Our reference: SF17/8656; DOC19/590526

Mr Anthony Barnes
Senior Environmental Assessment Officer
Department of Planning, Industry and Environment
GPO Box 39
SYDNEY NSW

16 August 2019

Dear Mr Barnes,

WALLERAWANG QUARRY DA344-11-2001 SSD MOD 3

I refer to the request for advice received from the Department of Planning, Industry and Environment on 8 July 2019 in relation to the Wallerawang Quarry Modification 3, including the Statement of Environmental Effects (the SEE) prepared by Umwelt (Australia) on behalf of Walker Quarries (the proponent) and dated 20 June 2019.

The Wallerawang Quarry (the quarry) is located alongside the Coxs River, which is within Sydney's drinking water catchment. The quarry is licensed by the Environment Protection Authority (EPA) under environment protection licence no. 13172 (the licence).

The EPA has reviewed the information provided and understands that the nature of the proposal remains similar however the scale of the proposal and its environmental impacts would increase substantially as summarised below:

- The proposal seeks to maintain the existing:
  - Maximum production rate of 500,000 tonnes per year;
  - Workforce of thirteeen local and two non-local staff;
  - Operating hours.
- Scale and impacts of the proposal seeks to increase:
  - Ten-year approved quarry lifespan by thirty years, from July 2020 to July 2050;
  - Product extraction by 12 to 15 million tonnes;
  - Depth of extraction to below the water table;
  - Depth of approved extraction by 70 metres, from 930 metres to 860 metres AHD (existing extraction depth is 950-55 metres AHD);
  - Area of extraction from 6.5 hectares to 13.3 hectares;
  - Area of disturbance proposed is not quantified but understood by the EPA to approximately double to approximately 30 hectares with limited progressive rehabilitation (the SEE states that the current approved disturbance area is 16.5 hectares with 14 hectares disturbed, and an additional 14.1 hectares of native vegetation proposed to be cleared);
  - Relocation of ephemeral second-order tributaries of the Coxs River due to expansion of the extraction area requiring relocation of the stockpile area (the SEE variously uses drainage lines or drainage line); and
  - Construction (boring) of a permanent drain from the final quarry void to discharge untreated site runoff and groundwater to the Coxs River.

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Based on the information provided in the SEE, the EPA does not consider that the likely and potential water impacts of the proposal on the Coxs River and its catchment have been adequately identified, assessed and mitigated. More detailed comments on the water impact assessment are included as **Attachment A**.

The EPA has been progressively working with licensees within the Sydney Drinking Water Catchment to remove discharges that potentially impact the quality of Sydney's drinking water and/or the ecological values of the Coxs River and its catchment. Based on the information currently available to it, the EPA is concerned proposed expansion to the quarry has the potential to adversely impact the quality of water within the Coxs River catchment. As such, the EPA does not support the proposed the proposed expansion having regard to the potential impact on tributaries of the Coxs River and the drilling through the side of the quarry void to allow discharges un-treated water into the Coxs River

Recommended conditions of consent to mitigate noise and air impacts are included as **Attachment B**.

The EPA considers that due to the uncertainties identified in the proposal in relation to market demand and operations and as the long-term environmental impacts of the proposal cannot be identified, assessed and mitigated with adequate certainty, especially in relation to water impacts, a staged approach to environmental impact assessment and approval is more appropriate than approval which permits activities until 2050.

Should you have any further enquiries in relation to this matter, please contact the Central West (Bathurst) Office of the EPA by telephoning (02) 6333 3800 or by emailing central.west@epa.nsw.gov.au.

Yours sincerely

SHERIDAN LEDGER
Unit Head Central West Region
Environment Protection Authority

Attachment A: EPA comments
The EPA is unable to issue complete recommended conditions of consent as the water discharge assessment is not adequate, see comments below.

Surface water assessment

Coxs River water quality objectives and site discharges
The SEE states (section 4.7.2.2) “in the absence of WQOs generated through additional monitoring of water quality with the Coxs River, the Applicant would continue to manage operations to ensure any discharge of water complies with the limits nominated in EPL 13172.”

The EPA does not consider this to be an appropriate assessment. The EPA considers that the assessment must identify all likely non-trivial pollutants in site discharges, taking into consideration any changes in the material extracted and relevant factors such as pH, rather than assume that the existing licence regulates all non-trivial pollutants. The assessment should appropriately account for upstream activities in the Coxs River catchment (for example, power station and coal mine discharges) since the upstream water quality may not be suitable for developing site discharge criteria, for example the current licence limit for sulfate of 250 milligrams per litre, which has been proposed to be maintained, is not suitable and likely reflects upstream pollution rather than best environmental practice for site discharges.

Recommendation
The proponent engages an independent scientific organisation to undertake a water quality monitoring program, consistent with ANZECC using a reference point endorsed by the EPA and representative data, to inform the agreed water quality objectives, site discharge criteria and site monitoring program.

Coxs River tributaries diversion
The SEE provides minimal discussion of the operational alternatives considered to prevent expansion of the stockpiling area over a tributary/tributaries of the Coxs River. The EPA considers that prevention of impacts to the Coxs River catchment is preferable to mitigation of those impacts as proposed by the proponent (through the design and implementation of erosion and sediment controls consistent with the ‘Blue Book’).

Recommendation
The proponent reviews the proposal to prevent and minimise impacts to the Coxs River catchment.

Washing circuit
The EPA considers that the assessment should consider the potential for this catchment to be a nil discharge dirty water area with a lower frequency of managed overflows.

Recommendation
The proponent reviews the site water management plan and establishes best practice management of the washing circuit.

Sediment settling agents (ecotoxicity)
The EPA considers that the proponent should follow best practice in the use of sediment settling agents. The SEE proposes the use of an anionic acrylamide copolymer flocculent (Hydrobond8 HB-4118) prior to controlled discharges from the quarry sediment basins and provides that this flocculent has a median lethal concentration (LC50) greater than 100 milligrams per litre for fish and half maximal effective concentration (EC50) greater than 100 milligrams per litre for water invertebrates. If managed appropriately, this flocculent would have a relatively low toxicity risk however this has not been confirmed.

Recommendation
The proponent reviews the site water management plan and establishes best practice use of sediment settling agents. The review should consider:

- Use of alternative settling agents based on their level of risk (for example, suitable ecotoxicity information) and adoption of an agent with known lower toxicity (for example, gypsum);
- Practices that would result in low risk of residual settling agents being discharged to the Coxs River;
- Monitoring of active constituents and sediments, and appropriate discharge trigger values.

Domestic wastewater
The SEE does not consider domestic wastewater management. Sustainable reuse, for example a dedicated effluent irrigation area based on water and nutrient uptake calculation, is preferred to discharge to waters however neither current nor proposed domestic wastewater management is discussed.

Recommendation
The proponent reviews the site water management plan and establishes best practice domestic wastewater management.

Groundwater assessment

Extraction below the water table
The SEE groundwater modelling (Appendix 8) provides the inferred water table at between 900 metres AHD and 870 metres AHD, and the average level of the Coxs River at 852.5 metres AHD. The current approved pit base is 930 metres AHD, which is well above the inferred water table, and the proposed pit base is 860 metres, which is well below the inferred water table. The sequencing figures suggest that the proposed pit base would reach 900 metres AHD, being the inferred water table, around 2035 (Figure 3.7).

The SEE does not include a groundwater quality impact assessment and mitigation measures which would be implemented to prevent the pollution of groundwater have not been provided.

Recommendation
The EPA does not support the extraction of product below the water table. The EPA considers that a staged approach to environmental assessment and approval is appropriate to prevent unacceptable environmental impacts.

Rehabilitation
The SEE suggests that limited progressive rehabilitation will occur prior to 2050 (section 2.10) due to the proposed quarrying sequencing which will result in a final void that will discharge untreated groundwater and site runoff to the Coxs River (section 2.10.2) post the completion of activities at the quarry.

Recommendation
The EPA does not support construction (boring) of a permanent drain from the final quarry void to discharge untreated site runoff and groundwater to the Coxs River. The EPA considers that a staged approach to environmental assessment and approval is appropriate to prevent unacceptable environmental impacts.

Attachment B: EPA recommended conditions of consent

The EPA notes that the licence is due for a statutory five-year review in 2019 and that some or all of the recommended conditions of consent may be incorporated into that review, independent of the proposal.

Noise

1. Noise generated at the premises must not exceed the noise limits in the Table below.

Location	Lot and DP number	NOISE LIMITS dB(A)		
		Day $L_{Aeq\ (15\ minute)}$	Evening $L_{Aeq\ (15\ minute)}$	Night $L_{Aeq\ (15\ minute)}$
987 Great Western Highway Marrangaroo	Lot 7, DP872230	43	39	35
3 Cypress Place Wallerawang	Lot 20, DP874020	43	39	35
2 Beacroft Place Wallerawang	Lot 15, DP874020	43	39	35
20 Rocky Waterhole Drive Wallerawang	Lot 105, DP1085560	43	39	35

- Noise – 'sound pressure levels'.
- Noise Policy for Industry - the document entitled "Noise Policy for Industry" published by the Environment Protection Authority in October 2017."
- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays,
- Evening is defined as the period from 6pm to 10pm all days,
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays
- These noise limits apply under the following meteorological conditions:

Assessment Period	Meteorological Conditions
Day	Stability Categories A, B, C and D with wind speeds up to and including 3m/s at 10m AGL
Evening	
Night	Stability Categories A, B, C and D with wind speeds up to and including 3m/s at 10m AGL; and / or Stability Category F with wind speeds up to and including 2m/s

- The noise limits applicable during conditions not stipulated in the meteorological conditions table are the limits in the noise limits table positively adjusted by 5dB.
- The meteorological conditions are to be determined from meteorological data obtained from the meteorological weather station at Marrangaroo (Defence), or an alternative nominated by the proponent and agreed by the EPA and the consent authority; and
- Stability Category shall be determined by the sigma-theta method referred to in Fact Sheet D of the Noise Policy for Industry.

2. To determine compliance:
   a) with the noise limits, the noise measurement equipment must be located:
      - at the most affected point at a location where there is no dwelling at the location; or
      - at the most affected point within an area at a location prescribed by condition L6.6(a).
      - approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or

- within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
- within approximately 50 metres of the boundary of a National Park or a Nature Reserve.

b) A non-compliance will still occur where noise generated from the premises in excess of the appropriate limit is measured at a location other than the area prescribed above and/or at a point other than the most affected point at a location.
c) Compliance measurements should not be undertaken during rain or where wind speed at microphone level will affect the acquisition of valid sound pressure level measurements.
d) The modification factors in Fact Sheet C of the Noise Policy for Industry must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

3. Where directed by the EPA, a noise compliance assessment report must be submitted within 60 days. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:
   a) attended noise monitoring at the locations and for the time period specified by the EPA;
   b) an assessment of compliance with noise limits; and
   c) an outline of any management actions taken within the monitoring period to address any exceedances of the noise limits.

Air

1. The proponent must maintain the premises in a condition which prevents or minimises the emission of air pollutants, including dust, from the premises.
2. The proponent must conduct all activities on the premises by such practical means to prevent or minimise the emission of air pollutants, including dust.
3. The proponent must implement all reasonable and feasible $PM_{2.5}$ emission controls, including evaluation and adoption of best practice diesel emission controls.
4. The proponent must implement a robust air quality management system which incorporates all measures necessary to prevent or minimise air pollution, including dust, from the premises. The management system should include as a minimum;
   a) Proactive and reactive management strategies, including contingency plans and alternative practices for when water is not available.
   b) Monitoring network that is fit for purpose and suitably time-resolved to inform adequate reactive mitigation
   c) Key performance indicators, that are consistent with the objective of preventing and/or minimising air pollution
   d) Monitoring method(s)
   e) Location, frequency and duration of monitoring
   f) Record keeping;
   g) Response mechanisms
   h) Compliance reporting.