ETHOS URBAN

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SANCROX QUARRY EXPANSION PROJECT (SSD-7293) – RFI RESPONSE TO FURTHER EPA ADVICE

We refer to your correspondence of 25 November 2021, requesting a response to the issues raised in the EPA's further advice on the Sancrox Quarry Expansion Project (reference: DOC21/914564-05; EF13/3037).

The EPA's advice related to additional comments and recommendations associated with water quality, air quality and noise impacts, which have been addressed below.

1. Matters to be addressed prior to determination

(a) Water Quality – sediment basins have not been adequately sized.

The issue raised by the EPA is summarised as follows:

- *The design storm event used in the conceptual sediment basin design was the 80th percentile, 5 day storm event of 40.1mm (as recommended for a basin with an operational lifetime of 1 – 3 years, discharging to a standard sensitivity environment, in Table 6.1 of Managing Urban Stormwater: Soils and Construction - Vol 2E, Mines and Quarries).*
- *However, the proposed quarry life will be 30 years. It is therefore assumed that the duration of disturbance from the proposed basins will exceed 3 years.*
- *In addition, the site flows to mapped coastal wetlands protected under State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP 2018). Proposed basins S1NW, S2N, S4N and S4S flow to mapped Coastal Wetlands to the northwest of the site. Proposed basin NPPSA flows to a mapped Coastal Wetland to the east of the site.*
- *The EPA requests clarification and justification as to why the 80th percentile 5-day storm event (design storm event) was used to guide basin capacity. Consideration should be given to the proposed basin life, sensitivity of the receiving environment and the Coastal Management SEPP 2018.*

The EPA's assumption that the duration of disturbance from the proposed basins will exceed 3 years is incorrect. The conceptual basin design illustrated all of the basins cumulatively. However, basins will be delivered in a sequential basis, aligned with the staging of the quarrying activities. This means that only basins relevant to each stage of quarrying activities will be constructed and operational during that stage. Further the basins are only relevant and operational during the early phases of quarrying for each stage. Once sufficient quarrying has been carried out within each stage the pit forms a natural void, directing water away from discharge points. During these phases of quarrying, water falling within the quarry pit will be collected for reuse, and no water will be able to discharge towards the natural watercourses based on current topography. Rather, any excess water collected within the quarrying pit will be directed via the existing quarry void into the existing Sediment Retention Dam and Water Holding Dam network, which together have over 17,000m^3 worth of water storage capacity.

In relation to the sensitivity of the receiving environment, we note that the Coastal Management SEPP 2018 does not apply, since the quarrying development works are not within the areas mapped as Coastal Wetlands or as a Proximity Area for Coastal Wetlands by the online Coastal Viewer tool published by the Department of Planning, Industry and Environment.

With consideration of the above, it is considered reasonable to base the conceptual sediment basin design on an operational lifetime of 1 – 3 years, with discharges to a standard sensitivity environment. However, we note that there will be short periods of time within the early periods of each quarry stage when the installed sediment basin may still discharge along existing creek lines towards the identified Coastal Wetlands. As such, it would be a simple alteration for Hanson to ensure that sediment basins were designed for the 85th percentile storm event (rather than the 80th percentile), thereby reflecting the sensitive nature of the receiving environment during these times. Further, it is highlighted that there are no real limitations or constraints in relation the sizing of basins within the quarry footprint. As such, if it is deemed necessary by the Department of Planning, Industry and Environment (on the advice of the EPA) then Hanson could increase the size of the basins to account for the 95th percentile storm event, reflecting the worst case scenario of a basin with an operational lifetime of more than 3 years, with discharges to a 'sensitive' environment – notwithstanding that this would be considered to be an unnecessarily overly conservative application of the Managing Urban Stormwater: Soils and Construction - Vol 2E, Mines and Quarries guideline.

(b) <u>Air Quality – predicted large project increments and additional exceedances at various receptors</u>

The issue raised by the EPA is summarised as follows:

- *The EPA considers that reactive management measures that are linked to clear, specific trigger levels and actions could manage potential impacts. To provide a level of confidence that the proposed reactive management measures can resolve the predicted additional exceedances, the EPA considers that the proponent provide more robust, detailed information on the reactive management measures, and a demonstration that the reactive management measures can resolve the predicted additional exceedances. This could include further analysis of the time series of predicted exceedances (or revised modelling), accounting for the specific actions that would be implemented at specific trigger levels.*
- *Recommendation: Further robust information is required to provide confidence that the additional exceedances can be managed through reactive management measures based on proposed ambient air monitoring. The EPA recommends that the proponent provide additional analysis or revised modelling results accounting for the proposed reactive management measures at specific trigger levels to demonstrate that predicted additional exceedances can be managed.*

We note that the EPA states that it "considers that reactive management measures that are linked to clear, specific trigger levels and actions could manage potential impacts". We also note that Hanson operates Trigger Action Response Plans to successfully manage potential air quality impacts at a number of quarry sites around NSW. With this in mind we consider it manifestly unreasonable to require detailed analysis and modelling of all type of possible conditions and management responses that might occur at the site. The entire purpose of a Trigger Action Response Plan is that it is adaptable and flexible – enabling the operators to manage the specific site activities in a way that ensures exceedances do not occur. With this in mind, we have provided further details of the proposed Trigger Action Response Plan to provide the EPA with confidence that the exceedances predicted by scenario modelling can be managed through the proposed reactive management measures based on proposed ambient air monitoring.

The Trigger Action Response Plan would be designed to enable the site management to estimate when air quality impacts may occur and mitigate in advance to enable the impacts to be prevented or avoided. The Trigger Action Response Plan includes the following:

- PM10 monitoring on the northern and eastern boundaries, as well as an onsite weather station. Data from this network will provide real-time information to site managers regarding both PM10 concentrations and meteorological conditions to enable the appropriate management of emissions and therefore potential impacts offsite before they occur.
- A 1-hour average will be used to identify sustained elevated dust concentrations that could potentially result in an exceedance of the PM10 criterion. The time-step will provide sufficient time for additional mitigation measures to be implemented at the quarry to reduce dust emissions before an exceedance occurs.

- The trigger levels within the Trigger Action Response Plan will be consistent with levels used at a number of major construction and extractive industry site in NSW to successfully manage dust impacts in a proactive manner.
- Nominated 1-hour average trigger levels will be reviewed as monitoring data is collected at the site. This will ensure that the trigger levels remain appropriate for the ongoing monitoring and management of PM10 emissions from the quarry. Monitoring data can also be used to validate the modelling at these receptors given the conservative nature of the assessment.
- The Table below provides an example of how this procedure would work in practice. It is highlighted that the trigger levels identified in the table are indicative only as they are not yet defined – these levels will be dependent on the specific location of the air quality monitor and its proximity to the boundary, and will be agreed with the EPA prior commencing operations.

Action level	Trigger level	Response
Alert	PM_{10} is greater than 100μg/m^3 (but less than 125μg/m^3)	• Quarry management to review wind direction and environmental conditions to determine if elevated emissions are originating from the quarry or sourced from another local or regional source/event. • Quarry management to confirm all standard mitigation practices are being followed and remain alert as to any further increase in PM_{10} concentrations that may require further action. • This will include a visual inspection of dust emissions and current activities, as well as a review of background conditions that may be the key contributor to high levels being recorded (e.g., based on wind direction, information on bush fires in the region etc).
Action I	PM_{10} is greater than 125μg/m^3 (but less than 150μg/m^3)	• Exceedance of interim trigger level will alert quarry management of increase in short term PM_{10} concentrations. • Will prompt review of the need to increase / relocate water where required based on visible dust etc. including to increase watering rates on haul roads where appropriate. • Will also trigger actions such as reduce speed of equipment / vehicles and delaying dusty activities (such as blasting), if appropriate. • Even if elevated PM_{10} concentration is concluded to be due to elevated background concentrations rather than emissions from the Quarry, steps will be taken to minimise the additional incremental impacts from the Quarry where possible. • Note the changed state and continue to closely monitor dust concentrations being recorded.
Action II	PM_{10} is greater than 150μg/m^3	• Direct action by Quarry management to reduce emission levels. For example. assessing whether dust-generating activities (including processing, load and haul, unloading activities) are to be temporarily stopped or relocated until conditions improve. Cease any dust-producing activities not critical to ongoing operation of quarry (e.g., construction works, grading, clearing etc) or relocate relevant activities where possible away from sensitive receptors. • Review planned operations considering exposed areas and delay blasting until conditions improve.

(c) Air Quality – uncertainty in the emissions inventory estimations

The EPA considers that the issues around the modelling scenarios have been adequately addressed. However as advised above, further information is required on the implementation of management strategies to demonstrate that predicted impacts can be managed.

Noted. See the response to item (b) above in relation to active management of predicted air quality impacts.

2. Matters to be addressed with conditions

(a) Noise Impacts – background noise has not been adequately assessed

The EPA is not satisfied with the data and assurances provided by ERM in relation to the potential influence of existing quarrying operations on background noise monitoring data. The EPA has therefore recommended conservative noise limits that reflect calculated night time noise limits under noise enhancing meteorology.

Hanson is willing to accept the conservative noise limits recommended by the EPA.

3. Matters to be addressed post approval

(a) Licence Variation Required

Noted. Hanson will submit a licence variation application in due course.

We trust that the information provided above is suitable to address the further issues raised by the EPA. If you have any question in relation to the additional information provided please contact me on 0450 133 453 or at tward@ethosurban.com. We also note that there remains a second Request for Information dated 26 August 2021, relating to issues raised by the Biodiversity and Conservation Division and Port Macquarie-Hastings Council. We are currently finalising a response to these issues and will provide a response to these issues as soon as possible.

Regards

T. Ward

Tim Ward
Director, Planning - Ethos Urban