of the 40dB limit subject to the location of this plant.

- It is not clear where they have located plant in the two operational scenarios and at what elevation it is located and the RL of the top of the amenity bund. This is not clear, unless they are located at the yellow dots, which then aren't at the highest RL of the extraction area which is RL 910. We would suggest more scenarios are needed to reflect the worst-case conditions for location of plant within the extraction area to the receivers in different directions and also so a better understanding of the duration of each stage is understood. This may result in exceedances of 40dBA. It is possible some exceedance of 40dB is acceptable it is only going to be for short periods near the beginning.
- Similarly, there is one construction scenario with plant located close to the site entrance and a road truck as a line source. Other construction scenarios for example the amenity bund is also recommended, to confirm criteria are achieved.

We recommend you seek further clarification from the applicant as follows.

- Following a brief conversation between Neil Gross and Oliver Muller can the applicant clarify and provide further details in relation to the following aspects of the noise assessment to allow the peer review to be completed.
- Your equipment noise levels generally look reasonable and at the lower end of the range with the exception of processing plant and possibly the drill. For a hard rock quarry we would expect levels of the processing plant at least 5dB higher unless the plant includes specific partial enclosure which isn't discussed. Please provide the source of noise data and further justification for use of these levels.
- It seems the scenarios developed are limited to a typical level over the duration of the quarry, rather than scenarios reflecting the worst-case noise levels at each receiver. We would suggest more operational scenarios are needed to reflect the worst-case conditions for location of plant within the extraction area to the receivers in different directions and also a better understanding of the duration of each of these stages. This may result in exceedances of 40dBA and will assist Council in understanding the potential impacts. Justification for the selection of scenario should be included.
- Noise predictions have only been provided for neutral weather conditions, however Council wish to understand the operational noise levels likely under adverse weather conditions at each residence (3m/s downwind) for each scenario. This will assist Council in understanding variability in noise levels.
- Similarly, there is only one construction scenario with plant located close to the site entrance and a road truck as a line source. Other construction scenarios to show the typical worst-case predictions at each receiver in relation to the access road and for example the building of the amenity bund is also recommended, including any cumulative impacts from contemporaneous road and bund construction to confirm criteria are achieved.
- Since the current report only shows the criteria of 40dB can just be achieved, the requirements above are likely to show exceedance of criteria. Hence discussion around duration of exceedance, options for mitigation should be included, which will form part of an approved Plan of Management.

The subsequent report addressed some issues, but still lacked clarification of some aspects.

- In relation to the equipment Sound Power Levels I recommend that strict noise limits are applied to this equipment and requirement to test within the first 3 months of operation to confirm they are meeting the limits during normal operations.
- In relation to the modelled operational scenarios, I don't believe they have responded adequately. It doesn't appear that the model has included mobile plant operating at the existing high point or also at the closest points to main group of receivers in building the amenity wall, which was ignored as a construction scenario and not addressed in the operational scenario 1 which had mobile plant further to the north, presumably partially shielded by the high point. Refer attached plan showing the orange areas where I consider the Dozer and Loader should be located and predictions undertaken. I acknowledge these scenarios may only occur for a short period at the beginning of the project, but the report should have provided the noise levels and if there were any predicted non compliances then discussed these in terms of likely duration and any further options for mitigation.
- Similarly, for construction noise, the two ends of the access road may not be representative of a worst case, given the topography. Modelling should be undertaken for the plant located at a high point with least shielding. Refer attached plan showing the orange area.

The final assessment provided some additional scenarios and confirmed with restrictions on operations that the limits could be achieved. Our comments on this review are summarised as follows

- The applicant hasn't confirmed the predicted noise levels during worst case operations but have determined that for operation in the yellow zone only 1 D8 Dozer or equivalent would meet the criteria (ie normal operations would exceed) and they are happy to accept a condition to this effect.

Recommended Conditions in addition to EPA GTA.

- Council should now condition the Plan of Management to demonstrate how it will manage stopping all other activities on site, if there is a D8 dozer operating in the yellow zone.
- Council should condition testing of all equipment to be used on site, prior to production use, to confirm it meets the sound emission levels nominated in the MAC report.
- Council may wish to condition monitoring of noise at the nearest residences within the first 3 months or in response to complaints.

BLASTING ASSESSMENT

In terms of the blasting then the report seems fine and predicted overpressure and vibration levels appear reasonable. The only minor issue is the orientation of blast faces relative to receivers in different directions and how the calculations have allowed for this.

In reality blasting comes down to the trial blasts and measurements with refinement of design and ongoing monitoring. I suggest a condition of approval relating to the monitoring and reporting about trial blasts is the best way of dealing with this aspect. With a further condition for monitoring / reporting all production blasts.

AIR QUALITY ASSESSMENT

Two scenarios were modelled. Scenario 1 –dozer rip and push (no drill/blast), no material processing and an annual extraction rate of 150,000tpa and Scenario 2 –drill and blast operations with in-pit material processing, and an annual extraction rate of 250,000tpa.

The report has identified airborne particulate matter as the major source of air pollution, which is appropriate;

The report has identified the appropriate RSP, PM10, PM2.5 and dust deposition criteria;

The report has used ambient air quality monitoring data from Bathurst to represent the Blayney area, which is appropriate;

Meteorological data for air quality modelling was derived from measured data from the McPhillamys Project site, approximately 6.5km east-northeast of the Proposal Site, BoM data from Orange Airport and the CSIRO meteorological model TAPM. This is appropriate.

The dust emissions inventory was derived from US-EPA AP-42 emission factors, which is appropriate;

The total site emissions estimated (kg/annum) appear commensurate with the quarry size;

The modelling was conducted using the AERMOD dispersion model, which is appropriate;

Analysis of cumulative impacts accounting for existing air quality demonstrated that predicted Project-only increments are comparatively low against the ambient background levels;

We agree with the conclusion of the assessment that, "the potential for cumulative criteria exceedance in the vicinity of the Proposal is low";

We are of the opinion that particulate matter in the form of air pollution can be managed from the site; and

It is recommended that the project be required to monitor dust deposition around the site and have a dust management plan to manage day to day dust from the site and any potential episodic dust events (high wind dust storms).

GREENHOUSE GAS ASSESSMENT

The EIS indicated that greenhouse gas emissions are likely to be negligible. For the purpose of Clause 14(2) of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, we confirm that a development of this scale would involve negligible greenhouse gas emissions and that detailed modelling is not required for an assessment.

We trust this information is sufficient. Please contact us if you have any further queries.

Yours faithfully

WILKINSON MURRAY

A handwritten signature in black ink, appearing to read 'N.L. Gross', with a stylized flourish at the bottom.

Neil Gross
Director